

REGULATION FILING AND PUBLICATION

1. Regulation Chapter Number and Heading:

520 CMR 6.00

2. Name of Agency:

Department of Public Safety

3. This document is reprinted from the Code of Massachusetts Regulations and contains the following:

520 CMR 6.01 General Provisions, Scope, Definitions, Standards Adopted

520 CMR 6.02 General Administrative Provisions, Including Requirements for Licensure, Apprentice Licenses, and Renewals

520 CMR 6.03 Issuance of Temporary Permits to Operate Rented Compact Hoisting Machinery

520 CMR 6.04 Continuing Education and Training Facilities

520 CMR 6.05 Apprentice Licenses

520 CMR 6.06 Exempt Companies; Exemptions for Licensing Requirements Pursuant to M.G.L. c. 146, § ~~Section~~ 53

520 CMR 6.07 In-Service Training Program for Exempt Companies

520 CMR 6.08 Operating Procedures for Hoisting Machinery

520 CMR 6.09 Special Requirements for Cranes, Derricks, Pile Drivers, Excavating Machines, Fork Lifts, and Hoists

520 CMR 6.10 Classification of Licenses; Qualifications

520 CMR 6.11 Operation of Hoisting Machinery; Accident Reporting

520 CMR 6.12

Suspension, Revocation, and Appeals of Licensing,
Certification, and Temporary Permitting

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Variance Procedure

Under the provisions of Massachusetts General Laws, Chapter 30A, Section 6 and Chapter 233, Section 75, this document shall not be used as evidence of the original documents on file with the State Secretary.

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520 CMR 6.00: HOISTING MACHINERY

6.01: General Provisions, Scope, Definitions, Standards Adopted

(1) Scope.

520 CMR 6.00 is promulgated by the Department of Public Safety pursuant to authority granted by G.L. c. 146, § 53. The purpose of 520 CMR 6.00 is to establish reasonable requirements to protect the public safety of the citizens of the Commonwealth from the hazards inherent in the operation of Hoisting Machinery by establishing the minimum standards necessary to obtain a Hoisting Machinery operator's License or Temporary Permit and the minimum safety standards to be followed during the operation of Hoisting Machinery. 520 CMR 6.00 shall apply to:

Hoisting Machinery as defined in 520 CMR 6.01 that is used on private or public property for the erection, construction, alteration, demolition, repair or maintenance of buildings, structures, bridges, highways, roadways, dams, tunnels, sewers, underground buildings or structures, underground pipelines or ducts and all other construction projects or facilities or other uses on private or public grounds including the warehousing and movement of materials, except when being used exclusively for agriculture purposes.

(2) Definitions.

The following words and terms, when used in 520 CMR 6.00 shall have the following meanings unless the context clearly indicates otherwise or the term is redefined for a specific section or purpose:

ANSI. American National Standards Institute.

Apprentice License. A document issued by the Department upon proof of registration at a Training Facility and with the Division of Apprentice Training within the Department of Labor Standards, which enables the holder to operate Hoisting Machinery under the direct guidance and supervision of a duly licensed person licensed to operate the category of Hoisting Machinery for which documentation is issued.

Apprentice Licensee. A person, who is at least 18 years of age, holds a valid driver's license, is registered with the Department of Labor Standards, and has obtained an Apprentice License to operate Hoisting Machinery while under the direct guidance and supervision of a duly licensed person.

ASME. American Society of Mechanical Engineers.

Cargo. A load, quantity, or volume that can be processed or transported.

Certificate of Completion. A uniform certificate issued by a Training Facility to a Licensee upon the satisfactory completion of a continuing education curriculum.

Chief. The Chief of Inspections – Mechanical of the Department of Public Safety.

Commissioner. The Commissioner of the Department of Public Safety.

Compact Hoisting Machinery. Hoisting Machinery with a gross vehicle weight not exceeding 10,000 pounds, excluding Class 1, Class 3, and Class 4 Hoisting Machinery as listed in 520 CMR 6.10. Hoisting Machinery operated under a Temporary Permit shall not exceed a gross vehicle weight of 8,000 pounds.

Company License. A License issued by an exempt company that has a Department approved In-Service Training program and which is only valid for Hoisting Machinery used on Company Property.

Company Property. Property which is owned or under the care and control of a tenant company under a lease or rental agreement. No operation shall occur on any public or a private way, excluding Company Property.

Competent Person. One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous ~~to employees~~, and who has authorization to take prompt corrective measures to eliminate such conditions.

Department. The Department of Public Safety.

DAT. The Division of Apprentice Training.

DOT. The United States Department of Transportation.

Emergency Procedure. Actions required to be taken when imminent danger may occur to prevent damage to life, property, or to ensure public safety.

Fork Lift. Any mobile power-propelled truck used to carry, push, pull, lift, stack or tier materials, ~~excluding Earth moving, and over the road haulage trucks, and are not included in the definition. Equipment that which~~ was designed to move earth but has been modified to accept forks ~~are also not included.~~

Hoisting Machinery. Derricks, cableways, machinery used for discharging Cargoes, and temporary elevator cars used on excavation work or used for hoisting building material, when the motive power to operate such machinery is mechanical and other than steam, including but not limited to excavators, backhoes, front end loaders, unloaders, skid loader, skid steer loaders, compact loaders or similar devices, lattice cranes, derricks, cranes with or without wire rope; all Fork Lifts, powered industrial lift trucks, overhead hoists (underhung), overhead cranes, underhung cranes, monorail cranes, lifting devices, cableways, powered platforms and any other equipment that has the minimum capability of hoisting the load higher than 10 feet, ~~and or either that has~~ the capability of lifting loads greater than 500 pounds or ~~if the~~

capacity of the bucket exceeds 1/4 cubic yards ~~capacity~~; overhead bridge cranes, electric or air driven hoists, pendant controlled hoists, specialty equipment as categorized by License grade in this regulation.

Incident. A situation that results in Serious Injury, Property Damage, or any condition that is necessary for the preservation of the public health or safety ~~at a site~~.

Injury and Incident Documentation. A form furnished by the Department of Public Safety detailing all specific information regarding any Serious Injury or Mechanical Failure that may have occurred.

In-Service Training. A company program that has been approved by the Department and is required for issuance of a Company License by those companies that have been exempted from hoisting licensing requirements, pursuant to G.L. c. 146, § 53.

Inspector. District Engineering Inspector employed by the Department of Public Safety.

Instructor. An individual duly licensed by the Department as a Hoisting Machinery operator who educates and trains Licensees and Apprentice Licensees in the operation of Hoisting Machinery.

License. A document issued by the Department to an individual to operate a certain type and class of Hoisting Machinery.

Licensee. A person who is at least 18 years old, holds a valid driver's license and has completed the necessary requisites for licensure to operate Hoisting Machinery.

Manufacturer Approved Attachment. Attachable equipment tailored to perform a particular task, designed or approved for use in accordance with the equipment manufacturer's specifications and operational and safety requirements. In the event the manufacturer does not exist, a Massachusetts registered professional engineer shall review and approve, in writing, the actions and reasons for said specifications to the attachable equipment.

Mechanical Failure. Damage to Hoisting Machinery which affects the capacity or safe operation of the equipment per the manufacturer's specifications.

Modification. Alterations, extensions or repairs made to Hoisting Machinery which alter the machinery's original structure.

Operator's Manual. The document created by the manufacturer of the Hoisting Machinery that contains the required procedures and forms for the safe operation of Hoisting Machinery at the stated site pertaining to that specific equipment.

Placard. A Department issued certificate posted on Hoisting Machinery which acts as a notice of the unsafe condition of the machinery.

Property Damage. Damage of private or public property that exceeds \$5,000 per Incident.

Qualified Welder. A welder certified by the American Welding Society (AWS) or an acceptable alternative welding certification.

SAE. Society of Automotive Engineers.

Serious Injury. A personal injury/illness that results in death, dismemberment, significant disfigurement, permanent loss of the use of a body organ, member, function, or system, a compound fracture, or other significant injury/illness ~~that requires immediate admission and observation by a licensed physician.~~

Signal Person. A trained individual qualified in the use of signals to direct the operator of Hoisting Machinery and warn of possible or existing hazards through the use of hand signals, audible signals, or flashing lights. (See Appendix A.)

Short-Term Rental Entity. A person or organization approved by the Department, who is in the business of renting Compact Hoisting Machinery for which a Temporary Permit is required.

Short-Term Rental Entity Facilitator. An employee of the Short-Term Rental Entity who holds a Massachusetts Hoisting License issued by the Department and is responsible for the written and practical training, examinations, and issuance Temporary Permits.

Temporary Permit. A non-renewable permit to operate Compact Hoisting Machinery, with a gross vehicle weight not exceeding 8,000 pounds, issued by a Department approved Short-Term Rental Entity for no more than 14 consecutive days.

Temporary Permit Holder. A person who is at least 18 years of age, holds a valid driver's license, and has obtained a Temporary Permit to operate Compact Hoisting Machinery with a gross vehicle weight not exceeding 8,000 pounds.

Training Facility. A site including buildings and machinery located thereon, that has been approved by the Department to train individuals in the safe operation of Hoisting Machinery and may also provide courses in continuing education for individuals licensed to operate Hoisting Machinery.

Training Period. Time during which an Apprentice Licensee participates in a training program on-site at a Training Facility.

Utility. Any organization or company which provides electricity, natural gas, phone or cable services to the public.

- (3) Regulations and Standards Adopted. The standard for operation of Hoisting Machinery shall be in accordance with the following:

ANSI/ASME

B30.2-2011	Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)
B30.3-201 62	Tower Cranes
B30.5-201 41	Mobile and Locomotive Cranes
B30.9-201 40	Slings
B30.10-201 409	Hooks
B30.11-2010	Monorails and Underhung Cranes
B30.16-2012	Overhead Hoists (Underhung)
B30.17-201 506 (R2012)	Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist)
B30.20-201 30	Below-the-Hook Lifting Devices
B30.22-201 60	Articulating Boom Cranes
B30.26-201 50	_____ Rigging Hardware, Includes Errata (2011)

SAE

J1307-2002	Excavator and Backhoe Hand Signals
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The Occupational Safety and Health Administration (OSHA) Regulations

29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1910	Occupational Safety and Health Standards

Regulations

220 CMR 99	Procedures for the Determination and Enforcement of Violations of G.L. c. 82, § 40 (“Dig Safe”)
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6.02: General Administrative Provisions, Including Requirements for Licensure, Apprentice Licenses, and Renewals

- (1) Scope. 520 CMR 6.00 establishes general administrative provisions including License issuance, License renewals, fees, examinations, and appeals for all Hoisting Machinery licensure.
- (2) General requirements for licensure.
 - (a) All applicants, including those applying for an Apprentice License, shall be at least 18 years of age.
 - (b) All applicants shall submit the following documentation:
 1. A completed application to operate Hoisting Machinery on a form provided by the Department;
 2. A fee to be determined annually by the Secretary of Administration and Finance under the provisions of G.L. c. 7, § 3B;
 3. A legible photocopy of the applicant’s valid DOT medical

certificate, Intrastate Medical Waiver from the Massachusetts Registry of Motor Vehicles or ANSI/ASME B30.5-2011 qualifications for operators. In the event that the DOT medical certificate expires prior to the expiration of the Hoisting License, the Licensee shall submit a legible photocopy of the new certificate;

4. A photograph or permission to gain access to the Massachusetts Registry of Motor Vehicles database if applicant is a resident of Massachusetts;
5. A legible photocopy of the applicant's valid driver's license. In the event that the applicant's driver's license expires prior to the expiration of the Hoisting License, the applicant shall submit a legible photocopy of the new driver's license when it is received;
6. In addition to the requirements of 520 CMR 6.02 (2)(b)(1-5), applicants for an Apprentice License shall also submit a copy of their Annual Apprentice ID Card issued by the DAT.

(3) Examination for License to Operate Hoisting Machinery.

(a) Written:

(1) All applicants for a License to operate Hoisting Machinery License shall pass a written examination administered by the Department by earning a minimum grade of 70% and shall demonstrate knowledge of the following:

- a. the operation of the equipment for which they are being examined;
- b. the ability to comprehend and interpret all Placards, operation manuals, safety codes and other information pertinent to safe hoisting operations in the English language;
- c. Emergency Procedures;
- d. Massachusetts General Laws and regulations as they relate to Hoisting Machinery.

(2) Pursuant to G.L. c. 146, § 57, Individuals receiving a failing score may not retake an examination for a License to operate Hoisting Machinery within 90-60 days of the previous examination.

(3) In addition to the written examination, applicants for licensure to operate Hoisting Machinery may be required to pass a practical examination at the discretion of the Department or if required by

Federal law for the specific type of equipment for which they have applied to operate.

(b) Practical Examination:

Applicants taking the practical examination shall demonstrate knowledge of the following:

- (1) The ability to operate the equipment for which they are being examined;
- (2) The ability to comprehend and interpret all Placards, operators' manuals, safety codes and other information pertinent to safe hoisting operations;
- (3) The ability to comprehend and interpret hand signals;
- (4) The ability to communicate in English;
- (5) Emergency Procedures;
- (6) Applicable Massachusetts General Laws and regulations as they relate to Hoisting Machinery.

- (4) Hoisting Licenses shall be carried on the person of the operator during all times the operator is operating Hoisting Machinery and shall be furnished for inspection by the operator at the request of an Inspector, the Chief or the Commissioner.

(5) Denial; Appeals.

(a) The Department may refuse to issue a License to an applicant based on the following grounds:

- (1) Submittal of an incomplete application or submittal of an application on a form not authorized by the Department;
- (2) Failure to submit required fees;
- (3) Submittal of false, invalid, incorrect or fraudulent information;
- (4) If at the time of application, the applicant is under investigation by the Department;
- (5) Failure to pass a practical examination (if required);
- (6) Failure to pass the required written examination.

(b) If the Department refuses to issue a License based upon any of the reasons set forth in 6.02 (5)(a)(1-6), it shall notify the applicant in writing, setting forth the reasons for the denial. Within one week of receipt of the denial, the applicant may make written demand on a form authorized by the Department to the Chief for a hearing before a board of appeals consisting of three Department Inspectors appointed by the Chief or the Chief and two Inspectors. The hearing shall be held promptly and in accordance with G.L. c. 30A and 801 CMR 1.02.

(c) Failure to Pass Written Examination as Required by 520 CMR 6.02(5)(a)(6): The results of the written examination shall be posted on the Department's website (www.mass.gov/dps). If an applicant receives a failing score, the applicant may make written demand upon the Chief for a hearing. The written demand shall be submitted on a form authorized by the Department within one week of the examination score being posted on the website. The hearing shall be held before a board of appeals consisting of three Department Inspectors appointed by the Chief or the Chief and two Inspectors. The hearing shall be held promptly and in accordance with G.L. c. 30A and 801 CMR 1.02.

(d) If, after a hearing pursuant to 520 CMR 6.02(5)(b) or (c), the Board denies the issuance of the License, it shall notify the applicant in writing. Such notice shall be sent by certified mail and/or first class mail and shall contain the reasons supporting the denial. Within 30 days after receipt of the notice, the applicant may appeal such denial to Superior Court in accordance with G.L. c. 30A, § 14.

(6) License Renewals:

All applicants for renewal licensure shall submit the following to the Department:

- (1) A Certificate of Completion evidencing the satisfaction of continuing education hours required pursuant to 520 CMR 6.04;
- (2) A completed application with a valid and current mailing address and email address on a form provided by the Department;
- (3) A fee to be determined annually by the Secretary of Administration and Finance under the provisions of G.L. c. 7, § 3B;
- (3)(4) A legible photocopy of the applicant's valid DOT medical certificate-, [Intrastate Medical Waiver from the Massachusetts Registry of Motor Vehicles](#) or ANSI/ASME B30.5-2011 qualifications for operators. In the event that the DOT medical certificate expires prior to the expiration of the Hoisting License, the Licensee shall submit a legible photocopy of the new certificate;
- (4)(5) A photograph or permission to gain access to the Massachusetts Registry of Motor Vehicles database if applicant is a resident of Massachusetts;
- (5)(6) A legible photocopy of the applicant's valid driver's license. In the event that the applicant's driver's license expires prior to the expiration of the Hoisting License, the applicant shall submit a legible photocopy of the new

driver's license when it is received.

In accordance with G.L. c. 146, § 67, a notice of the date of expiration of a License shall, at least 30 days prior to such date, be sent to the Licensee. It is the responsibility of the Licensee to notify the Department of any changes to their mailing address and email address. Failure to provide the Department with a valid and current mailing address and email address may result in the delay of a License renewal. Licenses not renewed at expiration date shall become void, and shall after one year be reinstated only by re-examination of the Licensee.

(7) Renewals of Apprentice Licenses:

- (a) Apprentice Licenses shall be valid for the term of registration and may be renewed upon the submission of a copy of the applicant's Annual Apprentice ID Card issued by the DAT as proof that the Apprentice Licensee remains registered with the Division of Apprentice Training of the Department of Labor Standards.
- (b) Applicants for Apprentice License renewals shall also submit the following:
 - 1. A complete application with a valid and current mailing address and email address for renewal of an Apprentice License to operate Hoisting Machinery as provided by the Department;
 - 2. A fee to be determined annually by the Secretary of Administration and Finance under the provisions of G.L. c. 7, § 3B;
 - 3. A valid DOT medical certificate documenting that the applicant meets the criteria for a DOT medical examination, [Intrastate Medical Waiver from the Massachusetts Registry of Motor Vehicles](#) or ANSI/ASME B30.5-2011 qualifications for operators;
 - 4. A Certificate of Completion;
 - 5. A photograph or permission to gain access to the Massachusetts Registry of Motor Vehicles database if applicant is a resident of Massachusetts;
 - 6. A legible photocopy of a valid driver's license.

In accordance with G.L. c. 146, § 67, a notice of the date of expiration of an Apprentice License shall, at least 30 days prior to such date, be sent to the Apprentice Licensee. It is the responsibility of the Apprentice Licensee to notify the Department of any changes to their mailing address and email address. Failure to provide the Department with a valid and current mailing address and email address may result in the delay of an Apprentice License renewal. Apprentice Licenses not renewed at expiration date shall become void, and shall after one year be reinstated only by re-examination of the Apprentice Licensee.

6.03: Issuance of Temporary Permits to Operate Rented Compact Hoisting Machinery

- (a) Approval by Department: All individuals or organizations seeking approval to issue Temporary Permits as Short Term Rental Entities shall submit for the Department's approval, the following:
1. A completed application on a form furnished by the Department;
 2. A copy of the training program to be used by the Short Term Rental Entity in accordance with 520 CMR 6.00;
 - (1) A list of all instructors employed by the rental company, including the names, License numbers with designated type and class of Hoisting Machinery, and expiration dates;
 - (2) A course syllabus for each equipment type to be used in the training program;
 - (3) The minimum topics and texts included as part of the training program curriculum shall include but may not be limited to:
 1. G.L. c. 146;
 2. 520 CMR 6.00;
 3. 520 CMR 14.00;
 4. OSHA Standards 29 CFR 1926;
 5. G.L. c. 82, § 40;
 6. G.L. c. 82A;
 7. G.L. c. 164, § 76D;
 8. 220 CMR 99.00 (Dig Safe).
 3. A copy of the examination(s) to be used;
 4. The make and model of the equipment to be used in the training program;
 5. the name and Massachusetts Hoisting License number of at least one individual who will act as the Short Term Rental Entity Facilitator;
 6. A legible photocopy of the Short Term Rental Entity Facilitator's Massachusetts Hoisting License;
 7. A legible photocopy of the Short Term Rental Entity Facilitator's driver's license.

The Department shall issue a certificate of approval to individuals or organizations seeking approval to issue Temporary Permits as Short Term Rental Entities. Approval shall be contingent upon having a Short Term Rental Entity Facilitator that holds a valid Massachusetts Hoisting License in the applicant entity's employ.

- (b) The Short Term Rental Entity shall have a Short Term Rental Entity Facilitator to monitor all permitting requirements. The Short Term Rental Entity Facilitator shall hold a Massachusetts Hoisting License of equal or greater grade of Massachusetts License than the Compact Hoisting Machinery to be rented and will verify by their signature on the Temporary Permit that all those issued Temporary Permits have fully participated in the Short Term Rental Entity's training program and passed the examination;
- (c) If the Short Term Rental Entity Facilitator is no longer employed by the rental entity or is no longer going to serve as the Facilitator, the Short Term Rental Entity shall notify the Department of the new facilitator within 14 days of the change on a form authorized by the Department. No Temporary Permits shall be issued by the Short Term Rental Entity without a valid Short Term Rental Entity Facilitator approved by the Department.
- (d) Requirements for Short-Term Rental Entity Training Program. Short Term Rental Entities shall comply with the following requirements:
- (1) Any entity that has been approved by the Department to issue Temporary Permits shall have a valid certificate of approval posted visibly at the rental location.
 - (2) No person shall be issued more than one Temporary Permit in any 45 day period from the expiration of said Temporary Permit.
- (e) Requirements for Temporary Permits:
- (1) All applicants shall be at least 18 years of age.
 - (2) All applicants shall possess a valid driver's license to operate a motor vehicle.
- (f) All applicants shall submit the following documentation to the Short-Term Rental Entity prior to taking the examination for a Temporary Permit:
- (1) A complete application to operate a specific type of Compact Hoisting Machinery as provided by the Short-Term Rental Entity;
 - (2) A legible photocopy of the applicant's valid driver's license.

(g) Issuance of Temporary Permits.

- (1) Only upon compliance with the requirements described in 520 CMR 6.03, the Short Term Rental Entity may issue a Temporary Permit to operate the rented Compact Hoisting Machinery during the rental terms. The Temporary Permit shall not be valid for more than 14 consecutive days.
- (2) This Temporary Permit shall be on a form authorized by the Department.
- (3) The Short Term Rental Entity shall retain the original Temporary Permit application, the examination(s), and duplicates of the Temporary Permit for a period of 3 years.
- (4) Rental facilities shall issue a Temporary Permit (provided on a standard form by the Department) to those who satisfactorily complete and pass an examination. Temporary Permits shall contain the following information:
 - a. Name of Temporary Permit Holder;
 - b. Address of Temporary Permit Holder;
 - d. Name and address of Short Term Rental Entity issuing the Temporary Permit;
 - e. The printed name and legible signature of the Short Term Rental Entity Facilitator verifying that the participant has completed the permit requirements;
 - f. The issuance and expiration date of the Temporary Permit;
 - g. The description of Compact Hoisting Machinery for which the Temporary Permit is valid;
 - h. The make and model of the piece of Compact Hoisting Machinery that is being rented;
 - i. A photograph of the Temporary Permit holder.

- (h) Short Term Rental Entities that are approved to issue Temporary Permits shall keep uniform records of Temporary Permit Holders documentations and have those records readily accessible to Inspectors of the Department upon request for a period of three years. They shall be responsible for the security and retention of all uniform permits and the proper issuance thereof.

- (i) Falsification of Documents. The fraudulent issuance of Temporary Permits by any Licensee shall be grounds for initiating formal proceedings under G.L. c. 146, § 59 and c. 30A and may be grounds for the Department to immediately suspend or revoke its approval of the Short Term Rental Entity to issue Temporary Permits.
- (j) A Temporary Permit is only valid for Compact Hoisting Machinery as defined in 520 CMR 6.01.
- (k) A Temporary Permit and a valid driver's license shall be carried on the person of the operator during all times the operator is operating rented Compact Hoisting Machinery, pursuant to G.L. c. 146, § 54, and shall be furnished for inspection by the operator at the request of the Chief or Inspector or the Commissioner.
- (l) Any person seeking to rent a piece of Compact Hoisting Machinery more than 45 days after the expiration of a Temporary Permit shall complete an approved Short Term Rental Entity's training program and pass the examination again to have a new temporary permit issued.

6.04: Continuing Education and Training Facilities

All Hoisting License holders shall complete continuing education requirements of this section prior to license renewal, unless a request for an inactive license status has been made pursuant to 520 CMR 6.04(3).

(1) Continuing Education and Training Facilities.

(a) Approval by Department

All individuals or organizations seeking approval to operate as a Training Facility that offers one or more continuing education course(s) shall submit, for the Department's approval, an application on a form furnished by the Department as well as a copy of all curriculum, training materials, certificates of completion to be used by the facility, and a list including the names and Massachusetts Hoisting Machinery License numbers of all Instructors. Organizations seeking approval shall include but may not be limited to public and private education facilities and employer provided training programs. The Curriculum shall contain the minimum topics and associated hours for those topics as listed in 520 CMR 6.04(b)(6).

(b) The following provisions are required in order for any institution or organization to have their continuing education program considered for approval:

1. A copy of all curriculum, training material, and Certificate of Completion to be used shall be provided to the Department.
2. Curriculum shall contain the minimum topics and associated hours for those topics as listed in 520 CMR 6.04(b)(6).
3. All courses shall be monitored by a Massachusetts Hoisting Licensee of equal or greater grade of Massachusetts License, who will verify by their printed name, legible signature, and hoisting license number on the Certificate of Completion, that all those issued a Certificate of Completion have fully participated in the program for which they have been issued a certificate.
4. Instructors may receive continuing education credits for providing instruction, however Instructors shall only be credited hours for the actual non-redundant time that they have spent actively participating in the instruction of the program.
5. Method of Verification. Each program shall provide a means to ensure certificate authenticity. Such means shall include, but not be limited to:
 - a. School embossment of certificate;
 - b. Computer data transfer of program participants to the Department;
 - c. Signature verification; or
 - d. Numbered certificates and a list of corresponding Licensees.
6. Curriculum. Continuing education programs approved by the Department shall offer a curriculum that, at a minimum, complies with the following requirements for each associated class of Hoisting Machinery licensure:
 - a. Class 1 (Hoisting) Licenses:
 - i. The minimum number of continuing education hours required for renewal of a 1A, 1B, or 1C License shall be four (4) classroom hours:
 1. Two classroom hours of regulatory and industry standard training;
 2. ~~and two (2) classroom hours for the~~ Two classroom hours of equipment specific training.
 - ii. The minimum number of continuing education hours required for renewal of a 1D License shall be two classroom hours:
 1. One classroom hour of regulatory and industry standard training;
 2. One classroom hour equipment specific training.

~~ii.~~ iii. The minimum topics and texts included as part of the continuing education curriculum for purposes of renewing a 1A, 1B, 1C, or 1D License shall include but may not be limited to:

1. G.L. c. 146;
2. 520 CMR 6.00;
3. 520 CMR 14.00;
4. OSHA Standards 29 CFR 1926;
5. OSHA Standards 29 CFR 1910;
6. ANSI B30;
7. G.L. c. 82, § 40;
8. G.L. c. 82A;
9. G.L. c. 164, § 76D.

b. Class 2 (Excavation) Licenses:

i. The minimum number of continuing education hours required for renewal of a 2A, 2B, 2C, and 2D License shall be four (4) classroom hours:

1. Two classroom hours of regulatory and industry standard training;
2. Two classroom hours of equipment specific training.

~~ii.~~ ii. The minimum topics and texts included as part of the continuing education curriculum for purposes of renewing a 2A, 2B, 2C, or 2D License shall include but may not be limited to:

1. G.L. c. 146;
2. 520 CMR 6.00;
3. 520 CMR 14.00;
4. OSHA Standards 29 CFR 1926
5. G.L. c. 82, § 40;
6. G.L. c. 82A;
7. G.L. c. 164, § 76D;
8. 220 CMR 99.00 (Dig Safe).

c. Class 3 (Electric and Pneumatic)~~(Tower and Electric)~~ Licenses:

i. The minimum number of continuing education hours required for renewal of a 3A License shall be four classroom hours:

1. Two classroom hours of regulatory and industry standard training;

2. Two classroom hours of equipment specific training.

i.ii. The minimum topics and texts included as part of the continuing education curriculum for purposes of renewing a 3A License shall include but may not be limited to:

1. G.L. c. 146;
2. 520 CMR 6.00;
3. OSHA Standard 29 CFR 1926;
4. OSHA Standard 29 CFR 1910;
5. ANSI B30.

d. Class 4 (Specialty) Licenses:

~~i. The minimum number of continuing education hours required for renewal of a 4A License shall be four (4) classroom hours.~~

i. The minimum number of continuing education hours required for renewal of a 4B, 4C, 4D, 4E, 4F, or 4G License shall be two (2) hours:

1. One classroom hour of regulatory and industry standard training;
2. One classroom hour equipment specific training.

ii. The minimum topics and texts included as part of the continuing education curriculum for purposes of renewing a ~~4A~~, 4B, 4C, 4D, 4E, 4F, or 4G License shall include but may not be limited to:

1. G.L. c. 146;
2. 520 CMR 6.00;
3. 520 CMR 14.00
4. OSHA Standards 29 CFR 1926;
5. OSHA Standards 29 CFR 1910;
6. ANSI B30;
7. G.L. c. 82, § 40
8. G.L. c. 82A;
9. G.L. c. 164, § 76D;
10. 220 CMR 99.00 (Dig Safe).

7. Multiple Classes. A Licensee who holds a Hoisting License with multiple classes shall ~~must~~ complete only two classroom hours of

regulatory and industry standard training and the equipment specific training for each class applicable to their Hoisting License.

78. List of Instructors. Each program shall provide a list including the names and Massachusetts Hoisting Machinery License numbers of all continuing education Instructors employed by the Training Facility. Names and applicable License numbers of Instructors shall be updated by the Training Facility operator within 14 days of the employment or the cessation of employment of an Instructor by a Training Facility on a form furnished by the Department.

(c) Certificates of Completion.

(1) Training Facilities shall issue a Certificate of Completion to Licensees who satisfactorily complete a continuing education course. Upon completion, all Massachusetts operators of Hoisting Machinery shall receive a Department approved certificate, a copy of which shall be retained by the Training Facility. It shall be furnished at the request of the Department. Certificates of Completion shall contain the following information:

- a. Name of participant;
- b. Address of participant;
- c. E-mail address of participant;
- d. Massachusetts License grade and number of participant;
- e. Name and address of the institution or organization providing the continuing education/assessment;
- f. A printed name and legible signature of a Licensee verifying participant has completed the hours as listed on the certificate;
- ~~g. and.~~ The License number of the Licensee endorsing the certificate; and
- h. Date of issuance.

(2) Each program shall provide a means to ensure certificate authenticity and shall provide evidence of the means of certification to the Department. Such means shall include:

- a. School embossment of certificate;
- b. Computer data transfer of program participants to the Department;
- c. Signature verification; or
- d. Numbered certificates and a list of corresponding Licensees.

(d) Program Instructors who are approved to conduct continuing education programs shall keep uniform records of attendance of Licensees and have those records readily accessible to Inspectors of the Department upon request for a period of three years. They shall be responsible for the security and

retention of all uniform certificates and the proper issuance thereof. Instructors shall verify by signature that participants in continuing education programs have satisfactorily completed the necessary training.

- (e) Falsification of Documents. The falsification of attendance records or fraudulent issuance of certificates of completion by any Licensee shall be grounds for initiating formal proceedings under G.L. c. 146, § 59 and c. 30A and may also result in immediate suspension or revocation of the License.

(2) Continuing Education Requirements for License Renewal

- (a) Subsequent renewals of any License other than Apprentice Licenses that expires in an even year shall expire on the next anniversary of the Licensee's date of birth occurring in an even year. Subsequent renewals of any License other than an Apprentice License that expires in an odd year shall expire on the next anniversary of the Licensee's date of birth occurring in an odd year.
- (b) Renewals of Licenses shall be granted upon submission of required documentation pursuant to 520 CMR 6.02.
- (c) The Department may accept education, training, or service completed by an individual as a member of the armed forces, as defined in G.L. c. 4 § 7, clause 43, or the United States military reserves as an alternative or in addition to submission of required documentation pursuant to 520 CMR 6.02. The applicant shall submit a license renewal application along with a Verification of Military Experience and Training form and any other supporting documentation. The education, training, or service submitted to the Department shall have been completed within 24 months of submission.

(3) Inactive Status.

- (a) Any operator of Hoisting Machinery who is unable to obtain the required continuing education necessary to renew their License may request that the License be placed in inactive status for up to one continuing education cycle. Such request shall be made in writing on a form furnished by the Department.
- (b) Operators holding a License on inactive status shall not be authorized to operate Hoisting Machinery for the time period that the License is inactive.
- (c) A determination by the Department that a Licensee may return to active status shall be made following the Department's receipt of a written request by the Licensee on a form furnished by the Department, the required renewal fee, a Certificate of Completion, and submission of required documentation pursuant to 520 CMR 6.02(6).

(4) Expiration. Pursuant to G.L. c. 146, § 67, Licenses not renewed on or before the expiration date shall become void, and shall, after one year, be reinstated only by re-examination of the Licensee in accordance with 520 CMR 6.02. This provision does not apply to Licenses which are considered in inactive status.

- (a) License Extension – Military Service. If the licensee is on active duty with the armed forces of the United States, as defined in G.L. c. 4 § 7 clause forty-

third, the license shall remain valid until the licensee is released from active duty and for a period of not less than 90 days following that release. For this section to apply, the licensee shall have received an Honorable Discharge, a General Discharge, or an Under Other than Honorable Conditions (UOTHC) Discharge as noted on their discharge and separation papers.

6.05: Apprentice Licenses

(a) The Department may issue an Apprentice License to currently unlicensed individuals who are registered as apprentices at a Training Facility and submit proof of registration with the Department of Labor Standards pursuant to G.L. c. 146, § 53A. The Apprentice License shall allow for operation of Hoisting Machinery during the Training Period, provided that the holder operates the Hoisting Machinery only while under the direct guidance of a duly licensed person. The Apprentice License shall be kept on the person of the Apprentice Licensee at all times during the operation of Hoisting Machinery and shall be valid for the term of registration with the Department of Labor Standards.

(b) Training Facilities for Apprentice Licensees Only:

- (1) All individuals or organizations seeking approval to operate a Training Facility offering courses limited solely to Apprentice Licensee training courses and not continuing education shall submit a list including the names and Massachusetts Hoisting Machinery License numbers of all Instructors employed by the Training Facility.
- (2) Enforcement Date. In order to provide adequate time for individuals and organizations to implement these regulations, the Department shall begin enforcement of 520 CMR 6.05 on January 1, 2014.

6.06: Exempt Companies; Exemptions for Licensing Requirements, Pursuant to G.L. c. 146, § 53

(a) Pursuant to subsections (e) through (g) of G.L. c. 146, § 53, The following companies may be exempt from the licensing and permitting requirements of 520 CMR 6.02 and 6.03, ~~provided that certain provisions are met:~~

- (1) Public Utility-utility cCompanies;:- ~~Utility companies which have self-propelled truck mounted cranes, derricks and similar Hoisting Machinery which is used for the maintenance and construction of the utility company's own equipment.~~
- (2) Other companies operating only upon public utility company property or equipment ~~Companies Operating Solely on Company Property: A company which~~
operates Hoisting Machinery specifically limited to industrial lift trucks, Fork Lifts, overhead cranes and other Hoisting Machinery specifically authorized by the Department and used exclusively on Company Property.; and
- (3) Other companies operating equipment exclusively on company property. ~~Companies Operating Solely on Utility Property: Any company~~

~~which has equipment such as cranes, derricks and similar Hoisting Machinery used solely on Utility Company Property.~~

~~Subcontractors working for exempt companies are excluded from the provisions for exemption.~~

(b) Pursuant to subsections (e) through (g) of G.L. c. 146, § 53, F~~for any of the exemptions in this section to apply, the following the requirements as applicable set forth below~~ shall be met:

(1) A public utility company that operates self-propelled truck-mounted cranes, derricks and similar hoisting equipment for the maintenance and construction of the company's equipment shall be exempt from the licensing and permitting requirements of 520 CMR 6.02 and 6.03 if the company has: (i) at least 1 supervisory employee who holds a license issued by the Department pursuant to this section and who is designated as the responsible person in charge of the hoisting equipment; and (ii) a company provides In-Service Training program for its employees. This exemption shall only apply if the In-Service Training program for employees has been approved by the Department. The In-service Training program may be audited by the Department. The public utility company shall issue a company license to each trained and certified employee. The license shall contain a picture of the licensee, a list of the specific hoisting equipment that the licensee has been qualified to operate and the signature of the supervisory employee who holds a Department license.

~~(1) The company must have at least 1 supervisory employee on site at all times of operation who holds a License for the equipment being used, issued by the Department under M.G.L. c. 146, Section 53 and is designated as the responsible person in charge of Hoisting Machinery during that period of operation;~~

(2) Any other company that has cranes, derricks and similar hoisting equipment operated only upon public utility company property or equipment shall be exempt from the licensing and permitting requirements of 520 CMR 6.02 and 6.03 if: (i) the company has met the requirements set forth in clauses (i) and (ii) of section 6.06(b)(1); (ii) the company's employees have obtained a company license from an approved In-sService tTraining program of the public utility company for which they are performing work; or (iii) the company's employees are working at the direction of the public utility company and performing work associated with service restoration in connection with a weather or other emergency causing damage to property or equipment. The public utility company shall provide written or electronic notification to the Commissioner prior to the commencement of such work. The company must have an In-Service Training program for employees approved by the Department which may be audited by the Department. The In-Service Training program must meet all of the requirements of 520 CMR 6.07;

- (2)
- (3) Any other company that operates hoisting equipment specifically limited to industrial lift trucks, forklifts, overhead cranes and other hoisting equipment, specifically authorized by the Department and used exclusively on company property shall be exempt from the licensing and permitting requirements of 520 CMR 6.02 and 6.03 if: the company has met the requirements of clauses (i) and (ii) of section 6.06(b)(1) and at least 1 supervisory employee is on site at all times of operation and the supervisory employee holds a license issued by the Department under this section and is designated as the responsible person in charge of hoisting equipment during that period of operation~~Company Licenses must be issued to each trained and certified employee and shall contain a picture of the Licensee, a list of the specific Hoisting Machinery the Licensee has been qualified to operate and the printed name and legible signature of the supervisor who holds a Department License to operate that type of equipment.~~

6.07: In-Service Training Program for Exempt Companies.

This section shall apply to In-Service Training programs for Company Licenses for exempt companies as defined in 520 CMR 6.06. All approvals previously issued by the Department for an In-Service Training program will be rescinded 120 days from the date this section goes into effect. All companies shall reapply for approval and then shall reapply biennially.

- (1) Approval by Department: All individuals or organizations seeking to operate an In-Service Training program shall submit for the Department's approval:
- a. A completed application on a form furnished by the Department;
 - b. Identification of Department-approved curriculum or a copy of company curriculum and training materials, all of which shall incorporate a classroom and a practical component;
 - c. A list including the names and Massachusetts Hoisting Machinery License numbers of all Instructors, a legible photocopy of Instructors' Massachusetts Hoisting Machinery License, and legible photocopies of the Company Licenses; and
 - d. A list of the type of equipment, including model and make, to be used in the company's In-Service Training program.
- (2) The Department shall issue a certificate of approval for In-Service Training programs. Approval shall be contingent upon having a Massachusetts Hoisting License holder in the applicant company's employ.
- (3) All In-Service Training Programs shall be supervised by a Massachusetts Hoisting Licensee of equal or greater grade of Massachusetts License, who shall verify by their printed name and legible signature on the Company License that all those issued Company Licenses have fully participated in the program for which they have been issued a permit.

- a. Method of Verification. Each program shall provide a means to ensure Company License authenticity. Such means shall include, but not be limited to:

1. Embossment of Company License
2. Computer data transfer of program participants
3. Signature verification
4. Numbered Company Licenses
5. Date of issuance
6. Date of expiration.

- (4) In-Service Training Program: In-Service Training programs approved by the Department shall offer a program that, at a minimum, complies with the following requirements for each associated class of Hoisting Machinery licensure:

- a. Class 1 (Hoisting) Licenses:

- i. The minimum number of ~~continuing education~~ hours required for ~~renewal-the issuance~~ of a 1A, 1B, or 1C Company License shall be four classroom hours and two classroom hours for the ~~renewal-issuance~~ of a 1D Company License.
- ii. The minimum topics and texts included as part of the In-Service Training program~~continuing education~~ curriculum for purposes of ~~renewing-issuing~~ a 1A, 1B, 1C, or 1D Company License shall include but may not be limited to:
 1. G.L. c. 146;
 2. 520 CMR 6.00;
 3. 520 CMR 14.00;
 4. OSHA Standards 29 CFR 1926;
 5. OSHA Standards 29 CFR 1910;
 6. ANSI B30;
 7. G.L. c. 82, § 40;
 8. G.L. c. 82A;
 9. G.L. c. 164, § 76D.

- b. Class 2 (Excavation) Licenses:

- i. The minimum number of ~~continuing education~~ hours required for ~~renewal-the issuance~~ of a 2A, 2B, 2C, and 2D Company License shall be four classroom hours.
- ii. The minimum topics and texts included as part of the In-Service Training program~~continuing education~~ curriculum for purposes of ~~renewing-issuing~~ a 2A, 2B, 2C, or 2D Company License shall include but may not be limited to:

1. G.L. c. 146;
2. 520 CMR 6.00;
3. 520 CMR 14.00;
4. OSHA Standards 29 CFR 1926
5. G.L. c. 82, § 40;
6. G.L. c. 82A;
7. G.L. c. 164, § 76D;
8. 220 CMR 99.00 (Dig Safe).

c. ~~Class 3 (Electric and Pneumatic)~~ Class 3 (Tower and Electric)

Licenses:

- i. The minimum number of ~~continuing education~~ hours required for ~~renewal-the issuance~~ of a 3A Company License shall be four classroom hours.
- ii. The minimum topics and texts included as part of the In-Service Training program~~continuing education~~ curriculum for purposes of ~~renewing-issuing~~ a 3A Company License shall include but may not be limited to:

1. G.L. c. 146;
2. 520 CMR 6.00;
3. OSHA Standard 29 CFR 1926;
4. OSHA Standard 29 CFR 1910;
5. ANSI B30.

d. Class 4 (Specialty) Licenses:

~~i. The minimum number of continuing education hours required for renewal of a 4A License shall be four (4) classroom hours.~~

~~ii.~~ i. The minimum number of ~~continuing education~~ hours required for ~~renewal-the issuance~~ of a 4B, 4C, 4D, 4E, 4F, or 4G Company License shall be two hours.

~~iii.~~ ii. The minimum topics and texts included as part of the In-Service Training program~~continuing education~~ curriculum for purposes of ~~renewing-issuing~~ a ~~4A~~, 4B, 4C, 4D, 4E, 4F, or 4G Company License shall include but may not be limited to:

1. G.L. c. 146;
2. 520 CMR 6.00;
3. 520 CMR 14.00
4. OSHA Standards 29 CFR 1926;
5. OSHA Standards 29 CFR 1910;
6. ANSI B30;
7. G.L. c. 82, § 40
8. G.L. c. 82A;

- 9. G.L. c. 164, § 76D;
- 10. 220 CMR 99.00 (Dig Safe).

(5) Requirements for Company Licenses

- a. Facilities shall issue a Company License to those who satisfactorily complete an In-Service Training program and pass an examination. Company Licenses shall contain the following information:
 - 1. Name of company Licensee;
 - 2. Address of company Licensee;
 - 3. Name and address of the institution or organization providing the In-Service Training program;
 - 5. The printed name and legible signature of a Massachusetts Hoisting Licensee verifying participant has completed the In-Service Training program;
 - 6. The License number of the Licensee endorsing the Company License.
 - 7. A photograph of the company Licensee.
- (6) Exempt companies that are approved to conduct In-Service Training programs shall keep uniform records of company Licensees and have those records readily accessible to Inspectors of the Department upon request for a period of three years. They shall be responsible for the security and retention of all uniform Company Licenses and the proper issuance thereof. Instructors shall verify by signature that participants in In-Service Training programs have satisfactorily completed the necessary training.
- (7) Falsification of Documents. The falsification of attendance records or fraudulent issuance of Company Licenses by any Massachusetts Hoisting Licensee shall be grounds for initiating formal proceedings under G.L. c. 146, § 59 and c. 30A and may also be grounds for the immediate revocation or suspension of the approval to issue Company Licenses.
- (8) Approval for any In-Service Training program shall be valid for two years from the date of issuance.

6.08: Operating Procedures for Hoisting Machinery

- (1) All Hoisting Machinery shall be operated in accordance with the manufacturer's specifications. In the event the manufacturer does not exist, a Massachusetts registered professional engineer shall review and approve, in writing, the actions and reasons for said specifications. The manufacturer or the professional engineer shall demonstrate to the Department upon request, from standards or from the maintenance manual, that the specifications will not compromise the integrity of the Hoisting Machinery and public safety. Prior to operation, the operator shall perform the following:

- (a) Maintenance. Maintenance, repair and refueling shall be done when the machine is inoperable and secure.
- (b) Required Inspections. Visual inspection shall be made daily of wire ropes, bearings, gears, friction clutches, brakes, chain drives and other parts subject to wear on all Hoisting Machinery to ensure against development of unsafe conditions. A daily log sheet in accordance with 29 CFR 1926 and 29 CFR 1910 inspectional methods shall be available to the Department during the useful life of the machine.
- (c) Additional Requirements.
- (1) A written and signed record of all inspections shall be kept with the Hoisting Machinery and made available at the site for examination by the Department that conforms with the requirements of 29 CFR 1926.1412.
 - (2) Prior to starting any Hoisting Machinery, the operator shall make a complete walk-around of the equipment to verify people are clear of the equipment, and that it is in a safe condition.
 - (3) The operator shall not engage in any practice that will divert their attention while engaged in operating the Hoisting Machinery.
 - (4) At no time shall the operator of Hoisting Machinery operate or be required to operate the Hoisting Machinery beyond its rated capacity without the manufacturer's written approval which shall include a new chart showing the new limitations. Other than assembly/disassembly, the use of the load moment indicator override key or the entering of false crane set-up criteria to increase rated capacity is strictly forbidden.
 - (5) The operator shall operate Hoisting Machinery only when fully attentive. The operator shall not operate the equipment erratically and/or under the influence of alcohol or drugs. When an operator is physically or mentally unfit, the operator shall not operate Hoisting Machinery.
 - (6) Prior to operating Hoisting Machinery with a rotating superstructure, safety procedures such as but not limited to: the erection of barricades, warning lines or other procedures shall be used to prevent entry into the swinging superstructure's radius.

- (7) All controls shall be tested by the operator prior to operating the Hoisting Machinery. If any controls are found to be functioning improperly, repairs shall be made in accordance with manufacturer's requirements prior to the operation of the Hoisting Machinery.
- (8) Operators shall respond only to signals given by a Signal Person except in emergency situations.
- (9) If a warning signal is furnished by the operator, it shall be sounded each time before traveling, and intermittently during travel particularly when approaching people.
- (10) The operator shall be responsible for those operations under their direct control. When there is any doubt as to the safety of any action, the operator shall have the authority to stop and refuse to handle loads until safety has been assured.
- (11) The operator is responsible for securing any unattended Hoisting Machinery in accordance with applicable manufacturer's specifications.
- (12) If power fails during operation of any Hoisting Machinery, the operator shall secure the machine prior to leaving the equipment. When practical, suspended loads shall be landed under brake control.
- (13) At no time shall persons work under a boom or a load suspended thereon except in the case of tower cranes.
- (14) All manufacturer's load charts and operation manuals shall be kept in the Hoisting Machinery.
- (15) All applicable power line clearances shall be maintained.
- (16) Hoisting Machinery equipped with outriggers/stabilizers shall be used, with adequate blocking, according to manufacturer's specifications or surface conditions.
- (17) Dig Safe. Prior to any excavation, Dig Safe and other utilities not covered by Dig Safe shall be notified. The operator shall obtain a Dig Safe permit number, start date, and time.
- (18) No person shall operate Hoisting Machinery without a valid driver's License.

(19) All Manufacturer Approved Attachment records shall be made readily available at the request of the Inspector.

6.09: Special Requirements for Cranes, Derricks, Pile Drivers, Excavating Machines, Fork Lifts, and Hoists

The operator shall not operate the Hoisting Machinery unless the following requirements are met:

Special Requirements for Cranes

- (1) Loading. Material moving, handling or Hoisting Machinery shall be loaded in accordance with the manufacturer's specifications. Manufacturers' load-rating plates or applicable load charts shall be kept in the cab of the crane in clear view of the operator. Rating plates or load charts for boom cranes shall clearly indicate the safe load for maximum and minimum positions of the boom and for at least two intermediate positions. The procedures applicable to the operation of the equipment, including instructions, recommended operating speeds, special hazard warnings, and Operator's Manual, shall be readily available in the cab at all times for use by the operator. Where rated capacities are available in the cab only in electronic form: In the event of a failure which makes the rated capacities inaccessible, the operator shall immediately cease operations or follow safe shut-down procedures until the rated capacities (in electronic or other form) are available.
- (2) Boom Stops. Devices to prevent the boom from falling over backward shall be provided on cranes. Cable boom stops by themselves shall not be considered as adequate for this purpose.
- (3) Speed Controls and Stops. Hoisting Machinery operating on rails, tracks or trolleys shall be equipped with speed controls and shall have positive stops or limiting devices to prevent overrunning safe limits.
- (4) Equipment Modifications. Any Modification made to Hoisting Machinery shall maintain at least the same factor of safety as the original designed equipment. A record of the differences between the unmodified machinery and the modified machinery shall be maintained by the owner of the machinery and furnished to the Department upon request. All Modifications shall be done with the manufacturer's written approval. If the manufacturer's written approval cannot be obtained, the owner shall have a professional engineer create and certify a procedure which shall be added to the permanent record of the equipment.
- (5) Protection of Operator. The operator of material handling and moving equipment when exposed to overhead hazards or the elements shall be protected with a cab or equivalent covering affording adequate protection

but which shall not cut off his vision of the load movements. All windows in cabs shall be of safety glass, or equivalent, that introduces no visible distortion that will interfere with the safe operation of the machine.

- (6) Required Presence. Operators of material moving, handling or Hoisting Machinery shall remain at the controls while the load is suspended, except in cases where loss of power occurs in which case operators shall act pursuant to 520 CMR 6.08(1)(c)(12). The operator of the machine shall not leave the machine while the master clutch is engaged.
- (7) Erection or Dismantling. Crane erection or dismantling shall be performed in accordance with the manufacturer's specifications and 29 CFR 1926, under the supervision of his representative or other persons experienced in erection and/or dismantling of this type of equipment. The attachments used with cranes shall not exceed the capacity, rating or scope recommended by the manufacturer.
- (8) Factor of Safety. All parts of the crane and supports shall be designed, constructed and maintained to withstand all stresses resulting from intended use with a safety factor of not less than 2.0.
- (9) Capacity Schedule/Load Charts. Each crane model shall contain a schedule of load capacities in the operator's station at all times.
- (10) Tower Crane Foundations. Tower crane foundations shall be designed by the manufacturer or a registered professional engineer.
- (11) Wind Speed. Wind speed shall not exceed manufacturer's recommendations for continued work operations.
- (12) Tower Crane Safety Devices. All required safety devices for tower cranes shall be installed and properly functioning.
- (13) Tower Crane Operational Aids. All required operational aids for tower cranes shall be installed and functioning properly or approved temporary alternative measures in place.

Special Requirements for Derricks

Required Inspection. Guys, cable clamps and other rigging shall be visually checked by the operator at the beginning of each work day and before making any lifts that are near the capacity of the rig or as otherwise required by the manufacturer.

Frequent checking by a duly licensed person of lead cables and mast foot blocks shall be performed to ensure that cables are not crossed or fouled. Lead line

blocks shall be checked frequently to ensure that they are properly secured. Leads shall be so arranged as to minimize tripping hazards.

Special Requirements for Pile Drivers

- (1) Inspection. All pile driving equipment shall be inspected daily before the start of work by a licensed operator of the equipment and all unsafe conditions and defective parts shall be corrected before beginning operations.
- (2) Driver Not in Use. When the pile driver is not in use, the hammer shall be chocked or blocked in the leads or lowered to the ground.
- (3) Temporary Interruption. The operator of every pile driver shall remain at his post when the driving is interrupted until the hammer has been chocked or blocked in the leads, or has been lowered and is resting on a driven pile or on the ground.
- (4) Jib Attachment. Pile drivers shall not be used with a jib attached.
- (5) Stop Blocks. Stop blocks shall be provided for the leads to prevent the hammer from being raised against the head block.

Special Requirements for Fork Lifts

Only a duly licensed operator or Apprentice Licensee under the direct supervision of a duly licensed operator shall operate a Fork Lift. No Fork Lift shall be loaded beyond its capacity rating.

- (1) Brakes. Every power operated Fork Lift shall be equipped with adequate wheel brakes.
- (2) Operation. No Fork Lift shall be operated at unsafe speeds. No person except a duly licensed operator or Apprentice Licensee under the direct supervision of a duly licensed operator shall be permitted on a Fork Lift while it is in operation.

Special Requirements for Excavating Machines, including backhoes and frontend loaders

- (1) Dig Safe. Prior to any excavation, Dig Safe and other utilities not covered by Dig Safe shall be notified. The operator shall obtain a Dig Safe permit number, start date, and time.
- (2) Protection of Operator. Where the operator of an excavating machine may be exposed to the elements or overhead hazards, a suitable equipped cab for protection against such conditions shall be provided.

- (3) Operation. Excavating machines shall be operated by a Licensee, Temporary Permit Holder, or an Apprentice Licensee under the direct supervision of a duly licensed operator. SAE hand signals shall be used with excavating machinery. No person except the operating crew or Apprentice Licensee operating under the direct supervision of a duly licensed operator shall be permitted on an excavating machine while it is in operation. No person other than the pitman and excavating crew shall be permitted to stand within the full working radius of an excavator or backhoe while the shovel or backhoe is in operation. Excavating machinery shall not be allowed to straddle an open trench.

Special Requirements for Crane or Derrick Suspended Personnel Platforms

The hoisting, lowering, swinging, or traveling while anyone is on the load or hook is prohibited except when the use of a conventional means of access to any elevated worksite would be impossible or more hazardous. Operations shall comply with the provisions of 29 CFR 1926.550(g)(3), (4), (5), (6), (7), and (8).

Crane and Derrick Operations. Where conventional means (e.g., scaffolds, ladders) of access would not be considered safe, personnel hoisting operations, which comply with the terms of this regulation, may be authorized.

Cranes and derricks used to hoist personnel shall be placed on a firm foundation and the crane or derrick shall be uniformly level within 1 percent of level grade.

The crane operator shall always be at the controls when the crane engine is running and the personnel platform is occupied. The crane operator also shall have full control over the movement of the personnel platform. Any movement of the personnel platform shall be performed slowly and cautiously without any sudden jerking of the crane, derrick, or the platform. Wire rope used for personnel lifting shall have a minimum safety factor of seven. Rotation resistant rope shall have a minimum safety factor of ten.

When the occupied personnel platform is in a stationary position, all brakes and locking devices on the crane or derrick shall be set.

The combined weight of the loaded personnel platform and its rigging shall not exceed 50% of the rated capacity of the crane or derrick for the radius and configuration of the crane or derrick.

Instruments and Components. Cranes and derricks with variable angle booms shall have a boom angle indicator that is visible to the operator. Cranes with telescoping booms shall be equipped with a device to clearly indicate the boom's extended length, or an accurate determination of the load radius to be used during the lift shall be made prior to hoisting personnel. Cranes and derricks also shall be

equipped with (1) an anti-two-blocking device that prevents contact between the load block and overhaul ball and the boom tip, or (2) a two-block damage-prevention feature that deactivates the hoisting action before damage occurs.

Personnel Platforms. Platforms used for lifting personnel shall be designed with a minimum safety factor of five and designed by a professional engineer or a qualified person competent in structural design. The suspension system shall be designed to minimize tipping due to personnel movement on the platform.

Each personnel platform shall be provided with a standard guardrail system that is enclosed from the toeboard to the mid-rail to keep tools, materials, and equipment from falling on employees below. The platform also shall have an inside grab rail, adequate headroom for employees, and a plate or other permanent marking that clearly indicates the platform's weight and rated load capacity or maximum intended load. When personnel are exposed to falling objects, overhead protection on the platform and the use of hard hats are required.

An access gate, if provided, shall not swing outward during hoisting and shall have a restraining device to prevent accidental opening.

All rough edges on the platform shall be ground smooth to prevent injuries to employees.

All welding on the personnel platform and its components shall be performed by a Qualified Welder who is familiar with weld grades, types, and materials specified in the platform design.

Loading. The personnel platform shall not be loaded in excess of its rated load capacity or its minimum intended load. Only personnel instructed in the requirements of the regulation and the task to be performed—along with their tools, equipment, and materials needed for the job—are allowed on the platform. Materials and tools shall be secured and evenly distributed to balance the load while the platform is in motion.

Rigging. When a wire rope bridle is used to connect the platform to the load line, the bridle legs shall be connected to a master link or shackle so that the load is evenly positioned among the bridle legs. Bridles and associated rigging for attaching the personnel platform to the hoist line shall not be used for any other purpose.

Attachment assemblies such as hooks shall be closed and locked to eliminate the hook throat opening; an alloy anchor-type shackle with a bolt, nut, and retaining pin may be used as an alternative. "Mousing" (wrapping wire around a hook to cover the hook opening) is not permitted.

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Inspecting and Testing. A trial lift of the unoccupied personnel platform shall be made before any employees are allowed to be hoisted. During the trial lift, the personnel platform shall be loaded at least to its anticipated lift weight. The lift shall start at ground level or at the location where employees will enter the platform and proceed to each location where the personnel platform is to be hoisted and positioned. The trial lift shall be performed immediately prior to placing personnel on the platform.

The crane or derrick operator shall check all systems, controls, and safety devices to ensure the following:

- (1) They are functioning properly.
- (2) There are no interferences.
- (3) All boom or hoisting configurations necessary to reach work locations will allow the operator to remain within the 50% load limit of the hoist's rated capacity.

If a crane or derrick is moved to a new location or returned to a previously used one, the trial lift shall be repeated before hoisting personnel.

After the trial lift, the personnel platform shall be hoisted a few inches and inspected to ensure that it remains secured and is properly balanced.

Before employees are hoisted, a check shall be made to ensure the following:

- (1) Hoist ropes are free of kinks.
- (2) Multiple part lines are not twisted around each other.
- (3) The primary attachment is centered over the platform.
- (4) There is no slack in the wire rope.
- (5) All ropes are properly seated on drums and in sheaves.

Immediately after the trial lift, a thorough visual inspection of the crane or derrick, the personnel platform, and the crane or derrick base support or ground shall be conducted by a Competent Person to determine if the lift test exposed any defects or produced any adverse effects on any component or structure. Any defects found during inspections shall be corrected before hoisting personnel.

When initially brought to the job site and after any repair or modification, and prior to hoisting personnel, the platform and rigging shall be proof tested to 125% of the platform's rated capacity. This is achieved by holding the loaded platform-with the load evenly distributed-in a suspended position for five minutes. A Competent Person shall inspect the platform and rigging for defects. If any problems are detected, they shall be corrected and another proof test shall be conducted. Personnel hoisting shall not be conducted until the proof testing requirements are satisfied.

Pre-Lift Meeting. The employer shall hold a meeting with all employees involved in personnel hoisting operations (crane or derrick operator, signal person(s), employees to be lifted, and the person responsible for the hoisting operation) to review the provisions of 29 CFR 1926.550(g)(3), (4), (5), (6), (7), (8), 520 CMR 6.09, and the procedures to be followed before any lift operations are performed.

This meeting shall be held before the trial lift at each new work site and shall be repeated for any employees newly assigned to the operation.

Safe Work Practices. Employees shall follow these safe work practices:

- (1) Use tag lines unless their use creates an unsafe condition.
- (2) Keep all body parts inside the platform during raising, lowering, and positioning.
- (3) Make sure a platform is secured to the structure where work is to be performed before entering or exiting it, unless such securing would create an unsafe condition.
- (4) Wear a body belt or body harness system with a lanyard. The lanyard shall be attached to the lower load block or overhaul ball or to a structural member within the personnel platform. If the hoisting operation is performed over water, the requirements 29 CFR 1926.106—Working over or near water—shall apply.
- (5) Stay in view of, or in direct communication with, the operator or signal person.

Crane and derrick operators shall follow these safe work practices:

- (1) Never leave crane or derrick controls when the engine is running or when the platform is occupied.
- (2) Stop all hoisting operations if there are indications of any dangerous weather conditions or other impending danger.
- (3) Do not make any lifts on another load line of a crane or derrick that is being used to hoist personnel.

Movement of Cranes. Personnel hoisting is prohibited while the crane is traveling except when the employer demonstrates that this is the least hazardous way to accomplish the task or when portal, tower, or locomotive cranes are used.

When cranes are moving while hoisting personnel, the following rules apply:

- (1) Travel shall be restricted to a fixed track or runway.
- (2) Travel also shall be limited to the radius of the boom during the lift.
- (3) The boom shall be parallel to the direction of travel.
- (4) There shall be a complete trial run before employees occupy the platform.

- (5) If the crane has rubber tires, the condition and air pressure of the tires shall be checked and the chart capacity for lifts shall be applied to remain under the 50% limit of the hoist's rated capacity. Outriggers may be partially retracted as necessary for travel.

6.10: Classification of Licenses; Qualifications

(1) CLASS 1 - HOISTING

(a) 1A Prerequisites:

1. The applicant shall meet the prerequisites as listed in 520 CMR 6.02.
2. The applicant shall display knowledge of the crane operator ASME hand signals.
3. The applicant shall be able to read and comprehend load charts and manufacturer's specifications.

(b) 1A Operators may operate:

1. All friction clutch machines and all derricks (including guy derricks, stiff legs, Chicago booms, gin poles);
2. Lattice boom machinery ~~and may also require a 3A License in accordance with 6.10 (3);~~
- ~~3. All wire rope machines;~~
- ~~43.~~ All equipment listed in classes 1B, 1C, and 1D.

(c) 1B Prerequisites:

1. The applicant shall meet the prerequisites as listed in 520 CMR 6.02. The applicant shall display knowledge of the crane operator hand signals. The applicant shall be able to read and comprehend load charts and manufacturers specifications.

(d) 1B Operators may operate:

1. All equipment having telescoping boom and wire rope;
2. All equipment listed in class 1C and class 1D.

(e) 1C Prerequisites:

1. The applicant shall meet the prerequisites as listed in 520 CMR 6.02.
2. The applicant shall be able to read and comprehend load charts and manufacturer's specifications.

(f) 1C Operators may operate:

1. Equipment with hydraulic telescoping booms and any other hydraulic equipment designed for the purpose of hoisting, excluding those with wire rope hoist lines; all equipment listed in class 1D.

(g) 1D Prerequisites: The applicant shall meet the prerequisites as listed in

520 CMR 6.02.

(h) 1D Operators may operate:

1. General industrial warehouse Fork Lift equipment primarily used in indoor facilities.

(2) CLASS 2 – EXCAVATING

(a) 2A Prerequisites:

1. The applicant shall meet the prerequisites as listed in 520 CMR 6.02.
2. Knowledge of hand signals for controlling crawler/excavator operations

(b) 2A Operators may operate:

1. All crawler and rubber tired excavators and backhoes with Manufacturer Approved Attachments;
2. Equipment listed in classes 2B, 2C and 2D.

(c) 2B Prerequisites:

1. The applicant shall meet the prerequisites as listed in 520 CMR 6.02.

(d) 2B Operators may operate:

1. Combination loader/backhoe machines with Manufacturer Approved Attachments;
2. Equipment listed in Class 2C and class 2D.

(e) 2C Prerequisites:

1. The applicant shall meet the prerequisites as listed in 520 CMR 6.02.

(f) 2C Operators may operate:

1. Front end loaders with Manufacturer Approved Attachments;
2. Equipment listed in Class 2D

(g) 2D Prerequisites:

1. The applicant shall meet the prerequisites as listed in 520 CMR 6.02.

(h) 2D Operators may operate:

1. Compact Hoisting Machinery with a gross vehicle weight not exceeding 10,000 pounds, excluding Class 1, Class 3, and Class 4 Hoisting Machinery as listed in 520 CMR 6.10 with Manufacturer Approved Attachments.

(3) CLASS 3 – ~~TOWER~~ ELECTRIC AND AIRPNEUMATIC.

(a) 3A Operators Prerequisites:

1. The applicant shall meet the prerequisites as listed in 520 CMR 6.02.
2. The applicant shall be able to read and comprehend load charts and manufacturer's specifications.

(b) ~~3A~~ Operators may operate:

1. ~~Tower Derrieks and Self-erecting Tower Cranes~~ Overhead gantry cranes;
2. Marine lifts;
3.
2. ~~Persons holding a 1A3A may also operate a tower/derriek crane.~~ Jib cranes with no load charts.

(4) CLASS 4 - SPECIALTY. Operators may operate the equipment listed in 4(a)-(g) below:

~~(a) 4A: 4B-4G~~

- (~~ba~~) 4B: Drill Rigs
- (~~eb~~) 4C: Pipeline Side booms
- (~~dc~~) 4D: Concrete Pumps
- (~~ed~~) 4E: Catch Basin Cleaner
- (~~fe~~) 4F: Sign Hanging Equipment
- (~~gf~~) 4G: Specialty Lawn Side Boom Mower

(5) MUNICIPAL - LIMITED. Operators who are employed by a municipal public works department may operate, solely within the scope of their municipal employment, under a single license equipment under the following restrictions:

- (a) 1C;
- (b) 2B; and
- (c) 4G.

6.11: Operation of Hoisting Machinery; Accident Reporting

- (1) Operators of Hoisting Machinery shall cease operating if ordered by the Department to do so. Conditions which shall warrant immediate cessation of operation may include but not limited to:
 - (a) Serious Injury; or
 - (b) Any condition that is necessary for the preservation of the public health or safety as determined by the Inspector.
- (2) Operators of Hoisting Machinery shall immediately surrender their Hoisting License or Temporary Permit if ordered by the Department to do so pursuant to G.L. c. 146, § 53.

- (3) Any person found operating Hoisting Machinery without a License, Temporary Permit, Apprentice License or proper classification of Hoisting License according to 520 CMR 6.00 shall immediately cease operating. Said person shall make his identity known to the Department with a valid government-issued form of photographic identification.

(4) Notification/Investigation.

- (a) Notification. Any Incident which results in Serious Injury, Property Damage, or any condition that is necessary for the preservation of the public health or safety at a site where Hoisting Machinery is operational shall be reported by the Licensee operating the Hoisting Machinery or owner or owner's representative to the Department through the Department Incident Hotline at (508) 820-1444 within one hour from the time that the Incident occurred or was discovered. The Hoisting Machinery shall not be moved or dismantled from the site of the Incident until the Department has investigated the Incident and approval is granted by an Inspector. The only exception to this requirement is for preservation of life and property, the removal of injured persons or bodies or to permit the flow of emergency vehicles. The Hoisting Machinery and area surrounding the Hoisting Machinery shall not be disturbed, cleaned, or altered in any way that will impede the investigation. The Department shall investigate the Incident pursuant to G.L. c. 146, §§ 53, 54A and 55.

- (b) Investigation. In the event that an Incident occurs in accordance to the provisions of 6.11(4)(a), the Hoisting Machinery shall be immediately shut down and secured by the operator until an Inspector has completed an investigation. No person shall move or alter the Incident scene or the Hoisting Machinery, except to remove the victim(s), until the Inspector has completed the investigation and determined that the Hoisting Machinery is safe. Incidents shall be reported within one hour to the Department through the Department Incident Hotline at (508) 820-1444 and a written report shall be submitted to the Department within 48 hours. The Hoisting Machinery, operator, and owner of the Hoisting Machinery shall be accessible to the Department.

6.12: Suspension, Revocation, and Appeals of Licensing, Certification, and Temporary Permitting

- (1) Where the Commissioner, Chief, or any Inspector determines that circumstances indicate the denial or immediate suspension or revocation of a License or Temporary Permit or Company certificate of approval to operate Hoisting Machinery is necessary for the preservation of the public health or safety, they may deny, revoke or suspend depending on the severity of the offense. Any License covered under 520 CMR 6.00 may be revoked or suspended for the following reasons:

- (a) False or misleading information on application for examination or License renewal.
 - (b) Operating Hoisting Machinery under the influence of alcohol or drugs.
 - (c) Failure to pay excise tax or other taxes.
 - (d) Failure to report Accidents as required by the Department of Public Safety.
 - (e) Failure to report a Serious Injury as required by the Department of Public Safety.
 - (f) Operating in an unsafe manner.
 - (g) Failure to comply with any provision of this regulation.
 - (h) Failure to comply with 520 CMR 14.00.
 - (i) Failure to comply with G.L. c. 146, §§ 53 to 56.
 - (j) The fraudulent or otherwise improper issuance of Temporary Permits.
 - (k) The fraudulent or otherwise improper issuance of any Company License.
- (2) A Licensee aggrieved by the action taken by the Commissioner, Chief or an Inspector, pursuant to G.L. c. 146, § 53 in suspending or revoking their License or Temporary Permit to operate Hoisting Machinery may, within one week, appeal from such decision to the Chief who shall appoint three Inspectors of the Department, or himself and two Inspectors, to act together as a board of appeal. The decision of a majority of the members of the board of appeal shall be final and may be appealed in accordance with G.L. c. 30A. All hearings will be held in accordance with G.L. c. 30A and 801 CMR 1.02.

6.13: Variance Procedure

Variance.

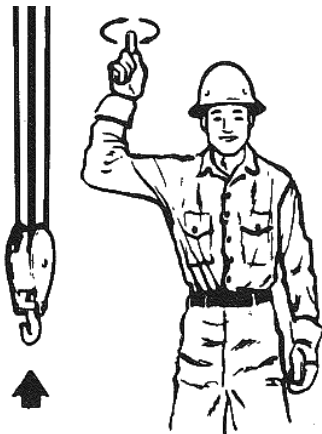
- (a) Any person who believes that full compliance with 520 CMR 6.00 is overly burdensome may apply to the Department for a variance from 520 CMR 6.00. The burden is on the applicant to demonstrate in writing to the Department that the granting of the variance would not compromise public safety or otherwise undermine the purpose of 520 CMR 6.00. Applications for a variance shall be made on a form provided by the Department for this purpose and shall contain such information as is required by the Department, and shall be signed by the applicant.
- (b) Upon receipt of an application for a variance, the Commissioner, or his designee may:
 - 1. Grant the application with whatever conditions are deemed appropriate; or
 - 2. Deny the application without a hearing;

- (c) Any person aggrieved by this decision may file a request for an adjudicatory hearing with the Department within 30 days of receipt of the decision. All adjudicatory hearings shall be held in accordance with the provisions of G.L. c. 30A and 801 CMR 1.02. Any person aggrieved by a decision made after an adjudicatory hearing may appeal to the Superior Court in accordance with G.L. c. 30A, § 14.

REGULATORY AUTHORITY
520 CMR 6.00: G.L. c. 146, ~~§§~~ 53 through 54A-

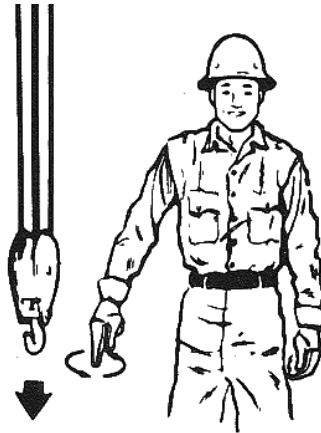
Appendix A
CRANE HAND SIGNALS

1. ANSI/ASME B30.5-2011 Mobile and Locomotive Cranes



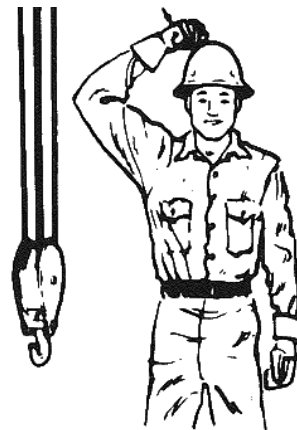
Hoist

With forearm vertical, forefinger pointing up, move hand in small horizontal circle.



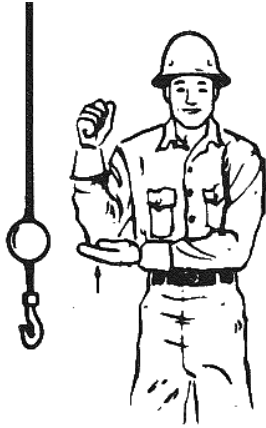
Lower

With arm extended downward, forefinger pointing down, move hand in small horizontal circle.



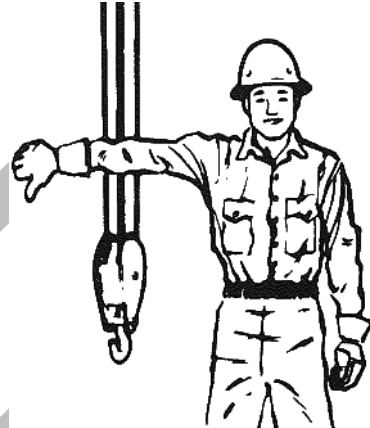
Use Main Hoist

Tap fist on head; then use regular signals.



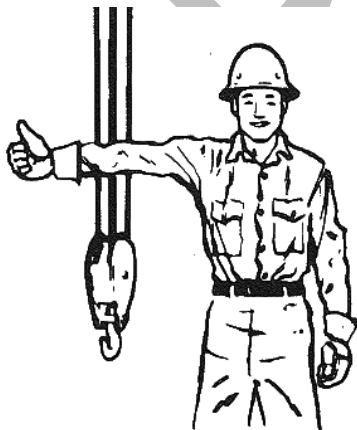
Raise Boom

Arm extended, fingers closed, thumb pointing upward.



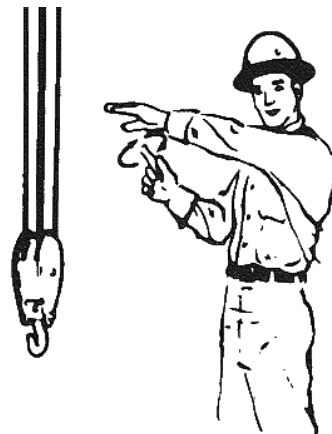
Use Whipline (Auxiliary Hoist)

Tap elbow with one hand; then use regular signals.



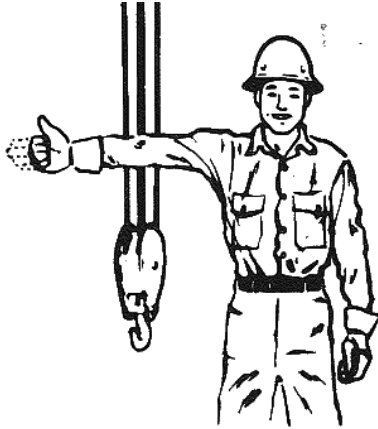
Lower Boom

Arm extended, fingers closed, thumb pointing downward.

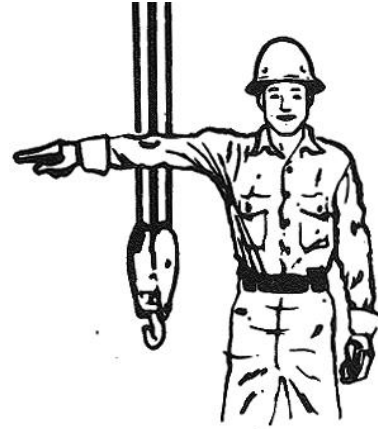


Move Slowly

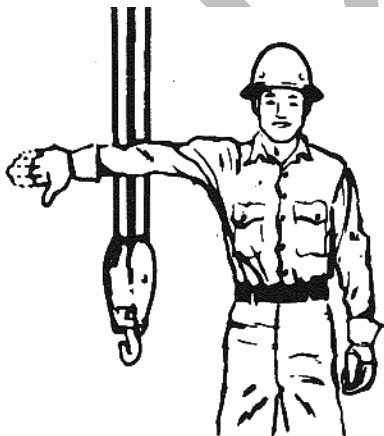
Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal. (Hoist slowly shown as example.)



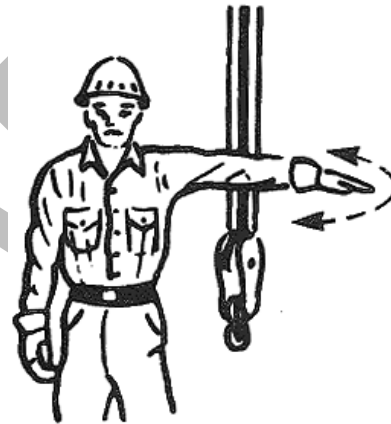
Raise the Boom and Lower the Load
With arm extended, thumb pointing up, flex fingers in and out as long as the load movement is desired.



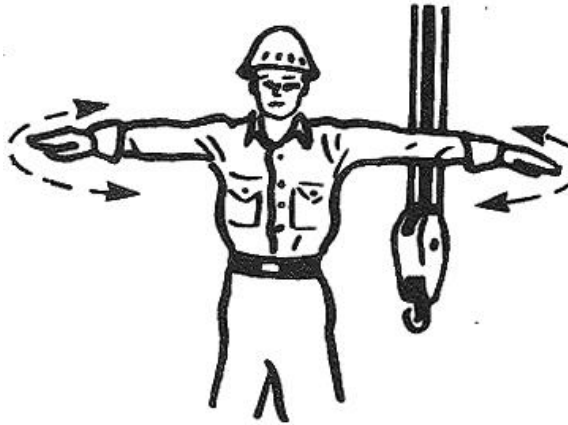
Swing
Arm extended, point with finger in direction of swing of boom.



Lower the Boom and Raise the Load
With arm extended, thumb pointing down, flex fingers in and out as long as load movement is desired.

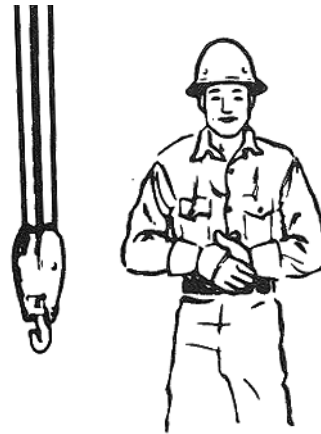


Stop
Arm extended, palm down, move arm back and forth horizontally.



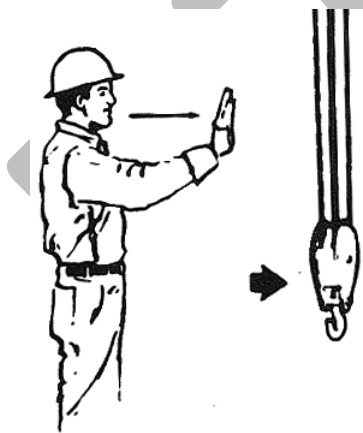
Emergency Stop

Both arms extended, palms down, move arms back and forth horizontally.



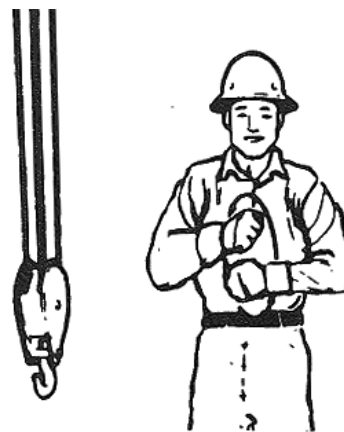
Dog Everything

Clasp hands in front of body.



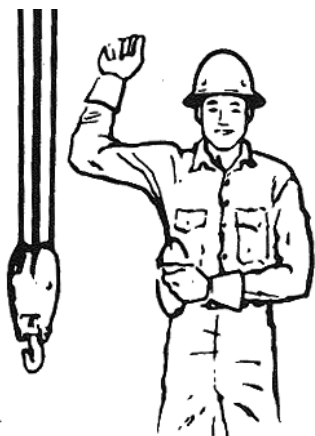
Travel

Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel.



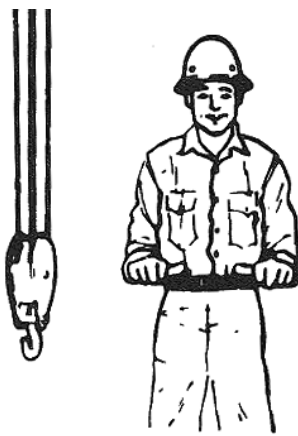
Travel (Both Tracks)

Use both fists in front of body, making a circular motion about each other, indicating direction of travel, forward or backward. (For land cranes only.)



Travel (One Track)

Lock the track on side indicated by raised fist. Travel opposite track in direction indicated by circular motion of other fist, rotated vertically in front of body. (For land cranes only.)



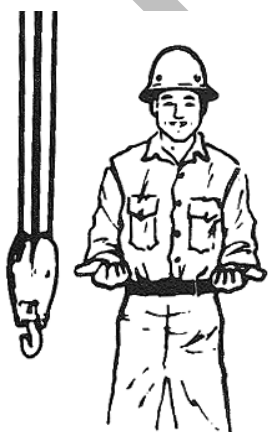
Retract Boom (Telescoping Booms)

Both fists in front of body with thumbs pointing toward each other.



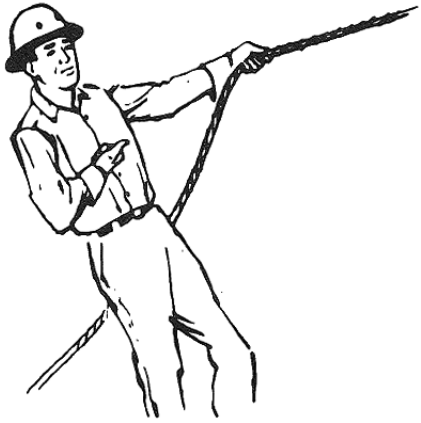
Extend Boom (Telescoping Boom)

One Hand Signal. One fist in front of chest with thumb tapping chest.



Extend Boom (Telescoping Booms)

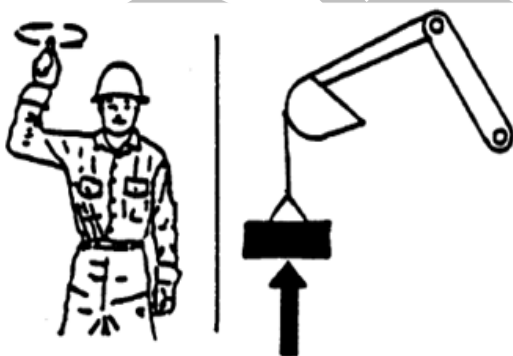
Both fists in front of body with thumbs pointing outward.



Retract Boom (Telescoping Boom)
One Hand Signal. One fist in front of chest, thumb pointing outward and heel of fist tapping chest.

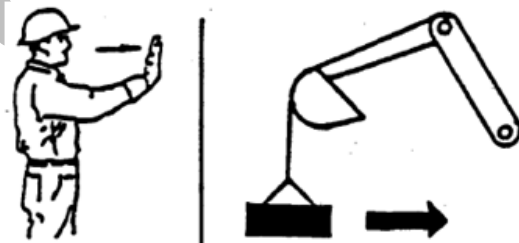
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Appendix B
EXCAVATOR AND BACKHOE HAND SIGNALS
(2) SAE Excavator and Backhoe Hand Signals



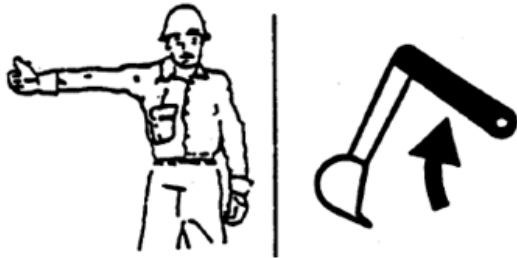
Raise Load Vertically

With either forearm vertical, forefinger pointing up, move hand in small horizontal circle.



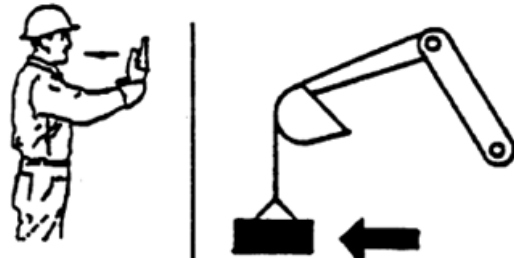
Move Load In Horizontally

With either arm extended, hand raised and open toward direction of movement, move hand in direction of required movement.



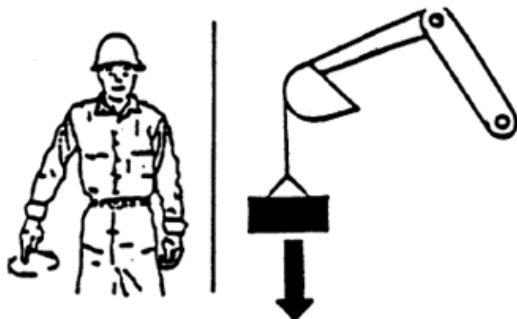
Raise Boom

With either arm extended horizontally, fingers closed, point thumb upward.



Move Load Out Horizontally

With either arm extended, hand raised and open toward direction of movement, move hand in direction of required movement.



Lower Load Vertically

With either arm extended downward, forefinger pointing down, move hand in small horizontal circle.



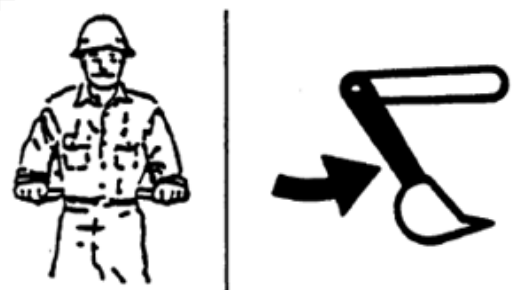
Lower Boom

With either arm extended horizontally, fingers closed, point thumb downward.



Swing

With either arm extended horizontally, point with forefinger to direction of swing rotation.

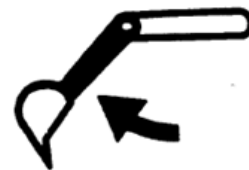


Arm/Dipperstick Inward

With both hands clenched, point thumbs inward.



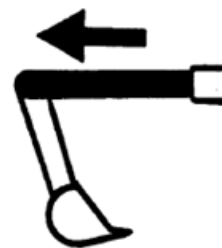
Retract Telescopic Boom
With both hands clenched, point thumbs inward.



Arm/Dipperstick Outward
With both hands clenched, point thumbs outward.



Swing
With either arm extended horizontally, point with forefinger to direction of swing rotation.



Extend Telescopic Boom
With both hands clenched, point thumbs outward.



Close Bucket

Hold one hand closed and stationary. Rotate other hand in small vertical circle with forefinger pointing horizontally at closed hand.



Turn

Raise forearm with closed fist indicating inside of turn. Move other fist in vertical circle indicating direction of track or wheel rotation.

Hold one hand open and stationary. Rotate other hand in small vertical circle with forefinger pointing horizontally at open hand.



Turn

Raise forearm with closed fist indicating inside of turn. Move other fist in vertical circle indicating direction of track or wheel rotation.



Counter Rotate

Place hand on head indicating side or reverse track or wheel rotation. Move other hand in vertical circle indicating forward rotation of other track or wheel.



Counter Rotate

Place hand on head indicating side or reverse track or wheel rotation. Move other hand in vertical circle indicating forward rotation of other track or wheel.



Open Bucket



Travel

Move fists in vertical circle about each other in direction of track or wheel rotation.



This Far to Go
With hands raised and open inward, move hands laterally, indicating distance to go.



Move Slowly
Place one hand motionless in front of hand giving motion signal. (Raise load slowly is shown)



Stop
With either arm extended laterally, hand open downward, move arm back and forth.



Emergency Stop

With both arms extended laterally, hands open downward, wave arms back and forth.



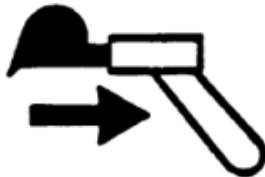
Stop Engine

Draw thumb or forefinger across throat.



Retract Telescopic Arm/Dipperstick

With either arm outstretched horizontally in front of body, close fingers and point thumb in direction of required movement.



Extend Telescopic Arm/Dipperstick

With either arm outstretched horizontally in front of body, close fingers and point thumb in direction of required movement.

