OSHA INSTRUCTION

U.S. DEPARTMENT OF LABOR — Occupational Safety and Health Administration

DIRECTIVE NUMBER: CPL 02-00-139	EFFECTIVE DATE: 5/23/06

SUBJECT: Longshoring and Marine Terminals "Tool Shed" Directive

ABSTRACT

Purpose: To provide OSHA offices, interested industry representatives, and State and federal agencies, guidance concerning the application of occupational safety and health standards in longshoring and marine terminal activities. Also, this instruction provides consistent information and ensures consistent enforcement of OSHA's marine cargo handling industry standards (29 CFR Parts 1917 and 1918).

Scope: OSHA-wide.

References:
A. 29 CFR Part 1910, General Industry Standards.
B. 29 CFR Part 1917, Marine Terminals Standards.
C. 29 CFR Part 1918, Longshoring Standards.
D. 29 CFR Part 1919, Gear Certification Standards.
E. OSHA 2003-2008 Strategic Management Plan.

Cancellation: CPL 02-00-132, Longshoring and Marine Terminals "Tool Shed" Directive, September 30, 2003.

State Impact: State adoption not required.

Action Offices: National, Regional, and Area Offices.

Originating Office: Directorate of Enforcement Programs (DEP).

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By and Under the Authority of
Edwin G. Foulke, Jr.
Assistant Secretary

Executive Summary

This instruction provides guidance to the Occupational Safety and Health Administration (OSHA) national, regional and area offices; industry employer and employee groups; State programs; and federal agencies, concerning OSHA's policies and procedures for implementing intervention and inspection programs to reduce or eliminate workplace hazards in longshoring operations and at marine terminals (collectively known as the "marine cargo handling industry"). OSHA is committed to focused interventions in the marine cargo handling industry (29 CFR Parts 1917 and 1918) to reduce injuries, illnesses and fatalities.

This instruction provides tools to support intervention and inspection programs in the marine cargo handling industry in a web-based, electronically linked format. This instruction:

- Supports DOL's Strategic Plan Outcome Goal 3.1 for increased emphasis on reducing workplace injuries, illnesses, and fatalities.

- Supports the reduction of occupational exposure to hazards through direct intervention; the promotion of a safety and health culture through compliance assistance, cooperative programs, and strong leadership; and supports the maximization of OSHA's effectiveness and efficiency by strengthening its capabilities and infrastructure.

- Provides OSHA compliance officers and consultants, and other interested government and industry parties, with information to support marine cargo handling industry intervention efforts and to minimize employee exposure to hazards.

- Provides a cross-reference index for matching standard sections to the Federal Register notice preamble and regulatory text (Appendix A).

- Provides cross-reference indexes for identifying like or similar 29 CFR Parts 1917 and 1918 standards (Appendices B and C).

- Delivers available marine cargo handling industry safety and health information in a web-based format with electronic links to noted references.

Significant Changes

- Updates answers to commonly asked marine cargo handling industry questions in Appendix D, by incorporating recently issued interpretations (New Q & A's are numbers 1, 2, 9, 14, 24, 27, 28, 35, 70, 71, and 72).

- Revises the format of this instruction to comply with current Agency policy.

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I. Purpose. This instruction provides guidance to the Occupational Safety and Health Administration (OSHA) national, regional and area offices; industry employer and employee groups; State programs; and federal agencies, concerning OSHA's policies and procedures for implementing intervention and inspection programs to reduce or eliminate workplace hazards in longshoring operations and at marine terminals (collectively known as the "marine cargo handling industry"). OSHA is committed to focused interventions in the marine cargo handling industry to reduce injuries, illnesses and fatalities. Further, this instruction provides consistent information and ensures consistent enforcement of OSHA's marine cargo handling industry standards (29 CFR Parts 1917 and 1918).

II. Scope. This instruction applies OSHA-wide to all programmed and unprogrammed compliance inspections, consultation interventions, and other activities such as compliance assistance, cooperative programs, training and education, in the marine cargo handling industry (29 CFR Parts 1917 and 1918).

III. Cancellation. This instruction cancels the following:

CPL 02-00-132, Longshoring and Marine Terminals "Tool Shed" Directive, September 30, 2003.

IV. Significant Changes. This instruction provides the tools needed to support marine cargo handling industry intervention and inspection programs. This instruction:

- Updates answers to commonly asked marine cargo handling industry questions in Appendix D by incorporating recently issued interpretations (New Q & A's are numbers 1, 2, 9, 14, 24, 27, 28, 35, 70, 71, and 72).

- Revises the format of this instruction to comply with current Agency policy.

V. References.

A. 29 CFR Part 1903, Inspections, Citations and Proposed Penalties.

B. 29 CFR Part 1910, General Industry Standards.

C. 29 CFR Part 1917, Marine Terminals Standards.

D. 29 CFR Part 1918, Longshoring Standards.

E. 29 CFR Part 1919, Gear Certification Standards.

F. Department of Labor 2003-2008 Strategic Plan, Department of Labor Strategic Plan for Fiscal Years 2003-2008.

G. OSHA Strategic Management Plan 2003-2008, Occupational Safety and Health Administration (OSHA) Strategic Management Plan for Fiscal Years 2003-2008.

H. Longshoring and Marine Terminals; Final Rule, Federal Register 62:40141 – 40234, July 25, 1997.

I. Longshoring, Marine Terminals, and Gear Certification; Final Rule, Federal Register 65:40935 – 40951, June 30, 2000.

J. Longshoring and Marine Terminals; Vertical Tandem Lifts; Proposed Rule, Federal Register 68:54297 – 54318, September 16, 2003.

K. OSHA Instructions.

- 07-03 (CPL 02), Site-Specific Targeting 2007 (SST-07), May 14, 2007.
- CPL 02-00-025, Scheduling Systems for Programmed Inspections, January 4, 1995.
- CPL 02-00-051, Enforcement Exemptions and Limitations Under the Appropriations Act, May 28, 1998.
- CPL 02-00-103, OSHA Field Inspection Reference Manual (FIRM), September 26, 1994.
- CPL 02-00-115, Complaint Policies and Procedures, June 14, 1996.
- CPL 02-00-124, Multi-Employer Citation Policy, December 10, 1999.
- CPL 02-00-130, National Emphasis Program: Lead, July 20, 2001.
- CPL 02-00-135, Recordkeeping Policies and Procedures Manual, December 30, 2004.
- CPL 02-00-137, Fatality/Catastrophe Investigation Procedures, April 14, 2005.
- CPL 02-01-020, OSHA/U.S. Coast Guard Authority over Vessels, November 8, 1996.

- CPL 02-01-028, Compliance Assistance for the Powered Industrial Truck Operators Training Standards, November 30, 2000 (includes a copy of the "NMSA Settlement Agreement" as Appendix C).

- CPL 02-01-039, Enforcement of Cargo Gear Regulations and the Requirements for Gear Certification in the Maritime Program, March 24, 2003.

- CPL 04-00-001, Procedures for Approval of Local Emphasis Programs (LEPs), November 10, 1999.

- CSP 01-03-001, Maritime Jurisdiction in State Plan States, October 30, 1978.

- CSP 03-01-002, Voluntary Protection Programs (VPP): Policies and Procedures Manual, March 25, 2003.

- CSP 03-02-002, OSHA Strategic Partnership Program for Worker Safety and Health, December 9, 2004.

- STD 02-01-009, Hazard Alert – Use of 4 x 29 Wire Rope as Cargo Runner (Hoisting Wire), October 1, 1990.

- Special Emphasis Program (SEP) for Silicosis, May 2, 1996.

L. Other references.

- OSHA Maritime Web Page.

- OSHA Local Emphasis Programs (LEPs); most recent list (internal OSHA document).

- OSHA eTools.

- OSHA Longshoring and Marine Terminals: Hazard and Abatement Summaries.

- Safety and Health Topics: Silica, Crystalline.

- OSHA Notice, Safety and Health Program Management Guidelines; Issuance of Voluntary Guidelines, Federal Register 54:3904 – 54:3916, January 26, 1989.

- OSHA Publications. Telephone number (202) 693-1888; Text Telephone (TTY) (877) 889-5627.

VI. Expiration Date. This instruction will remain in effect until canceled or superseded by instruction or notice.

VII. Federal Program Change. This instruction describes a federal program change for which State adoption is not required.

NOTE: In order for OSHA to effectively enforce safety and health standards, guidance to compliance staff is necessary. Therefore, although adoption of this instruction is not required, States are expected to have enforcement policies and procedures which are at least as effective as those adopted by Federal OSHA. In the interest of national OSHA maritime policy, those States that cover marine cargo handling industry employment activities, as well as those with public sector employees engaged in these activities, are encouraged to follow the provisions in this instruction.

VIII. Action Information.

A. Responsible Office. Directorate of Enforcement Programs (DEP), Office of Maritime Enforcement (OME).

B. Action Offices. National, Regional, and Area Offices; Consultation Project Managers.

C. Information Offices. State-Plan States.

IX. Actions Required. The policies and procedures set forth in this instruction are effective immediately and will remain in effect until canceled by proper authority. OSHA Regional Administrators, Area Directors, and National Office Directors must ensure that the policies and procedures set forth in this instruction are followed.

Regional Administrators also must ensure that State-Plan State Designees and Consultation Program Managers in their regions are informed of the requirements of this instruction and encourage the involvement of Consultation Programs in marine cargo handling industry employment.

X. Federal Agencies. This instruction describes a change that may affect federal agencies. It is the responsibility of the head of each federal agency to establish and maintain an effective and comprehensive safety and health program. Executive Order 12196, Section 1-201, and 29 CFR 1960.16 require federal agencies to adopt policies and procedures necessary to provide a level of protection equivalent to that provided by OSHA standards and regulations.

XI. Definitions.

A. *Danger Zone*: Any place in or about a machine or piece of equipment where an

employee may be struck by or caught between moving parts, caught between moving and stationary objects or parts of the machine, caught between the material and a moving part of the machine, burned by hot surfaces or exposed to electric shock. Examples of danger zones are nip and shear points, shear lines, drive mechanisms, and areas beneath counterweights.

B. *Data Initiative (a.k.a. Data Survey)*: The Data Initiative is a nationwide collection of establishment-specific injury and illness data from approximately 80,000 employers. The Data Initiative is OSHA's Annual Survey Form referenced in 29 CFR 1904.41.

C. *Days Away, Restricted, or Transferred (DART) Rate*: This includes cases involving days away from work, restricted work activity, and transfers to another job. The DART rate is calculated based on (N/EH) x (200,000) where N is the number of cases involving days away and/or job transfer or restriction, EH is the total number of hours worked by all employees during the calendar year, and 200,000 is the base for 100 full-time equivalent employees (2,000 hours per worker x 100 workers). The DART rate replaced the Lost Workday Injury and Illness (LWDII) rate effective January 1, 2002.

D. *Designated Person*: A person who possesses specialized abilities in a specific area and is assigned by the employer to perform a specific task in that area.

E. *Dockboards (car and bridge plates)*: Devices for spanning short distances between rail cars or highway vehicles and loading platforms that do not expose employees to falls greater than 4 feet (1.22 m).

F. *Fall Hazard (Longshoring Operations)*: Whenever employees are working within three feet (0.91 m) of the unprotected edge of a work surface that is 8 feet or more (2.44 m) above the adjoining surface and twelve inches (0.3 m) or more, horizontally, from the adjacent surface; or, whenever weather conditions may impair the vision or sound footing of employees working on top of containers.

G. *Fumigant*: A substance or mixture of substances, used to kill pests or prevent infestation, which is a gas or is rapidly or progressively transformed to the gaseous state, although some non-gaseous or particulate matter may remain and be dispersed in the treatment space.

H. *Gangway*: Any ramp-like or stair-like means of access provided to enable personnel to board or leave a vessel, including accommodation ladders, gangplanks and brows.

I. *Hatch Beam or Strongback*: A portable transverse or longitudinal beam placed across a hatchway that acts as a bearer to support the hatch covers.

J. *Intermodal Container*: A reusable cargo container of a rigid construction and rectangular configuration; fitted with devices permitting its ready handling,

particularly its transfer from one mode of transport to another; so designed to be readily filled and emptied; intended to contain one or more articles of cargo or bulk commodities for transportation by water and one or more other transport modes. The term includes completely enclosed units, open top units, fractional height units, units incorporating liquid or gas tanks and other variations fitting into the container system. It does not include cylinders, drums, crates, cases, cartons, packages, sacks, unitized loads or any other form of packaging.

K. *Longshoring Operations*: The loading, unloading, moving or handling of cargo, ship's stores, gear, or any other materials, into, in, on, or out of any vessel.

L. *Loose Gear*: Removable and replaceable components of equipment or devices which may be used with or as a part of assembled material handling units for purposes such as making connections, changing line direction and multiplying mechanical advantage. Examples are shackles and snatch blocks.

M. *Marine Terminal*: Wharves, bulkheads, quays, piers, docks and other berthing locations and adjacent storage or adjacent areas and structures associated with the primary movement of cargo or materials from vessel to shore or shore to vessel including structures which are devoted to receiving, handling, holding, consolidating and loading or delivery of waterborne shipments or passengers, including areas devoted to the maintenance of the terminal or equipment. The term does not include production or manufacturing areas nor does the term include storage facilities directly associated with those production or manufacturing areas.

N. *Ramps*: Other flat-surface devices for passage between levels and across openings not covered under "dockboards."

O. *Ro-Ro [Roll-on Roll-off] Operations*: Those cargo handling and related operations, such as lashing, that occur on Ro-Ro vessels, which are vessels whose cargo is driven on or off the vessel by way of ramps and moved within the vessel by way of ramps and/or elevators.

P. *Ship's Stores*: Materials which are on board a vessel for the upkeep, maintenance, safety, operation, or navigation of the vessel; or for the safety or comfort of the vessel's passengers or crew (Reference: 46 CFR Part 147).

Q. *Vessel*: Every description of watercraft or other artificial contrivance used or capable of being used, as a means of transportation on water, including special purpose floating structures not primarily designed for, or used as a means of, transportation on water.

R. *Vessel's Cargo Handling Gear*: Gear that is a permanent part of the vessel's equipment and used for the handling of cargo other than bulk liquids. The term covers all stationary or mobile cargo handling appliances used on board ship for

suspending, raising or lowering loads or moving them from one position to another while suspended or supported. This includes, but is not limited to, cargo elevators, forklifts, and other powered industrial equipment. It does not include gear used only for handling or holding hoses, handling ship's stores or handling the gangway, or boom conveyor belt systems for the self-unloading of bulk cargo vessels.

XII. Application. This instruction applies OSHA-wide to all interventions, inspections and violation abatement assistance in marine cargo handling industry employment. This instruction also applies to OSHA outreach efforts that include compliance assistance, cooperative programs, training, and education.

Further, this instruction applies to all State consultation programs with jurisdiction over employment activities at marine terminals (NOTE: All longshoring operations are conducted on vessels and are, therefore, exclusively federal jurisdiction). State consultation programs are expected to provide safety and health program assistance, training, education, hazard identification and abatement assistance to employers at marine terminals.

XIII. Background. This instruction is issued in support of the Department of Labor (DOL) Strategic Plan Outcome Goals (lead and silica are targeted hazards). This instruction consolidates OSHA references and guidance related to marine cargo handling industry employment into one "Tool Shed." To achieve the results required by DOL's Strategic Plan Performance Goals, OSHA has linked compliance assistance and enforcement strategies, including the OSHA Consultation Programs, to impact the targeted hazards and industries.

XIV. Outreach and Cooperative Programs.

A. OSHA Web Site. OSHA's web site has been developed to provide the latest assistance to employers and employees in all industries, including the maritime industry (i.e., shipyard employment, marine terminals, and longshoring). The web site can be accessed at:

Intranet – Accessible to OSHA only.
http://www.osha.gov/ (Internet – Accessible to the general public.)

In addition to general industry and construction topics, specific maritime employment and related information can be found at:

1. OSHA Assistance for the Maritime Industry. These pages are part of OSHA's commitment to provide maritime employers and workers with information and assistance to help in complying with OSHA standards and in ensuring safe and healthful workplaces.

Information on these OSHA web sites includes the following:

- Maritime Standards and Policy Information. This page provides direct links to OSHA maritime standards and policy documents for obtaining information and guidance regarding these standards.

- Maritime Topics. These include safety, health, and compliance information pertinent to a specific topic. This page contains links to related agencies and organizations that also can provide information or assistance to maritime employers and employees.

- Publications. OSHA has developed numerous safety and health publications covering a variety of topics. The publications on this page are selected from OSHA's general publications list because they provide information related specifically to maritime employment:

  Maritime Safety and Health Topics: OSHA Publications.

  Longshoring Industry, OSHA Publication Number 2232, Revised 2001 (also known as the "Green Book"). A pocket-size booklet containing the marine cargo handling industry standards (29 CFR Parts 1917 and 1918). It also addresses the importance of training in establishing and reinforcing employee awareness of job safety and health, the elements of an effective safety and health program, and OSHA's on-site consultation program.

  This information, along with many other publications, may be obtained through OSHA's publications page.

  Hard copies are also available, along with other publications, by dialing (202) 693-1888; Text Telephone (TTY) number is (877) 889-5627.

- OSHA eTools. eTools are "stand-alone," interactive, web-based training tools on occupational safety and health topics. They are highly illustrated and use graphic menus. Some also use expert system modules which enable the user to answer questions and receive reliable advice on how OSHA regulations apply to a particular worksite.

  OSHA eTools and Electronic Products for Compliance Assistance.

- *Longshoring and Marine Terminals: Hazard and Abatement Summaries*. These summaries were developed to help employers and workers in the marine cargo handling industry recognize and control significant hazards commonly experienced in longshoring and marine terminal operations. This document is comprised of 37 guide sheets that address the most frequent sources of fatalities in the marine cargo handling industry. Each guide sheet contains a hazard summary describing the circumstances that may have

contributed to the accidents, and how these specific accidents could have been prevented.

- Training and Outreach. Significant portions of OSHA's resources are directed to training OSHA and industry personnel in safety, health, and compliance procedures. Links are provided to State Consultation Programs that provide on-site consultation and training.

2. Office of Maritime Enforcement (OME). This office provides support for the maritime industries (i.e., shipyard employment, marine terminals, and longshoring) including: comprehensive program guidelines, policies, procedures, technical assistance, and information dissemination. This involves but is not limited to the development of standards interpretations; management and administration of the 29 CFR Part 1919 maritime gear certification program; coordination of the activities of the Agency's Maritime Steering Committee; development and coordination of maritime enforcement programs; and technical expertise in support of DOL's Office of the Solicitor. OME can be reached at (202) 693-2399, and its web page provides contact information and links to related OSHA compliance, outreach, and maritime sites.

3. Inspection Data. Inspection data is accessible through OSHA's web page. This link will take the user directly to the "Statistics and Data" page, which allows the user to conduct searches by establishment, Standard Identification Classification (SIC) code, North American Industry Classification System (NAICS) code, OSHA inspection number, accidents, and frequently cited standards. The page also contains links to the Bureau of Labor Statistics (BLS) for inspection data and statistics. The NAICS code that corresponds to the marine cargo handling industry is 488320 (SIC code 4491).

   NOTE: A complete list of NAICS codes is available on the U.S. Census Bureau web site.

B. State Consultation Programs. Consultation assistance in all States is available from State Consultation Programs for employers who want help in establishing and maintaining a safe and healthful workplace. Priority scheduling is provided to small employers with 250 or fewer employees at the worksite. Consultants help employers identify and correct specific hazards and can assist in developing and implementing effective workplace safety and health programs with emphasis on preventing worker injuries and illnesses. Employers also may receive training and education assistance, along with limited assistance away from the worksite. Serious hazards identified by the consultant must be corrected by a due date mutually agreed upon by the consultant and the employer. Links are provided to State Consultation Projects that provide on-site consultation and training.

C. Recognition Programs. OSHA's Strategic Management Plan Goal 2, requires OSHA

to promote a safety and health culture through compliance assistance, cooperative programs, and strong leadership. In keeping with this goal, OSHA has developed recognition programs to assist and support employer safety and health activities:

1. Safety and Health Achievement Recognition Program (SHARP). This program, operated by the State Consultation entities, recognizes the achievement of employers who operate exemplary safety and health management systems at their worksites. SHARP participants are granted an exemption from programmed inspections (not complaint or accident investigations) for a minimum of one year. The Consultation Project Manager can recommend an exemption of up to two years when a SHARP site is renewed.

2. Voluntary Protection Programs (VPP). The VPP represents OSHA's effort to extend worker protection beyond the minimum required by OSHA standards. These programs, along with others such as expanded on-site consultation services and compliance assistance provided by full-service area offices, are cooperative approaches which, when coupled with an effective enforcement program, expand worker protection to help meet the goals of the Occupational Safety and Health Act of 1970.

   Qualified sites are approved by one of three programs: Star, Merit, and Star Demonstration (recognition for worksites that address unique safety and health issues). These programs recognize outstanding achievement of those who have successfully implemented comprehensive safety and health management systems. VPP strives to motivate employers to achieve excellent safety and health results in their companies. It also strives to establish a relationship based on cooperation between employers, employees, and OSHA.

   CSP 03-01-002, Voluntary Protection Programs (VPP): Policies and Procedures Manual, March 25, 2003.

D. OSHA Strategic Partnership Program (OSPP). DOL's Strategic Plan Performance Goal 3.1 requires offices to develop partnerships and other cooperative efforts with industry to reduce workplace injuries, illnesses, and fatalities.

OSPP moves away from traditional enforcement methods and embraces collaborative agreements. Through OSPP, OSHA and its partners agree to work cooperatively to address critical safety and health issues. This very different approach has proven to be an effective tool for reducing fatalities, injuries, and illnesses in the workplace.

Working together, OSHA, employers and employees identify the safety and health problems they will address and begin to craft a partnership agreement. The agreement may be national, regional, or local in scope. Partners set measurable goals and individual responsibilities, specify action plans and measurement systems, and provide procedures for verifying results. Other interested parties, including unions, trade associations, State/local governments, the Consultation Projects, and insurance

companies, are often brought into the partnership to contribute their expertise and resources. The resulting agreement maximizes the use of non-OSHA resources to accomplish tasks such as training employees and developing site-appropriate safety and health management systems. OSHA serves mainly as the technical resource and facilitator.

E. OSHA Alliance Program. OSHA's Alliance Program enables organizations committed to workplace safety and health to collaborate with OSHA to prevent injuries and illnesses in the workplace. OSHA and its allies work together to reach out to, educate, and lead the nation's employers and their employees in improving and advancing workplace safety and health.

F. Other Marine Cargo Handling Industry Resources. While OSHA considers the entities below to be valuable resources for information concerning safe and healthful workplace practices in the marine cargo handling industry, employers accessing such information are not absolved of their obligations to comply with the Occupational Safety and Health (OSH) Act and standards promulgated pursuant to the OSH Act. Applying the recommendations or practices offered by these entities does not necessarily constitute compliance with the OSH Act and OSHA standards. In addition, OSHA does not control the publication of information on the web sites listed in this paragraph and cannot vouch for the accuracy, reliability, or timeliness of every piece of information contained in these web sites.

1. International Maritime Organization (IMO). The IMO is a specialized agency of the United Nations which is responsible for measures to improve the safety and security of international shipping and to prevent marine pollution from ships. The IMO has information concerning marine cargo handling that can be accessed through the IMO web site.

2. International Labor Organization (ILO). The ILO is a specialized, independent agency in the United Nations which has a unique tripartite structure of business, labor, and government representatives. Its mandate is to improve working conditions (including safety), create employment, and promote workplace human rights, globally. Several publications relating to the marine cargo handling industry are available through the ILO web site.

3. International Cargo Handling and Coordination Association (ICHCA). ICHCA is a membership organization dedicated to the promotion of safety and efficiency in the handling and movement of goods by all modes and during all phases of both national and international transport chains. ICHCA has 900 members in over 80 countries and those members consist of ports, terminals, port authorities, container depots, academics and cargo specialists. Numerous "best practice" publications concerning safe cargo handling are available, for a fee, through the association's web site.

4. International Longshoremen's Association (ILA). The ILA, AFL-CIO, is the

largest union of maritime workers in North America, representing upwards of 65,000 Longshoremen on the Atlantic and Gulf Coasts, Great Lakes, major U.S. rivers, Puerto Rico and Eastern Canada. The ILA's international headquarters is at 17 Battery Place in New York City, New York. More information can be obtained at the ILA web site.

5. International Longshore and Warehouse Union (ILWU). The ILWU is the largest union of maritime workers on the West Coast of the United States, including Alaska and Hawaii. More information can be obtained at the ILWU web site.

6. American Association of Port Authorities (AAPA). The AAPA is the alliance of leading ports in the Western Hemisphere which protects and advances the common interests of its diverse members as they connect their communities with the global transportation system. More information can be obtained at the AAPA web site.

7. Crane Certification Association of America (CCAA). The purpose of the CCAA is to promote crane safety, improve the crane inspection and certification profession, and address the subject of crane safety in governmental forums. More information can be obtained at the CCAA web site.

8. National Maritime Safety Association (NMSA). The NMSA advises and represents the United States private sector marine cargo handling industry on safety and health issues. The following associations are members of the NMSA and can be accessed at the NMSA web site.

    - Boston Shipping Association (BSA)
    - Hampton Roads Shipping Association (HRSA)
    - Midgulf Association of Stevedores, Inc. (MAS)
    - Mobile Steamship Association, Inc. (MSA)
    - New York Shipping Association, Inc. (NYSA)
    - Pacific Maritime Association (PMA)
    - Ports of the Delaware River Marine Trade Association (PMTA)
    - South Carolina Stevedores Association (SCSA)
    - Southeast Florida Employers Port Association (SEFEPA)
    - Steamship Trade Association of Baltimore, Inc. (STAB)
    - United States Maritime Alliance, Ltd. (USMX)
    - West Gulf Maritime Association (WGMA)

XV. Training. Training consists of both internal training for OSHA consultation and enforcement staff, and external training for marine cargo handling industry employers and employees. Training sources include: OSHA Office of Training and Education, State Consultation and Training Programs, OSHA Area Offices, and recipients of State and federal training grants.

A. OSHA Office of Training and Education (OTE). OSHA's OTE develops, directs, oversees, manages and ensures implementation of OSHA's national education policies and procedures. The OSHA Training Institute (OTI) in Arlington Heights, IL, provides basic and advanced training and education in safety and health for federal and State compliance officers; State consultants; other federal agency personnel; and private-sector employers, employees, and their representatives. OTI courses cover areas such as maritime standards, electrical hazards, health hazards, machine guarding, cranes, and rigging. The OTI facility includes classrooms, laboratories, a library, and an audiovisual unit. The OSHA Office of Training and Education also has established OSHA Training and Education Centers to address the increased demand for its courses from the private sector and from other federal agencies. These centers are nonprofit colleges, universities, and other organizations that have been competitively selected to participate in the program. OSHA Training and Education Centers are located in various parts of the United States.

   Registration information and course schedules are available on the OTE Registration Information/Course Schedule web page.

   NOTE: OTE offers a course that is specific to the marine cargo handling industry titled, *Longshoring and Marine Terminal Processes and Standards*, course number 2060.

B. State Consultation and Training Programs. State Consultation and Training Programs provide basic and advanced on-site training and education for private-sector employers, employees, and their representatives. They offer a wide variety of both general and employer-specific courses that cover areas such as electrical hazards, machine guarding, ventilation and ergonomics.

C. Federal Training Grants. OSHA offers funds to nonprofit organizations to train employers and employees to recognize, avoid, and prevent safety and health hazards in their workplaces.

XVI. Enforcement Programs. In order to carry out the purpose of the OSH Act, and the mandates in DOL's Strategic Plan and OSHA's Strategic Management Plan, OSHA compliance officers may enter places of marine cargo handling industry employment to conduct programmed inspections or to investigate complaints, referrals, catastrophes (i.e., hospitalization of three or more employees), and fatal incidents. General inspection criteria and contact information can be found in OSHA Instruction CPL 02-00-103, OSHA Field Inspection Reference Manual.

A. Inspection Scheduling. The marine cargo handling industry is made up of longshoring activities (i.e., cargo handling aboard vessels) and activities within marine terminals (i.e., cargo handling ashore). Due to the unique differences among these activities, several scheduling methods are necessary. Consequently, marine cargo handling industry inspections can be scheduled as National Emphasis Programs

(NEPs), Site-Specific Targeting (SST), Local Emphasis Programs (LEPs), or from lists developed in accordance with CPL 02-00-025. The NEP for lead, as well as the Special Emphasis Program (SEP) for silica, apply to both marine terminals (29 CFR Part 1917) and longshoring (29 CFR Part 1918) activities. All other scheduled marine cargo handling industry inspections would be conducted under LEPs that support OSHA's area of emphasis.

1. Scheduling Priorities. OSHA's priority system for conducting inspections is designed to distribute available resources effectively to ensure that a high level of protection is provided to workers throughout the nation. The inspection order of priority is:

   - Imminent danger, fatalities and catastrophes;
     CPL 02-00-137, Fatality/Catastrophe Investigation Procedures, April 14, 2005.

   - Complaints/referrals;
     CPL 02-00-115, Complaint Policies and Procedures, June 14, 1996.

   - Programmed inspections;
     CPL 02-00-025, Scheduling System for Programmed Inspections, January 4, 1995.

2. National Emphasis Programs (NEPs). Guidance for conducting NEP inspections in the marine cargo handling industry follows:

   - CPL 02-00-130, National Emphasis Program: Lead, July 20, 2001.

   - Special Emphasis Program (SEP) for Silicosis, May 2, 1996.

   - Safety and Health Topics: Silica, Crystalline.

   All other scheduled marine cargo handling industry inspections would be conducted under LEPs that support DOL's Strategic Plan and OSHA's Strategic Management Plan Goals.

3. Site-Specific Targeting (SST). SSTs are types of NEP inspections that will be conducted in accordance with the following directive or successor guidance:

   07-03 (CPL 02), Site-Specific Targeting 2007 (SST-07), May 14, 2007.

4. Local Emphasis Programs (LEPs). LEPs are a type of Special Emphasis Program as described in OSHA Instruction CPL 02-00-025. One or more Area Offices in a region can participate. LEPs may be originated at the Area Office or Regional Office level.

CPL 04-00-001, Procedures for Approval of Local Emphasis Programs (LEPs), November 10, 1999.

LEPs are generally based on knowledge of local industry hazards or knowledge of local industry injury and illness rates. LEPs may include targeting of employers with 10 or fewer employees, as long as they do not conflict with restrictions under Congressional Appropriations Act riders described in OSHA Instruction CPL 02-00-051 or successor guidance.

The most recent list of OSHA Local Emphasis Programs (LEPs) in effect is available at the Directorate of Enforcement Programs (DEP) Homepage (Intranet – accessible to OSHA only).

5. Enhanced Enforcement Program (EEP). This program is intended as a means to focus on employers who, despite OSHA's outreach and enforcement efforts, ignore their OSH Act obligations, thereby placing their employees at risk. Cases identified by the EEP are those in which at least one of the following criteria is met:

   - A fatality inspection in which there is at least one high gravity serious (or willful or repeated) violation related to the death;
   - An inspection that results in three or more high gravity serious violations classified as willful or repeated; or
   - An inspection that results in two or more failure-to-abate penalty notices where the underlying violations were classified as high gravity serious.

   Employers who have been the subject of an EEP case may receive one or more of the following:

   a. Enhanced follow-up inspections;

   b. Targeted inspections for other worksites of the employer;

   c. Increased company/corporate awareness of OSHA enforcement;

   d. Enhanced settlement provisions; or

   e. Federal court enforcement under Section 11(b) of the OSH Act.

   If an unprogrammed inspection arises for an establishment that is to receive a follow-up inspection or additional targeted inspection as a result of the EEP, the two inspections may be conducted either concurrently or separately. The EEP

does not affect in any way, the conduct of unprogrammed inspections.

Some establishments may be selected for inspection under the EEP and also under other OSHA initiatives such as Site-Specific Targeting (SST), National Emphasis Programs (NEPs), or Local Emphasis Programs (LEPs). These other programs can be run concurrently with the EEP.

6. Inspection Lists. These lists consist of work sites from which marine cargo handling industry inspections will be scheduled. Regional and area offices are responsible for generating establishment lists in accordance with CPL 02-00-025. These lists are updated from sources such as MARAD and industry associations, as the information becomes available.

   Inspections may be conducted in various ways. Two ways that have been used successfully in scheduling longshoring and marine terminal inspections are:

   - By Port Area. A list of marine cargo handling sites by port areas may be prepared at the beginning of the fiscal year by the Area Office, using LEP inspection lists, local knowledge, and experience.

   - By Employer. A list of all marine cargo handling industry employers within the jurisdiction of the Area Office may be prepared, using LEP inspection lists, local knowledge, and experience.

   NOTE: For longshoring operations, each vessel is a separate inspection.

B. Inspection Procedures. General information on interventions and inspections can be found in OSHA Instruction CPL 02-00-103, OSHA Field Inspection Reference Manual.

   For marine cargo handling industry intervention and inspection work specifically, OSHA supervisors, team leaders and CSHO's are advised of the following:

   1. Preparation. To conduct an effective marine cargo handling industry intervention or inspection the CSHO must spend an adequate amount of time preparing. Supervisors or team leaders are responsible for ensuring that CSHOs are qualified by either training or experience to inspect/intervene in marine cargo handling establishments.

   2. Inspection Materials and Equipment. Prior to participating in any marine cargo handling industry interventions or inspections, CSHOs shall be properly equipped and attired. All necessary personal protective equipment (PPE) must be available for use and in proper operating condition. CSHOs must be trained in the uses and limitations of PPE before beginning the inspection. Suggested minimum PPE for a CSHO are: hard hat, safety shoes, gloves, eye protection, and high visibility/retro-reflective vest. Additional PPE may be required, such as a

respirator, if conditions warrant. All testing and monitoring equipment also must be calibrated (if necessary) and in good condition. CSHOs must be thoroughly trained in the proper use of all monitoring equipment before assignment to any inspection. It may be advisable for CSHOs to carry an O_2-LEL (oxygen-lower explosive limit) meter when conducting vessel inspections.

3. Safety and Health Rules at Marine Cargo Handling Facilities. 29 CFR 1903.7(c) requires the CSHO to comply with all safety and health rules and practices at the marine cargo handling facility or vessel, and wear or use the safety clothing or protective equipment required by OSHA standards or by the employer for the protection of employees.

4. Maritime Standard Alleged Violation Elements (SAVEs). Current Maritime SAVEs are available for CSHOs. In a joint effort by the Directorate of Enforcement Programs (DEP)/Office of Maritime Enforcement (OME) and selected OSHA field offices, Maritime SAVEs have been developed to provide 100 percent coverage of all enforceable standards for the maritime industries: shipyard employment, marine terminals and longshoring. The Maritime SAVEs include their respective Alleged Violation Descriptions (AVDs) which have been specifically tailored for maritime applications. OME is responsible for maintaining the Maritime SAVEs.

C. Multi-employer Worksites. For multi-employer worksites at marine terminals and during longshoring operations, more than one employer may be liable for a hazardous condition that violates an OSHA standard. The process that must be followed in determining whether more than one employer is liable for employee safety and health conditions can be found in OSHA Instruction CPL 02-00-124, Multi-Employer Citation Policy. The Regional Solicitor's office is available to address issues concerning the application of the multi-employer worksite doctrine.

D. Violation Abatement Assistance Program. OSHA is committed to reducing workplace injuries and illnesses in longshoring and marine terminals. To help meet this goal, marine cargo handling industry employers are encouraged to seek advice and off-site consultation. The employer should make these requests by writing, calling or visiting the nearest OSHA Office.

XVII. Coordination. This instruction will be coordinated by the Directorate of Enforcement Programs (DEP). Questions and comments should be directed to the Office of Maritime Enforcement (OME).

XVIII. Program Evaluation. During interventions and inspections, area offices will continue to collect data and information such as OSHA 300 Log entries and calculate reductions in DART rates (see definition, section XI, paragraph C) to measure the effectiveness of OSHA's initiatives to improve marine cargo handling industry occupational safety and health. Area offices will forward this information to their respective regional offices. At the end of each fiscal year, after summarizing the data and information, the regional

offices will forward the summary to the National Office, Directorate of Enforcement Programs (DEP). DEP will serve a coordinating role, collecting information from regional offices on best practices in the marine cargo handling industry and, after review and evaluation, disseminating the information to regional offices and the Office of Training and Education (OTE).

Appendix A: OSHA Longshoring and Marine Terminals Cross-Reference Index for Standard Sections to Federal Register Notice Preamble and Regulatory Text

This appendix provides a cross-reference for sections of the standard in the preamble and regulatory text as published in the Federal Register of Friday, July 25, 1997, *Longshoring and Marine Terminals; Final Rule*. Sections which were addressed in both the preamble and the regulatory text will have the applicable page number(s) from the *printed* Federal Register listed for each. Sections which were addressed in only the regulatory text will have the applicable page number(s) from the *printed* Federal Register listed. Sections which were not changed or renumbered as part of the rulemaking have no reference page number(s) listed. When using the *electronic* copy of the Federal Register, the page numbers referenced in this table are not available; however, the document can be searched by keyword (select "edit" and then "find"; or "CTRL + F").

While every effort has been made to identify all applicable cross-references to the appropriate Federal Register text, this appendix cannot, and is not intended to, enlarge or diminish employer obligations under the OSH Act. Furthermore, while preamble text may provide clarification regarding the nature or scope of a regulation, it is not a substitute for, nor does it supercede, the text of the regulation. Employers should consult the current Code of Federal Regulations for the complete text of regulations contained in 29 CFR Parts 1917 and 1918.

Copies of any Federal Register can be obtained from the Superintendent of Documents, U.S. Government Printing Office (GPO), or on the World Wide Web at http://www.access.gpo.gov/.

PART 1917 - MARINE TERMINALS

SECTION #	HEADING/DESCRIPTION	PREAMBLE	REG/TEXT
1917.1	Scope and applicability [Includes 1910 applicability]	40146	40196
1917.2	Definitions	40146	40196
1917.3	Incorporation by reference	-----	40196
1917.11	Housekeeping	-----	40196 – 40197
1917.12	Slippery conditions	-----	-----
1917.13	Slinging	-----	40197
1917.14	Stacking of cargo and pallets	-----	-----
1917.15	Coopering	-----	-----
1917.16	Line handling	-----	-----
1917.17	Railroad facilities	-----	40197

SECTION #	HEADING/DESCRIPTION	PREAMBLE	REG/TEXT
1917.18	Log handling	-----	-----
1917.19	Movement of barges and railcars	-----	-----
1917.20	Interference with communications	-----	40197
1917.21	Open fires	-----	-----
1917.22	Hazardous cargo	40180 [1918.89]	-----
1917.23	Hazardous atmospheres/substances	-----	40197
1917.24	Carbon monoxide	-----	40197
1917.24(a)	Carbon monoxide	40182 [1918.94(a)(1)(ii)]	40197
1917.25	Fumigants, pesticides, insecticides and hazardous preservatives	-----	40197
1917.25(a)	Fumigants	40183 [1918.94(d)]	40197
1917.25(g)	Fumigants (Intermodal containers)	40147	40197
1917.26	First aid and lifesaving facilities	40184 – 40185 [1918.97]	40197
1917.26(c) & (d)	First aid and stretchers	40185 [1918.97(c) & (d)]	40197
1917.27	Personnel	40185 – 40186 [1918.98]	40197 – 40198
1917.27(a)(2)	Personnel	40185 – 40186 [1918.98(a)(2)]	40197 – 40198
1917.28	Hazard communication	-----	40198
1917.29	Retention of DOT markings, placards and labels	-----	-----
1917.30	Emergency action plans	40186 – 40187 [1918.100]	40198
1917.41	House falls	-----	-----
1917.42	Miscellaneous auxiliary gear	-----	40198
1917.42(g)(2)(vi)	Slings criteria	40166 [1918.62(g)(2)(vi)]	40198
1917.43	Powered industrial trucks	-----	40198 – 40199
1917.44	General rules applicable to vehicles	-----	40199
1917.45	Cranes and derricks	-----	40199
1917.45(f)(5)(i)	Crane cab glass	40162 [1918.55(b)(1)]	40199
1917.45(f)(5)(ii)	Seat belts on gantry cranes	40147	40199

SECTION #	HEADING/DESCRIPTION	PREAMBLE	REG/TEXT
1917.45(j)(2)	Cranes hoisting personnel	40168 [1918.66(c)(2)]	40199
1917.45(j)(9)	Riding the load	40173 [1918.85(h)]	40199
1917.46	Load indicating devices	40147	40199 – 40200
1917.47	Winches	-----	-----
1917.48	Conveyors	-----	40200
1917.49	Spouts, chutes, hoppers, bins, and associated equipment	-----	-----
1917.50	Certification of marine terminal material handling devices	-----	40200
1917.50(c)(5)	Special gear	40164 [1918.61(f)]	40200
1917.51	Hand tools	40170 [1918.69]	-----
1917.70	General (Specialized terminals)	-----	-----
1917.71	Terminals handling intermodal containers or Ro-Ro operations	-----	40200
1917.71(b)(6)	Automobiles in containers	40170 [1918.85(b)(6)]	40200
1917.71(f)	Vertical lifts - containers	40170 – 40172 [1918.85(f)(1)(i)]	40200
1917.73	Terminal facilities handling menhaden and similar species of fish	-----	40201
1917.73(a)(2)	Menhaden	40183 [1918.94(f)(4)]	40201
1917.91	Eye and face protection	-----	40201
1917.91(a)(1)	Eye protection	40187 [1918.101(a)(1)]	40201
1917.92	Respiratory protection	-----	-----
1917.93	Head protection	-----	40201
1917.93(b)	Head protection	40187 [1918.103(b)]	40201
1917.94	Foot protection	-----	40201
1917.94(b)	Foot protection	40187 [1918.103(b)]	40201
1917.95	Other protective measures (Clothing, PFDs)	-----	40201
1917.95(b)(2)	Personal floatation devices	40187	40201
1917.111	Maintenance and load limits	-----	-----

SECTION #	HEADING/DESCRIPTION	PREAMBLE	REG/TEXT
1917.112	Guarding of edges	-----	40201
1917.113	Clearance heights	-----	-----
1917.114	Cargo doors	-----	-----
1917.115	Platforms and skids	-----	-----
1917.116	Elevators and escalators	-----	-----
1917.117	Manlifts	-----	-----
1917.118	Fixed ladders	-----	40201
1917.119	Portable ladders	-----	40201
1917.120	Fixed stairways	-----	-----
1917.121	Spiral stairways	-----	40201
1917.122	Employee exits	-----	-----
1917.123	Illumination	-----	-----
1917.124	Dockboards (car and bridge plates)	-----	40201
1917.124(c)(5) and (c)(6)	Dockboards (car and bridge plates)	40156 – 40157	40201
1917.124(d)(1) and (d)(5)	Ramps	40157	40201
1917.125	Guarding temporary hazards	-----	-----
1917.126	River banks	-----	40201
1917.127	Sanitation	-----	-----
1917.127(a)(1)	Sanitation	40184	-----
1917.128	Signs and markings	-----	-----
1917.151	Machine guarding	40184	-----
1917.152	Welding, cutting and heating (hot work)	-----	40202
1917.153	Spray painting	-----	40202
1917.154	Compressed air	-----	-----
1917.155	Air receivers	-----	-----
1917.156	Fuel handling and storage	-----	40202
1917.157	Battery charging and changing	-----	40202
1917.158	Prohibited operations	-----	-----

PART 1918 - LONGSHORING

SECTION #	HEADING/DESCRIPTION	PREAMBLE	REG/TEXT
1918.1	Scope and application [Includes 1910 applicability]	40147 – 40150	40202
1918.2	Definitions	40150 – 40151	40203
1918.3	Incorporation by reference	-----	40204
1918.11	Gear certification	40151 – 40154	40204
1918.21	General requirements	40154 – 40155	40204
1918.22	Gangways	40154 – 40155	40204 – 40205
1918.23	Jacob's ladders	40155	40205
1918.24	Fixed and portable ladders	40155 – 40156	40205
1918.25	Bridge plates and ramps	40156 – 40157	40206
1918.26	Access to barges and river towboats	40157	40206
1918.31	Hatch coverings	40157	40206
1918.32	Stowed cargo and temporary landing surfaces	40157 – 40158	40206
1918.33	Deck loads	40158	40206
1918.34	Other decks	40158	40206
1918.35	Open hatches	40158	40206
1918.36	Weather deck rails	40158	40206
1918.37	Barges	40158	40206 – 40207
1918.41	Coaming clearances	40159	40207
1918.42	Hatch beam and pontoon bridles	40159	40207
1918.43	Handling hatch beams and covers	40159 – 40160	40207 – 40208
1918.51	General requirements	40160 – 40161	40208
1918.52	Specific requirements	40161	40208
1918.53	Cargo winches	40161 – 40162	40208
1918.54	Rigging gear	40162	40209
1918.55	Cranes	40162 – 40163	40209
1918.55(c)(2)	Limit switch bypass systems	40162 – 40163	40209
1918.61	General	40164 – 40165	40209 – 40210
1918.62	Miscellaneous auxiliary gear	40165 – 40167	40210 – 40211

SECTION #	HEADING/DESCRIPTION	PREAMBLE	REG/TEXT
1918.63	Chutes, gravity conveyors and rollers	40167	40212
1918.64	Powered conveyors	40167	40212
1918.64(k)	Lockout/Tagout	40167	40212
1918.65	Mechanically-powered vehicles used aboard vessels	40167 – 40168	40212 – 40213
1918.66	Cranes/derricks other than vessel's gear	40168 – 40170	40213 – 40215
1918.66(c)	Hoisting personnel; Anti-two-blocking	40168 – 40169	40214
1918.67	Notifying ship's officers before using certain equipment	40170	40215
1918.68	Grounding	40170	40215
1918.69	Tools	40170	40215
1918.81	Slinging	40170	40215 – 40216
1918.82	Building drafts	40170	40216
1918.83	Stowed cargo; tiering/breaking down	40170	40216
1918.84	Bulling cargo	40170	40216
1918.85	Containerized cargo operations	40170	40216 – 40218
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1918.85(j)	Fall protection	40173 – 40176	40217
1918.85(k)	Fall protection systems	40176 – 40177	40217 – 40218
1918.86	Roll-on Roll-off (Ro-Ro) operations	40177 – 40179	40218
1918.87	Ship's cargo elevators	40179	40218
1918.88	Log operations	40179 – 40180	40218 – 40219
1918.89	Handling hazardous cargo	40180	40219
1918.90	Hazard communication	40180	40219
1918.91	Housekeeping	40180	40219
1918.92	Illumination	40180	40219
1918.93	Hazardous atmospheres and substances	40180	40219
1918.94	Ventilation and atmospheric conditions	40181 – 40183	40220 – 40221
1918.95	Sanitation	40184	40221
1918.96	Maintenance and repair work in the vicinity of longshoring operations	40184	40221

SECTION #	HEADING/DESCRIPTION	PREAMBLE	REG/TEXT
1918.96(e)	Danger zone and lockout/tagout	40184	40221
1918.97	First aid and lifesaving facilities	40184 – 40185	40221
1918.98	Qualifications of machinery operators and supervisory training	40185 – 40186	40221 – 40222
1918.99	Retention of DOT markings, placards and labels	40186	40222
1918.100	Emergency action plans	40186 – 40187	40222
1918.101	Eye and face protection	40187	40222
1918.102	Respiratory protection	40187	40222
1918.103	Head protection	40187	40222
1918.104	Foot protection	40187	40223
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Appendix I	Cargo gear register and certificates [Non-Mandatory]	40187	40223 – 40227
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Appendix III	The mechanics of conventional cargo gear [Non-Mandatory]	40188	40231 – 40232
Appendix IV	Special cargo gear and certain spreader test requirements [Mandatory]	40188	40232
Appendix V	Basic elements of a first aid training program [Non-Mandatory]	40188	40232 – 40234

Appendix B: Cross-Reference Index for Part 1917 to Part 1918

This cross-reference index lists 29 CFR Part 1917 standards, and the location of identical or similar standards in 29 CFR Part 1918.

While every effort has been made to identify all applicable cross-references between the appropriate 29 CFR Parts 1917 and 1918 texts, this appendix is not intended to enlarge or diminish employer obligations under the OSH Act.

Subject Title From Part 1917	29 CFR Part 1917	29 CFR Part 1918
Scope and Applicability [Includes 1910 applicability]	1917.1	1918.1
Definitions	1917.2	1918.2
Incorporation by Reference [Standards]	1917.3	1918.3
Housekeeping	1917.11	1918.91
Slippery Conditions	1917.12	1918.91(b)
Slinging	1917.13	1918.81
Stacking of Cargo and Pallets	1917.14	1918.83
Coopering	1917.15	-----
Line Handling	1917.16	-----
Railroad Facilities	1917.17	-----
Log Handling	1917.18	1918.88
Movement of Barges and Railcars	1917.19	1918.84(e)
Interference with Communications	1917.20	1918.96(a)
Open Fires	1917.21	-----
Hazardous Cargo	1917.22	1918.89
Hazardous Atmospheres and Substances	1917.23	1918.93
Carbon Monoxide	1917.24	1918.94(a)(1)
Fumigants, Pesticides, Insecticides, etc.	1917.25	1918.94(b) thru (f)
First Aid and Lifesaving Facilities	1917.26	1918.97
Stretchers/Stokes Basket	1917.26(d)	1918.97(d)
Personnel	1917.27	1918.98
Suddenly Incapacitating Medical Ailments	1917.27(a)(2)	1918.98(a)(2)
Supervisor Accident Prevention Proficiency	1917.27(b)	1918.98(b)
Hazard Communication	1917.28	1918.90

Subject Title From Part 1917	29 CFR Part 1917	29 CFR Part 1918
Retention of DOT Markings, Placards And Labels	1917.29	1918.99
Emergency Action Plans	1917.30	1918.100
House Falls	1917.41	1918.51 & .52(c)
Miscellaneous Auxiliary Gear	1917.42	1918.54 & .62
Powered Industrial Trucks	1917.43 & 1910.178(l)	1918.65 & 1910.178(l)
General Rules Applicable to Vehicles	1917.44	1918.86
Cranes and Derricks	1917.45	1918.55 & .66
Crane Cab Glass	1917.45(f)(5)(i)	1918.55(b)(1)
Crane-Bypass Limit Switch	1917.45(g)(11)	1918.55(c)(2)
Cranes-Protections for Hoisting Personnel	1917.45(j)	1918.66(c)
Container Top Safe Access/Egress	1917.45(j)	1918.85(g)
Anti-Two-Blocking Devices; Use of	1917.45(j)(9)	1918.66(c)(3)
Riding the Load	1917.45(j)(9)	1918.85(h)
Load Indicating Devices	1917.46	1918.66(f)
Winches	1917.47	1918.53
Conveyors	1917.48	1918.63 & .64
Spouts, Chutes, Hoppers, Bins, etc.	1917.49	1918.63
Certification of Material Handling Devices	1917.50	1918.11
Special Stevedoring Gear; Testing	1917.50(c)	1918.61(h)
Special Gear	1917.50(c)(5)	1918.61(f)
Hand Tools	1917.51	1918.69
Terminals Handling Intermodal Containers or Roll-on Roll-off Operations	1917.71	1918.85 & 1918.86
Automobiles in Containers	1917.71(b)(6)	1918.85(b)(6)
Vests: High Visibility/Retro-reflective Material	1917.71(e)	1918.86(m)
Vertical Lifts-Containers	1917.71(f)	1918.85(f)(1)(i)
Trailer Load Limits	1917.71(f)(4)	1918.86(g)
Menhaden and Similar Fish; Handling	1917.73	1918.94(f)
Eye and Face Protection	1917.91	1918.101
Respiratory Protection	1917.92	1918.102
Head Protection	1917.93	1918.103

Subject Title From Part 1917	29 CFR Part 1917	29 CFR Part 1918
Foot Protection	1917.94	1918.104
Protective Clothing	1917.95(a)	1918.105(a)
Personal Floatation Devices (PFDs)	1917.95(b)	1918.105(b)
Maintenance and Load Limits (Docks/Piers)	1917.111	-----
Guarding of Edges	1917.112	1918.32 & .34
Clearance Heights	1917.113	1918.86(e)
Cargo Doors	1917.114	1918.43
Platforms and Skids	1917.115	1918.34
Elevators and Escalators	1917.116	1918.87
Manlifts	1917.117	1918.65(h)(11)
Fixed Ladders	1917.118	1918.24
Portable Ladders	1917.119	1918.23, .24 & .26
Fixed Stairways	1917.120	-----
Spiral Stairways	1917.121	-----
Employee Exits	1917.122 & .30	1918.33, .37, .41 & .100
Illumination	1917.123	1918.92
Dockboards (Car and Bridge Plates)	1917.124	1918.25
Dockboards	1917.124(c)(5) & (c)(6)	1918.25(a)(4)
Ramps	1917.124(d)(1) & (d)(5)	1918.25(b)(5)
Guarding Temporary Hazards	1917.125	1918.32, .33, .35 & .41
River Banks	1917.126	-----
Sanitation	1917.127	1918.95
Sanitation; Washing and Toilet Facilities	1917.127(a)(1)	1918.95(a)(1)
Signs and Marking	1917.128	-----
Machine Guarding	1917.151	1918.96(e)
Welding, Cutting and Heating [Hot Work]	1917.152	1918.96(c) & (d)
Spray Painting	1917.153	1918.96(d)
Compressed Air	1917.154	-----
Air Receivers	1917.155	-----
Fuel Handling and Storage	1917.156	-----
Battery Charging and Changing	1917.157 & .43(c)(2)	1918.65(f)(5) & (f)(6)
Prohibited Operations	1917.158	1918.96(c) & (d)

Appendix C: Cross-Reference Index for Part 1918 to Part 1917

This cross-reference index lists 29 CFR Part 1918 standards, and the location of identical or similar standards in 29 CFR Part 1917.

While every effort has been made to identify all applicable cross-references between the appropriate 29 CFR Parts 1918 and 1917 texts, this appendix is not intended to enlarge or diminish employer obligations under the OSH Act.

Subject Title From Part 1918	**29 CFR Part 1918**	**29 CFR Part 1917**
Scope and Application [Includes 1910 applicability]	1918.1	1917.1
Definitions	1918.2	1917.2
Incorporation by Reference	1918.3	1917.3
Gear Certification; Vessel's Cargo Handling	1918.11	1917.50
General Requirements	1918.21	-----
Gangways	1918.22	-----
Jacob's Ladders	1918.23	-----
Fixed and Portable Ladders	1918.24	1917.118 & .119
Bridge Plates and Ramps	1918.25	1917.124
Dockboards (Car and Bridge Plates)	1918.25(a)(4)	1917.124(c)(5) & (c)(6)
Dockboards	1918.25(b)(5)	1917.124(d)(1) & (d)(5)
Access to Barges and River Towboats	1918.26	-----
Hatch Coverings	1918.31	-----
Stowed Cargo and Temporary Landing Surfaces	1918.32	1917.125
Deck Loads	1918.33	-----
Other Decks	1918.34	-----
Open Hatches	1918.35	-----
Weather Deck Rails	1918.36	-----
Barges	1918.37	-----
Coaming Clearances	1918.41	-----
Hatch Beam and Pontoon Bridles	1918.42	-----
Handling Hatch Beams and Covers	1918.43	1917.114
General Requirements	1918.51	1917.41 & .42
Specific Requirements	1918.52	1917.42

Subject Title From Part 1918	29 CFR Part 1918	29 CFR Part 1917
Cargo Winches	1918.53	1917.47
Rigging Gear	1918.54	1917.41 & .42
Cranes	1918.55	1917.45
Crane Glass	1918.55(b)(1)	1917.45(f)(5)
Crane-Bypass Limit Switch	1918.55(c)(2)	1917.45(g)(11)
General	1918.61	-----
Special Gear	1918.61(f)	1917.50(c)(5)
Special Stevedoring Gear; Testing	1918.61(h)	1917.50(c)
Miscellaneous Auxiliary Gear	1918.62	1917.42
Chutes, Gravity Conveyors and Rollers	1918.63	1917.48 & .49
Powered Conveyors	1918.64	1917.48
Mechanically-Powered Vehicles; Vessels	1918.65 & 1910.178	1917.43 & 1910.178
Cranes and Derricks Other Than Vessels Gear	1918.66	1917.45
Cranes-Protections for Hoisting Personnel	1918.66(c)	1917.45(j)
Anti-Two-Blocking Devices; Use of	1918.66(c)(3)	1917.45(j)(9)
Load Indicating Device (LID) Requirements	1918.66(f)	1917.46
Notifying Ship's Officers (Equipment Use)	1918.67	-----
Grounding	1918.68 & 1910 Subpart S	1910 Subpart S
Tools	1918.69	1917.51
Slinging	1918.81	1917.13
Building Drafts	1918.82	-----
Stowed Cargo; Tiering/Breaking Down	1918.83	1917.14
Bulling Cargo	1918.84	-----
Movement of Barges and Railcars	1918.84(e)	1917.19
Containerized Cargo Operations	1918.85	1917.71
Automobiles in Containers	1918.85(b)(6)	1917.71(b)(6)
Vertical Lifts-Containers	1918.85(f)(1)(i)	1917.71(f)
Container Top Safe Access/Egress	1918.85(g)	1917.45(j)
Riding the Load	1918.85(h)	1917.45(j)(9)
Roll-on Roll-off (Ro-Ro) Operations	1918.86	1917.71

Subject Title From Part 1918	29 CFR Part 1918	29 CFR Part 1917
Trailer Load Limits	1918.86(g)	1917.71(f)(4)
Vest; High Visibility/Retro-reflective Material	1918.86(m)	1917.71(e)
Ship's Cargo Elevators	1918.87	1917.116
Log Operations	1918.88	1917.18
Handling Hazardous Cargo	1918.89	1917.22
Hazard Communication	1918.90	1918.28
Housekeeping	1918.91	1917.11
Housekeeping; Slippery Conditions	1918.91(b)	1917.12
Illumination	1918.92	1917.123
Hazardous Atmospheres and Substances	1918.93	1917.23
Ventilation and Atmospheric Conditions	1918.94	1917.23
Carbon Monoxide	1918.94(a)(1)	1917.24
Fumigants, Pesticides, Insecticides, etc.	1918.94(b) thru (f)	1917.25
Menhaden and Similar Fish; Handling	1918.94(f)	1917.73
Sanitation	1918.95	1917.127
Sanitation; Washing and Toilet Facilities	1918.95(a)(1)	1917.127(a)(1)
Maintenance and Repair Work (Operations)	1918.96	1917.158
Interference with Communications	1918.96(a)	1917.20
Machine Guarding	1918.96(e)	1917.151
First Aid and Lifesaving Facilities	1918.97	1917.26
Stretchers/Stokes Basket	1918.97(d)	1917.26(d)
Qualifications of Operators and Supervisory Training	1918.98	1917.27
Suddenly Incapacitating Medical Ailments	1918.98(a)(2)	1917.27(a)(2)
Supervisory Accident Prevention Proficiency	1918.98(b)	1917.27(b)
Retention of DOT Markings/Placards/Labels	1918.99	1917.29
Emergency Action Plans	1918.100	1917.30
Eye and Face Protection	1918.101	1917.91
Respiratory Protection	1918.102	1917.92
Head Protection	1918.103	1917.93
Foot Protection	1918.104	1917.94
Other Protective Measures	1918.105	1917.95
Protective Clothing	1918.105(a)	1917.95(a)
Personal Floatation Devices (PFDs)	1918.105(b)	1917.95(b)

Appendix D: Answers to Common Questions Regarding the Longshoring and Marine Terminals Final Rules

This appendix consolidates OSHA interpretations related to longshoring and marine terminals that have been issued and remain valid, as of the date of this instruction. Interpretations previously issued by OSHA were reviewed to determine their current validity and accuracy. Interpretations for which standard references have changed, were updated to reflect the current standard reference.

Additionally, OSHA conducted Outreach Seminars on the revised *Longshoring* and *Marine Terminals* standards that were published as a Final Rule on July 25, 1997. This Final Rule became effective on January 21, 1998. The Outreach Seminars were conducted in most major U.S. port areas, and included participation by labor and management representatives from the marine cargo handling industry, OSHA, State, and other federal regulatory agencies. The questions that were frequently asked by Outreach Seminar participants, along with the answers provided by OSHA representatives, are included in this appendix.

OSHA requirements are set by statute, standards and regulations. Our interpretations explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. These responses constitute OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's web site at http://www.osha.gov/.

Question 1: What directives have been canceled or superceded by this or previously issued "Tool Shed" instructions?

Answer: The following documents have been cancelled or superceded by previously issued "Tool Shed" instructions:

- CPL 2-1.17, *29 CFR 1918.32(b), Stowed Cargo and Temporary Landing Platforms – Application to Containers Stowed on the Decks of Vessels,* dated August 30, 1982.

- PD # 100-15, *29 CFR 1918.65(b), Mousing of Screw Pin Shackles and the Meaning of 'Aloft',* dated November 7, 1972.

- STD 2-1.4A, *29 CFR 1918.74(a)(9), Crane Load Indicating Device,* dated November 2, 1979.

- STD 2-1.5A, *29 CFR Parts 1915, 1916, 1917 and 1918, Cranes and Derricks Covered by the Maritime Regulations,* dated November 2, 1979.

- STD 2-1.7, *Interpretation of 29 CFR 1918.74(a)(9)(viii)(d), Guidance on Requirements*

for Load Indicating Devices on Cranes, dated October 30, 1978.

- STD 2-1.8, *Responsibility Under 29 CFR Part 1918 for Compliance Affecting Equipment Used, but not Owned by, or Under the Control of the Employer*, dated October 30, 1978.

- STD 2.2, *29 CFR 1917.71 and 29 CFR 1918.85, Carriage of Automobiles in Containers*, dated July 3, 1989.

- STP 2-1.112, *Marine Terminals, 29 CFR Part 1917 – Final Rule*, dated September 9, 1983.

Question 2: Do OSHA regulations, specifically 29 CFR 1910.24, apply to vessels?

Answer: While all of the provisions of 29 CFR 1910.24 apply to fixed industrial stairs on vessels, OSHA exercises its enforcement discretion with respect to the design specification provisions when inspecting permanent fixed stairs on vessels. Thus, OSHA will enforce all of the provisions of 29 CFR 1910.24 with respect to fixed industrial stairs that ***are not*** a permanent part of the vessel (i.e., stairs brought in and installed for use during vessel construction, repair or overhaul to support worker access to the vessel or within the vessel). In addition, OSHA will enforce 29 CFR 1910.24(a), (b), (f) and (h) with respect to fixed stairs that ***are*** a permanent part of the vessel, since these provisions address the condition and use of fixed stairs. However, if fixed stairs that ***are*** a permanent part of the vessel, comply with the design specifications discussed below, OSHA will not issue citations regarding design specification provisions in 29 CFR 1910.24(c), (d), (e), (g) and (i).

Design specifications for vessels (including fixed stairs) are addressed on U.S. "Inspected" vessels by Coast Guard regulations (46 CFR), on foreign flag vessels by foreign standards and various international vessel classification society rules (e.g., Bureau Veritas-France, Nippon Kaiji Kaokai-Japan, Lloyd's Register of Shipping-England), and on "Uninspected" vessels by a variety of standards, recommended guidelines, and established industry practice. Any hazardous conditions that employees are exposed to related to design will be evaluated using the standard, guidance or practice under which the vessel's fixed stairs were designed. For uninspected vessels and commercial uninspected fishing vessels, OSHA regulations are applicable to the working conditions of all workers including crew members as detailed in CPL 02-01-020 (Previously CPL 2-1.20), *OSHA/U.S. Coast Guard Authority Over Vessels*, dated November 8, 1996.

Question 3: Is it true that the 29 CFR Part 1917 standards may apply to operations beyond the outer gate of the terminal?

Answer: 29 CFR Part 1917, *Marine Terminals* standard, may apply to areas outside the terminal gate provided that those adjacent areas and structures are associated with the primary movement of cargo or materials from vessel to shore, or shore to vessel. This includes structures which are devoted to receiving, handling, holding, consolidation, and loading or delivery of waterborne shipments or passengers. It also includes areas devoted to the maintenance of the terminal or equipment used in the terminal. Production or manufacturing areas having their own docking

facilities and located at a marine terminal are excluded from coverage, as are storage facilities directly associated with those production or manufacturing areas.

Question 4: Who has jurisdiction at a "Designated Waterfront Facility" for the movement of cargo, the U.S. Coast Guard or OSHA?

Answer: Section 4(b)(1) of the OSH Act provides that OSHA has no authority over a working condition if another federal agency has a regulation dealing with that working condition. Pursuant to 33 U.S.C. Section 1231, a provision of the Ports and Waterways Safety Act, the Coast Guard has promulgated regulations (33 CFR Part 126) dealing with working conditions for the loading and discharging of vessels at "designated waterfront facilities" involving the handling and storage of "dangerous cargo," "designated dangerous cargo," or "cargo of a particular hazard."

Further, pursuant to this same section, the Coast Guard has promulgated regulations (33 CFR Part 154) for working conditions involving facilities capable of transferring oil or other hazardous liquids or gases, in bulk, to or from a vessel (see 29 CFR Part 1917.1(a)(1)(i)). If the cargo handled at the "designated waterfront facility" is of the type specified in these Coast Guard regulations (33 CFR Parts 126 and 154), then OSHA authority is preempted with respect to those hazards addressed by those regulations (e.g., fire, explosion and toxic hazards).

NOTE: Before making any determination concerning these jurisdictional issues, CSHOs should consult with OSHA's National Office (Directorate of Enforcement Programs; Office of Maritime Enforcement). It is noted that OSHA is preempted only at "designated waterfront facilities" used solely for operations involving the bulk storage, handling and transfer of liquids and gases or cargo listed in 33 CFR Part 126 or Part 154; any other working conditions at the facility are subject to OSHA regulation (such as activities related to production, manufacturing, construction, ship repair including tank cleaning operations, and the movement of general cargo).

Question 5: Is the foot of the gangway the point of separation between the 29 CFR Part 1917 *Marine Terminals* standard and the 29 CFR Part 1918 *Longshoring* standard?

Answer: The longshoring rule applies to all activities related to cargo handling aboard a vessel, and the gangway is considered to be part of the vessel. Therefore, when an employee steps onto the foot of the gangway, 29 CFR Part 1918 applies. Conversely, when an employee steps onto the pier or dock from the gangway, 29 CFR Part 1917 applies. Ship-to-shore/shore-to-ship cargo transfer and handling operations accomplished shore-side are covered by the *Marine Terminals* standard (29 CFR Part 1917).

Question 6: Does the location of the crane being used to load or discharge a vessel determine which standard (29 CFR Part 1917 or 29 CFR Part 1918) applies for operations pertaining to that crane?

Answer: For shore-based cranes the *Marine Terminals* standard (29 CFR Part 1917) applies, including all lifting device-specific aspects of such transfers. For cranes located on a vessel the *Longshoring* standard (29 CFR Part 1918) applies, including all lifting device-specific aspects of such transfers.

Question 7: Which standard is applicable to an employee standing on top of a container aboard a ship when the employee is attached to a shore-based crane's spreader as part of a fall arrest system?

Answer: As soon as the employee steps off of the spreader and onto the containers, the 29 CFR Part 1918 standards are applicable. When the employee is on the spreader (i.e., cage or guarded riding platform), the 29 CFR Part 1917 standards are applicable.

Question 8: A "loci" is a piece of powered equipment that pushes or pulls train cars along the tracks in a marine terminal. A wide variety of "loci" vehicles are in use from older small yard type locomotives, to newer steel and auxiliary rubber tire spotting engines that can drive onto and off of the tracks. Are "loci" vehicles considered to be powered industrial trucks under 29 CFR Part 1917, and, if so, what training requirements apply for "loci" operators?

Answer: The "loci" vehicles are powered industrial trucks covered under 29 CFR 1917.43(a) which states, "*Applicability*. This section applies to every type of powered industrial truck used for material and equipment handling within a marine terminal." 29 CFR 1917.1(a)(2) lists the 29 CFR Part 1910 standards that apply to marine terminals and includes (under 29 CFR 1917.1(a)(2)(xiv)) 29 CFR 1910.178(l), the requirements for powered industrial truck operator training. Therefore, "loci" vehicle operators must meet the general requirements of 29 CFR 1917.27(a)(1), *Qualifications of machinery operators*, and the specific training requirements for powered industrial trucks in 29 CFR 1910.178(l) that apply to "loci" vehicles.

Additionally, it is noted that 29 CFR 1910.178(a)(2), which requires that newly acquired powered industrial trucks meet the requirements of the American National Standards Institute (ANSI) B56.1-1969, was not adopted into OSHA's *Marine Terminals* standard under 29 CFR 1917.1(a)(2). Therefore, powered industrial trucks operated in the marine cargo handling industry are covered by 29 CFR 1917.43, *Powered Industrial Trucks*, which does not require compliance with ANSI B56.1-1969.

Question 9: What regulations, 29 CFR 1917.45 *Cranes and derricks*, or 29 CFR 1917.120 *Fixed stairways*, apply to steps and stairways of container gantry cranes?

Answer: Stairways on cranes that are an integral part of the machinery are exempted from the fixed stairway regulations of 29 CFR 1917.120. According to the definition at 29 CFR 1917.120(a), "Fixed stairway means interior and exterior stairs serving machinery, tanks and equipment, and stairs to and from floors, platforms or pits. The term does not apply to stairs intended only for fire exit purposes, to articulated stairs (the angle of which changes with the rise and fall of the base support) or to stairs forming an integral part of machinery." The stairs on a container gantry crane are an integral part of the machinery. The OSHA standard that applies to marine terminal cranes is 29 CFR 1917.45, and 29 CFR 1917.45(f)(4) specifically addresses crane access.

Question 10: 29 CFR 1917.45(e)(2) states, "Crane hooks shall be latched or otherwise secured to prevent accidental load disengagement." Are all crane hooks required to have safety latches?

Answer: 29 CFR 1917.45(e)(2) requires that crane hooks be latched or otherwise secured to prevent accidental load disengagement. The longshoring regulations do not require safety latches on hooks for ship's gear. Section 29 CFR 1918.81(b) does, however, require handling bridles which remain attached to the hoisting gear during successive draft picks to be attached by shackles or some other positive means to prevent accidental disengagement.

Question 11: 29 CFR 1917.45(f)(1)(ii) states, "After October 3, 1984, overhead bridge and container gantry crane operating control levers shall be self-centering so that they will automatically move to the 'off' position when the operator releases the control." Are all cranes required to have self-centering controls that automatically move to the "off" position when the operator releases the control?

Answer: 29 CFR 1917.45(f)(1)(ii) states, "...overhead bridge and gantry crane operating control levers shall be self-centering so that they will automatically move to the off position when the operator releases the control." This requirement only applies to shore-based overhead bridge and gantry cranes involved in cargo handling operations, not all cranes.

Question 12: 29 CFR 1917.50 *Certification of marine terminal material handling devices*, paragraph (a) states, "The employer shall not use any material handling device listed in paragraph (c) of this section until he has ascertained that the device has been certified, as evidenced by current and valid documents attesting to compliance with the requirements of paragraph (b) of this section." Does OSHA require cranes at construction sites to be certificated?

Answer: There are no Federal OSHA regulations currently requiring the certification of cranes, derricks, or other material handling devices used solely in construction operations (covered under 29 CFR Part 1926), or used solely in general industry operations (covered under 29 CFR Part 1910). The owner must, however, maintain a record of inspections.

Question 13: 29 CFR 1918.2 *Definitions*, states, "Fall Hazard means the following situations: (1) Whenever employees are working within three feet (0.91 m) of the unprotected edge of a work surface…" What does within three feet mean? Is it the employee's center of gravity?

Answer: No, the "within three feet" does not refer to the employee's center of gravity. It means that, when any part of an employee's body, including extremities, comes within three feet (0.91 m) of an unprotected edge, a fall hazard exists.

Question 14: Are there safety rules or regulations outlining the safety of personnel while using rolling gangways?

Answer: Gangways are covered by OSHA regulations for longshoring operations under 29 CFR Part 1918, Subpart C – *Gangways and Other Means of Access*.

The following documents contain useful safety and design information pertaining to rolling gangways on vessels:

- International Labor Organization (ILO) Publication – *ILO Code of Practice, "Safety and Health in Ports," 2005-Section 3.4, Shore Side Access to Ships;*

- Det Norske Veritas (DNV) Standard - NS 6249;

- International Standards Organization - ISO 5488; and

- U.S. Coast Guard Safety Alert – *Gangplanks A Vital Area For Safety*.

Question 15: Prior to the changes to the *Longshoring* standard on July 25, 1997, 29 CFR 1918.32(b) applied to working on top of containers. Does this rule still apply to container top safety?

Answer: 29 CFR 1918.32(b) was revised to address technology and work practice changes since OSHA's original *Longshoring* standard was adopted. This paragraph does not apply to employees working on top of intermodal containers, whether above or below deck, because such work is now covered by 29 CFR 1918.85(j), *Fall protection*. Section 29 CFR 1918.32(b) applies when employees are working non-containerized cargo and are exposed to falls of more than eight feet (2.4 m) as defined in the term "fall hazard." The term "fall hazard" is defined in the definitions section (29 CFR 1918.2). It requires that the edge of the working surface be guarded by a safety net or that other means of fall protection (such as guardrails or fall arrest systems) be used to prevent employee injury.

NOTE: It is essential that employers satisfy the intent of this provision and do not merely appear to comply with it. Safety nets that are rigged are often allowed to become very slack, and have in some cases been secured only at their top ends. The improper rigging of safety nets compromises or even removes the protection provided to falling employees. This paragraph distinguishes between the purpose and use of vertical safety nets, which rise at right angles at the perimeter of a work surface to prevent employees from falling, and trapeze nets, which are designed to be placed horizontally below a raised work surface to prevent falling employees from striking the surface below.

Question 16: Employees often encounter fall hazards while working general cargo in the holds of break-bulk ships. When there is no feasible way to provide fall protection as required by 29 CFR 1918.32(b) (e.g., rig safety nets or lines), can spotters or signal persons be used to warn employees when they are approaching the edge?

Answer: When there is no feasible way to rig physical barriers or provide fall protection, as required by 29 CFR 1918.32(b) when working non-containerized cargo (i.e., break bulk or general cargo), employers must change the operational procedure and do everything possible to minimize the hazard. Spotters may be the only feasible answer in certain situations. Employers must ensure that when using perimeter monitors (i.e., spotters), a person is to be specifically

designated to perform that function, and employees must be aware of who is the designated signal person(s) and what signal system will be used.

Question 17: The covering of hatches aboard a vessel is addressed by 29 CFR 1918.43(j). Under what conditions can hatches aboard ship be covered by means other than hatch covers and night tents?

Answer: 29 CFR 1918.43(j) requires that hatch covers or night tents be used to cover hatches, and that any covering that only partially covers a hatch, such as alternating hatch covers or dunnage strips, may not be covered by a tarpaulin. The reason for this prohibition is that employees could fall through the tarpaulin and partial covering. However, 29 CFR 1918.43(j) was changed to allow for an exception: tarpaulins may be used to cover an open or only partially covered hatch, if they are used to reduce dust during bulk cargo loading and if positive means, such as barricades with placards, have been taken to ensure that employees do not walk on the tarpaulin. Verbal warnings, instructions or placards alone will not satisfy this provision.

Question 18: 29 CFR 1918.51(b) *General Requirements (vessel's cargo handling gear),* states, "... Any gear that is found unsafe shall not be used until it is made safe." 29 CFR 1918.55(a) *Cranes (forming part of a vessel's permanent equipment),* states, "Cranes with a visible or known defect that affects safe operation shall not be used." Who has responsibility under 29 CFR Part 1918 for compliance affecting equipment used, but not owned by, or under the control of the employer?

Answer: If equipment on a vessel or other equipment or facilities to be used by an employer, but not owned by the employer or under his/her control, does not meet the requirements of 29 CFR Part 1918, it is the responsibility of the employer not to permit his/her employees to utilize such equipment or facilities. While it is not the responsibility of the employer to repair defective equipment not under his/her control, it is the employer's duty to only use equipment that meets the requirements of 29 CFR Part 1918.

Question 19: 29 CFR 1918.55(c)(2) and 29 CFR 1917.45(g)(11) state, "Limit switch bypass systems shall be secured during all cargo operations. Such bypass systems shall not be used except in an emergency or during non-cargo handling situations such as stowing cranes or derricks or during maintenance and repairs." What does OSHA mean by emergency? Can you provide additional details regarding the use of bypass systems? Does readjustment of crane limit switches during cargo operations constitute using the bypass system?

Answer: Emergency, in the context of marine cargo handling operations, means an unexpected situation or sudden occurrence of a serious and urgent nature that demands immediate action: for example, if an employer needed to reach a seriously injured employee. It does not mean finishing the loading or discharge of cargo from the ship at a specific time or any attempt to complete a cargo handling operation on schedule.

29 CFR 1918.55(c)(2) requires that limit switch bypass systems must be secured during all cargo operations (i.e., cannot bypass the limit switch(es)). An example of a limit switch is the anti-two-blocking device. Limit switches cannot be safely bypassed during cargo operations.

However, there are three specific *non-cargo handling operations* situations where such bypass systems may be activated: during an emergency, while performing repairs, or when stowing cranes or derricks. To provide additional safeguards, anytime a limit switch is bypassed, it must be done under the direction of an officer of the vessel. Similar provisions under 29 CFR 1918.55(c)(2) are applicable to shore-based cranes in the final rule for marine terminals, 29 CFR 1917.45(g)(11).

There is one unique shore-based situation, where the limit switches of cranes can be readjusted during cargo handling operations without an adverse impact on worker safety. Specifically, when a container ship with an unusually high deck load causes the upper limit switches to activate before the top tier of containers can be worked, the limit switches can be readjusted if the margin of safety provides enough extra height to allow readjustment. While readjustment of the limit switch may be allowable under these narrow circumstances, bypassing the limit switch is **not**. To provide additional safeguards, readjusting limit switches may only be done under the direction of a crane mechanic. The language regarding adjustments of limit switches is in 29 CFR 1917.45(g)(11).

Question 20: 29 CFR 1918.62(g)(1) and 29 CFR 1917.42(g)(1) state, "Slings and nets or other combinations of more than one piece of synthetic webbing assembled and used as a single unit (synthetic web slings) shall not be used to hoist loads in excess of the sling's rated capacity." How is the safe working load for synthetic fiber rope slings determined? What is the minimum safety factor allowed for synthetic fiber rope and web slings?

Answer: Determination of the safe working load for synthetic fiber rope slings is based on the following criteria:

- Unless otherwise recommended by the manufacturer, when synthetic fiber ropes are substituted for fiber ropes of less than three inches (7.62 cm) in circumference, the synthetic fiber rope shall be of equal size, as required by 29 CFR 1918.62(d)(3)(i) and 29 CFR 1917.42(g)(1).

- Unless otherwise recommended by the manufacturer, when synthetic fiber ropes are substituted for fiber ropes of three inches (7.62 cm) or more in circumference, the size of the synthetic rope shall be determined by the formula provided in 29 CFR 1918.62(d)(3)(i) and 29 CFR 1917.42(g)(1).

For both of these criteria a safety factor greater than 5 is ensured since the breaking strength of the synthetic rope is more than the breaking strength of the size of manila rope that would otherwise be required.

NOTE: For longshoring, 29 CFR 1918.62(d)(2), if the manufacturers' recommended safe working load ratings and use ratings are not available, Tables 3A and 3B of Appendix II to 29 CFR Part 1918 shall be used to determine the safe working load of synthetic fiber rope and of synthetic rope slings.

Question 21: 29 CFR 1918.62(i)(2) states, "Screw pin shackles provided by the employer and used aloft, except in cargo hook assemblies, shall have their pins positively secured." What is the meaning of "aloft?"

Answer: The intent of 29 CFR 1918.62(i)(2) is to require mousing (or seizing) of screw pin shackles when the shackle is situated in an inaccessible place, that is, aloft. Aloft, in the maritime industry, means on or in the higher rigging of the ship. This regulation is not to be applied to the cargo hook assembly or to any stevedoring or other gear which may be hanging from the hook or from the falls.

Question 22: 29 CFR 1918.65(d)(4) and 29 CFR 1917.43(f)(3) require that after July 26, 1999, bulk cargo-moving vehicles be equipped with rollover protection. Can previously used equipment which cannot be fitted with rollover protection continue to be used?

Answer: No, the use of equipment without rollover protection would be a violation of 29 CFR 1918.65(d)(4) or 29 CFR 1917.43(f)(3).

Question 23: What is an "approved truck" under 29 CFR 1918.65(e) and 29 CFR 1917.43(d), and can the 29 CFR 1910.178 *Powered industrial trucks* standard be applied?

Answer: As defined in 29 CFR 1918.65(e)(1) and 29 CFR 1917.43(d)(1), an approved power-operated industrial truck is one listed as approved for the intended use by a nationally recognized testing laboratory (see 29 CFR 1910.7). 29 CFR 1918.65(e)(2) and 29 CFR 1917.43(d)(2) require such trucks to bear a label or other indication that the truck is so approved. 29 CFR 1918.65(e)(3) and 29 CFR 1917.43(d)(3) require that in hazardous atmospheres only approved trucks may be used. In making a compliance determination of the applicable industrial truck designation (e.g., D, DS, DY, E, ES, EE, EX, G, GS, LP, LPS) for the intended use under 29 CFR 1918.65(e) and 29 CFR 1917.43(d), 29 CFR 1910.178 *Powered industrial trucks* will be utilized.

Question 24: 29 CFR 1918.65(f) and 29 CFR 1917.43(c). A number of facilities in the marine cargo handling industry operate powered industrial trucks with audible backup alarms inside vessel holds. Does OSHA allow the installation of a strobe light in addition to an audible backup alarm on a powered industrial truck in the marine cargo handling industry?

Answer: 29 CFR 19l8.65(b)(1) and 29 CFR 1917.43(b)(1) prohibit modifications that might affect the vehicle's capacity or safety without either the manufacturer's prior written approval or the written approval of a professional engineer experienced with the equipment who has consulted with the manufacturer, if available. Therefore, provided the approval is obtained in accordance with these provisions, the installation of a strobe light on a powered industrial truck would be allowed. While the question does not contemplate the removal/disabling of audible backup alarms, 29 CFR 1918.65(f) and 29 CFR 1917.43(c)(5) prohibit safety devices from being removed or disabled absent the written approval discussed above.

Question 25: 29 CFR 1918.66(b)(3)(ii) and 29 CFR 1917.45(d)(2) state, "No crane or derrick having a visible or known defect that affects safe operation shall be used." Can

structural discontinuities or damage on cargo handling gear, such as a crane or derrick boom, be safely concealed by covering the damaged areas with a filler material such as Bondo®?

Answer: Concealing structural damage on cargo handling gear constitutes an extremely serious and unsafe occupational hazard, and is an unacceptable practice.

Question 26: What regulations apply to the protection of personnel being hoisted on a guarded riding platform in the marine cargo handling industry, 29 CFR 1918.66(c), 29 CFR 1917.45, or 29 CFR 1918.85? Do the requirements of 29 CFR 1918.85(j)(1)(i) and (ii) prohibit employers from assigning longshore workers to perform work on top of containers in the ordinary course of production?

Answer: The OSHA standard that applies when employees are being hoisted in a guarded riding platform by a shore-based crane is 29 CFR 1917.45(j). The *Longshoring* standard, 29 CFR 1918.66(c), applies when hoisting personnel with a crane that is placed on a vessel. The other standard referenced, 29 CFR 1918.85, does not apply to the hoisting of employees; it does apply to fall protection systems when employees are working outside of the hoisting platform on top of intermodal containers aboard vessels.

The requirements of 29 CFR 1918.85(j)(1)(i) and (ii) restrict but do not prohibit employers from assigning longshore workers to perform work on top of intermodal containers. Employers may assign employees to work on top of intermodal containers to perform a necessary function that cannot be eliminated by the use of positive container securing devices. Under the conditions of this exception, each employee working outside of the guarded platform on top of an intermodal container must be protected from fall hazards by a fall protection system meeting the requirements of 29 CFR 1918.85(k).

Question 27: 29 CFR 1918.66(d)(3) and 29 CFR 1917.45(k)(3) state, "Any defects found during such inspections which may create a safety hazard shall be corrected before further equipment use. Repairs shall be performed only by designated persons." What are the acceptable methods for reconditioning wire rope sheaves on cranes and derricks? Can defective sheaves be reconditioned using portable hand tools?

Answer: For sheave grooves that can be reconditioned (such as iron, steel, and manganese steel), such reconditioning must be performed within the design tolerances allowed for by the manufacturer. The method of reconditioning must provide for the proper groove size, correct groove contour, proper surface condition, and consistent roundness (concentricity) of the sheave. Turning sheave grooves (re-machining) is an acceptable method of reconditioning, provided that the original manufacturer's repair procedures and specifications are followed. Grinding defective sheave grooves with portable hand tools is not an acceptable method of reconditioning sheaves.

Question 28: When conducting a visual inspection of a sheave on a crane or derrick, how is this done and what needs to be looked at? Should the wire rope also be looked at during the visual inspection of the sheaves? When should a sheave be replaced?

If a visual inspection of a sheave on a crane or derrick identifies a condition that has not been previously assessed by the employer, such as corrugation or an unusual wear pattern on the sheave, then a sheave gauge (groove gauge) must be used to accurately assess the wear pattern and the amount of wear to the sheave. Although corrugation (in and of itself as a surface condition) may only cause accelerated wear of the wire rope, it is an indicator that more significant and possibly unsafe sheave component wear conditions may be present.

When excessive component wear is found to exist on a sheave, particular attention should be given to inspecting for distortion and damage to the core of the wire rope. For instance, a wear pattern that is deep and narrow (resulting in a smaller diameter groove) can pinch the wire rope, cause permanent wire rope distortion, and crush the wire rope core. Also, a sheave wear pattern that forms a progressively larger groove diameter may provide insufficient groove contour support (groove diameter too large for the wire rope diameter), cause the wire rope to flatten and become distorted, and result in an increase of the bending fatigue of the wire rope.

Core failure can be checked by diameter measurement (diameter is reduced with core deterioration), or by length of lay measurement (core damage can result in an increase in lay length). Wire ropes that do not meet applicable requirements must be immediately removed from service. A sheave with excessive component wear must be replaced or reconditioned when the wire rope is replaced.

Question 29: Under what conditions is a cargo handling crane used in longshoring operations, 29 CFR 1918.66(f), and marine terminals, 29 CFR 1917.46, exempt from the requirements for a load indicating device (LID)? Are all cranes and derricks used to handle cargo in a marine terminal required to have load indicating devices (LIDs) as required by 29 CFR 1917.46? Specifically what type of certification is required by 29 CFR 1918.11 for cranes which are permanently mounted on a barge and used in longshoring operations?

Answer: For longshoring operations, 29 CFR 1918.66(f) addresses LID requirements for cranes other than vessel's gear. Cranes may be required to have a LID, derricks are not. Any crane, other than vessel's gear, used in longshoring operations, including barge-mounted cranes, may be required by 29 CFR 1918.66(f) to have a LID. 29 CFR 1918.66(f) LID requirements do not apply to cranes and derricks forming part of a vessel's permanent equipment.

For marine terminals, 29 CFR 1917.46 addresses LID requirements for cranes. Cranes may be required to have a LID, derricks are not. Any crane at a marine terminal that is used to move or handle cargo may be required by 29 CFR 1917.46 to have a LID.

Both 29 CFR 1918.66(f)(1)(viii) and 29 CFR 1917.46(a)(1)(viii) requirements for LIDs do not apply to:

- Trolley equipped bridge type or overhead type cranes used to handle containers;
- While handling bulk commodities or cargoes by means of clamshell bucket or magnet; and

- While used to handle or hold hoses in connection with the transfer of bulk liquids or other hose handled products.

Both 29 CFR 1918.66(f)(1)(viii)(D) and 29 CFR 1917.46(a)(1)(viii)(D) provide an exception for cranes that must otherwise meet the LID requirements, if all of the following conditions are met:

- The crane must be used exclusively to handle cargo or equipment the total actual gross weight of which is known by means of marking of the unit or units hoisted;
- Such total actual gross weight must never exceed 11,200 pounds; and
- The load is less than the rated capacity of the crane at the maximum outreach that is possible at the time.

Barge mounted cranes used to move cargo during longshoring operations must comply with the certification requirements of 29 CFR 1918.11. Cranes mounted on barges which do not have a U.S. Coast Guard Certificate of Inspection (i.e., "Uninspected Vessels") require an OSHA-71 certificate issued by an OSHA agency accredited for this purpose pursuant to 29 CFR Part 1919 (29 CFR 1918.11(c)). Cranes mounted on barges which have a U.S. Coast Guard Certificate of Inspection (i.e., "Inspected Vessels") are deemed to meet the cargo gear certification requirements of 29 CFR Part 1918 (29 CFR 1918.11(b)). More detailed guidance is available in CPL 02-01-039, *Enforcement of Cargo Gear Regulations and the Requirements for Gear Certification in the Maritime Program*, March 24, 2003.

Question 30: 29 CFR 1918.69 *Tools*, and 29 CFR 1917.51 *Hand Tools*, do not appear to cover guards on portable grinders. Are guards required on portable grinders?

Answer: Guards on portable grinders are not covered in 29 CFR 1918.69 *Tools*, or 29 CFR 1917.51 *Hand Tools*, however, the lack of a guard could be grounds for a General Duty Clause violation. Portable hand held tools are required to be maintained in safe operating condition, and employers may not permit the use of visibly unsafe tools. All tools must be equipped with switches of a type that must be manually held in the "ON" position. Guards are specifically required on portable hand held circular saws (see FIRM, Chapter III, Paragraph C.2.c).

Question 31: 29 CFR 1918.81 *Slinging*, paragraph (b), states, "Cargo handling bridles, such as pallet bridles, which are to remain attached to the hoisting gear while hoisting successive drafts, shall be attached by shackles, or other positive means shall be taken to prevent them from being accidentally disengaged from the cargo hook." Are all crane hooks required to have safety latches?

Answer: The longshoring regulations do not require safety latches on hooks for ship's gear. 29 CFR 1918.81(b) does, however, require handling bridles which remain attached to the hoisting gear during successive draft picks to be attached by shackles or some other positive means to prevent accidental disengagement. Also, 29 CFR 1918.62(i)(2) requires mousing (or seizing) of screw pin shackles when the shackle is situated in an inaccessible place that is aloft. The regulations for marine terminals, Section 29 CFR 1917.45(e)(2), require that crane hooks be latched or otherwise secured to prevent accidental load disengagement.

Question 32: 29 CFR 1918.81(k) and 29 CFR 1917.13(h) state, "The employer shall require that employees stay clear of the area beneath overhead drafts or descending lifting gear." When necessary, can employees enter the area beneath descending overhead drafts or lifting gear?

Answer: No, employees cannot enter the area beneath overhead drafts or descending lifting gear. However, employees can approach drafts or lifting gear once the draft or gear is at working level to maneuver and adjust as necessary.

Question 33: For longshoring operations, what is the difference between a Qualified Person in 29 CFR 1918.85 (Footnote 7) and a Designated Person in 29 CFR 1918.2?

Answer: 29 CFR 1918.2 *Definitions*, states, "Designated person means a person who possesses specialized abilities in a specific area and is assigned by the employer to do a specific task in that area." For example, the gear man would be the appropriate person to perform the required gear inspections. The safety person or perhaps an experienced foreman could serve as the designated person for a required visual inspection of the vessel's gear prior to the use of the gear.

Under Footnote 7, found in 29 CFR 1918.85, a "Qualified Person means one with a recognized degree or professional certificate and extensive knowledge and experience in the subject field who is capable of design, analysis, evaluation and specifications in the subject work, project, or product." For example, the employer will need to rely on manufacturer's certification or will need to hire a Qualified Person to perform the required certification of a fall protection system.

Question 34: Regarding 29 CFR 1918.85 *Containerized cargo operations,* and 29 CFR 1917.71 *Terminals handling intermodal containers or roll-on roll-off operations,* what is OSHA's position regarding the tandem lifting of two empty containers that are vertically connected by semi-automatic twistlocks (known as Vertical Tandem Lifts (VTLs))?

Answer: The lifting of two empty intermodal containers that are vertically coupled by semi-automatic twistlocks (i.e., "VTLs") is considered to be in compliance with OSHA requirements only when all of the following eight provisions are met:

- The containers must be inspected for visible defects prior to hoisting, and damaged containers may not be hoisted in tandem [Ref: 29 CFR 1917.71(g), 29 CFR 1918.85(d)];
- The employer must ensure that both containers are empty [Ref: 29 CFR 1917.71(b)(1), 29 CFR 1918.85(b)(1)];
- The weight of the containers when empty must be permanently marked on the containers [Ref: 29 CFR 1917.71(a)(1), 29 CFR 1918.85(a)(1)];
- The twist locks must all operate in the same manner (be uniform) and they must have a positive, verifiable locking system;

- The load may not exceed the capacity of the crane [Ref: 29 CFR 1917.71(c), 29 CFR 1918.85(c)];

- The top container must be hoisted by the top fittings and the lifting forces must be applied vertically from at least four (4) such fittings [Ref: 29 CFR 1917.71(f)(1)(i), 29 CFR 1918.85(f)(1)(i)];

- The employer must have available for inspection, documentation from the manufacturer which verifies the capacities of the twist locks and corner castings [Ref: 29 CFR 1917.71(f)(1)(iv), 29 CFR 1918.85(f)(1)(iv)]; and

- The employer must direct employees to stay clear of the area beneath the suspended containers [Ref: 29 CFR 1917.71(d)(2), 29 CFR 1918.85(e)].

Tandem vertical lifts not in compliance with these provisions will be cited by OSHA.

NOTE: OSHA published a proposed rulemaking on September 16, 2003, titled "Longshoring and Marine Terminals; Vertical Tandem Lifts; Proposed Rule" (68:54297). This proposed rulemaking specifically addresses the handling of two vertically connected containers using semi-automatic twistlocks. A final rulemaking, when published, could supercede the answer to this Question and Question number 35.

Question 35: Is it permissible to lift more than two flatrack containers at one time, using either semi-automatic twistlocks or internal locking mechanisms? In lifting flatrack containers either with semi-automatic twistlocks or internal locking mechanisms, are there any requirements that are similar to those specified in the answer to Question 34 (above) of this directive?

Answer: When connected by semi-automatic twistlocks, only two empty flatrack containers with their end frames folded may be lifted as a vertical tandem lift (VTL). Although VTL lifts of flatrack containers are not specifically mentioned in the Answer to Question 34 of this instruction, provisions that are applicable to VTL lifts of empty containers also apply to two empty flatrack containers with their end frames folded and connected by semi-automatic twistlocks.

When connected with internal locking mechanisms (i.e., built-in connectors that are designed for lifting), the number of empty flatrack containers with their end frames folded that may be lifted cannot exceed the manufacturer's specifications and must be lifted in accordance with the manufacturer's instructions. With the exception of the twist lock operation and design criteria (bullet no. 4), and the twistlock and corner casting documentation requirements (bullet no. 7), all of the provisions from the answer to Question 34 of this instruction apply to the lifting of multiple empty flatracks using internal locking mechanisms.

Multiple empty flatrack containers with their end frames in the upright position are not allowed to be lifted using either semi-automatic twistlocks or internal locking mechanisms, because the lack of sides and roof lessen the stability and strength of the container.

NOTE: OSHA published a proposed rulemaking on September 16, 2003, titled "Longshoring and Marine Terminals; Vertical Tandem Lifts; Proposed Rule" (68:54297). This proposed rulemaking specifically addresses the handling of two vertically connected containers using semi-automatic twistlocks. A final rulemaking, when published, could supercede the answer to Question 34 and this Question.

Question 36: Will OSHA's 29 CFR 1918.85 and 29 CFR 1917.71 intermodal shipping container requirements also apply to U.S. Navy vessels?

Answer: Yes, but only in those cases where non-military employees are used to handle containers (i.e., government civilian employees or private sector civilian employees).

Question 37: OSHA permits less-than-vertical lifts on ISO "closed box containers" under certain conditions as specified in 29 CFR 1918.85(f)(1)(i) and 29 CFR 1917.71(f)(1)(i). Why not permit less-than-vertical lifts on open top containers? Do the standards allow the lifting of a 40 foot open top or flat rack container with a 40 foot pipe spreader?

Answer: A "closed box container" is one that has a solid roof which adds to the rigidity of the container longitudinally to help prevent it from folding. Open top and flat rack containers with only corner posts do not have the added rigidity and, therefore, cannot be lifted less than vertical. An open top or flat rack container cannot be lifted with a single bar or pipe spreader, since such a lift would be impractical and hazardous to make with a single bar or pipe spreader, and would be considered a violation.

Question 38: Under what conditions are less than vertical lifts (i.e., lifting forces applied from the crane/derrick to the container fittings) of intermodal containers allowed?

Answer: 29 CFR 1918.85(f) addresses the lifting of intermodal containers. It requires that containers be handled using lifting fittings or other arrangements specified in 29 CFR 1918.85(f)(1) and (2) unless the container is so damaged as to make special handling necessary. 29 CFR 1918(f)(1)(i) specifies that the hoisting of loaded containers 20 or more feet in length be done as follows: when hoisted by the top fittings, the lifting forces are applied vertically from a minimum of four fittings. Lifts that are less than vertical are permitted only when: the container is an International Standards Organization (ISO)[1] "closed box container" (other types of containers such as flat racks and open top containers must be hoisted vertically); the condition of the box is sound; the speed of hoisting and lowering is moderated when a heavily loaded container (i.e., loaded to within 20 percent of the container's rated capacity) is encountered; the lift angle is at 80 to 90 degrees; the distance between the lifting beam and load is at least 8 feet 2.4 inches (2.5 meters); and the length of the spreader beam is at least 16.3 feet (5 meters) for a 20-ft container and 36.4 feet (11 meters) for a 40-ft container.

[1]The ISO is a worldwide federation of national standards bodies whose mission is to promote the development of international standards to reduce technical barriers to trade. The ISO standards are consensus documents and represent voluntary guidelines.

Ports or facilities that rely mainly on container gantry cranes generally do not perform non-vertical lifting of containers. Non-vertical lifting of containers is generally performed using mobile cranes, portal gantry cranes or vessel's gear. A non-vertical lift is made by connecting four wires (or chain legs) either directly to the crane's hook or to a spreader bar hung from the crane. A spreader bar is a simple steel beam with two lengths of chain or cable on either end and a hook or other fitting on the chain legs to attach to the corner fittings of a container. Spreader bars are made shorter than the container, both for ease of maneuvering in tight lifts and to avoid snagging containers and ship parts or rigging. The longer the spreader bar, the more nearly vertical the lift on the container. A single wire crane also can use a box spreader to lift a container. A box spreader is essentially the same device that a container gantry crane uses to lift containers. However, a box spreader is heavier than a simple spreader bar. In addition, box spreaders may introduce additional safety risks for longshoremen working on container tops. For example, the use of box spreaders requires additional maneuvering to position and secure the spreader to the container, thus increasing employee exposure to falls.

Question 39: If the vessel is equipped with its own container gantry crane, would the fall protection requirements found in 29 CFR 1918.85(j) apply?

Answer: Yes, 29 CFR 1918.85(j) makes no distinction between a vessel crane or a shore-based crane, and the hazard to the employees is the same whether the container gantry crane is located on a vessel or on the shore.

Question 40: 29 CFR 1918.85(j)(1) states, "After July 26, 1999, where a container gantry crane is being used to handle containers, the employer shall ensure that no employee is on top of a container. Exception: An employee may be on top of a container only to perform a necessary function that cannot be eliminated by the use of 'positive container securing devices.'" What happens after July 26, 1999 if a vessel that does not have Positive Container Securing Devices (PCSDs) wants to load or discharge containers under a container gantry crane?

Answer: If the containers are loaded or unloaded under a container gantry crane without the vessel having PCSDs (e.g., hanging stackers, semi-automatic twist locks (SATLs), above deck cell guides), the employer would be in violation of the standard. One alternative to avoid a violation is to use cargo handling gear other than a container gantry crane. For example, employers could work the vessel at a different location through the use of shore-based mobile or portal cranes provided that employees working on top of the containers are protected from fall hazards by a fall protection system meeting the requirements of 29 CFR 1918.85(k). Exceptions to this 29 CFR 1918.85(j)(1) rule may include performing job tasks such as removing jammed SATLs, hooking up or detaching over-height containers, placing and removing bridge clamps, and during emergency rescue procedures. When these "exceptions" are being performed, employees must be protected from falling by using approved fall protection devices meeting the requirements of 29 CFR 1918.85(k).

Question 41: Some of the modern container vessels have containers stacked five or more high above deck. Employees are able to unlock twistlocks from the deck of the vessel through the use of long poles, provided that the containers are four high or less. The arrival of vessels with containers stacked five or more high necessitates unlocking the

containers from the top, as the poles will not reach and longer poles may cause a greater safety hazard such as dropping the longer poles on fellow employees. Will the employees be permitted on top with fall protection?

Answer: With regard to the difficulty of providing a safe means that would completely eliminate the need for employees to go on top of a container to safely unlock those stacked five or more high above deck, paragraph 29 CFR 1918.85(j)(1) provides an exception with some examples listed in Footnote 6. For containers stacked five or more high, the use of a longer lashing pole while standing on deck would prove difficult to control and would create a greater hazard for the employees working on deck than if they were allowed to "go aloft" onto the top of the container to unlock them. If the employer can show that there are no alternative feasible means to allow employees to safely unlock these containers without going "aloft," then the exception would apply. Employees working on top of containers under this exception are required by 29 CFR 1918.85(j) to be protected by a fall protection system meeting the requirements of 29 CFR 1918.85(k). Whenever a new procedure or positive container securing device is developed that eliminates the need for employees to go on top of containers to perform such an operation, it must be used since it will provide an alternative feasible means and the exception would no longer apply.

NOTE: Employees working on top of containers under this exception (i.e., Footnote 6 to 29 CFR 1918.85(j)(1)(i)), should be instructed to unlock all twist locks that require unlocking during their first trip to the top of the containers.

Question 42: Many employers and shipping companies contend that it is not feasible to properly lash 20-foot containers <u>below decks</u> without employees being allowed to go on top of the containers to place and remove double-stack cones and similar devices which are essential to the proper stowage of the vessel. Do the 29 CFR 1918.85(j) requirements that no employee is allowed on top of a container, and that positive container securing devices must be used when using a container gantry crane, apply <u>below decks</u>?

Answer: OSHA's revised maritime standards pertaining to containerized cargo operations (29 CFR 1918.85) apply to the handling of containers both above decks and below decks on vessels. The exception provided by 29 CFR 1918.85(j)(1)(i), and the examples listed in Footnote 6, also apply below decks. Employees working on top of containers under this exception are required by 29 CFR 1918.85(j) to be protected by a fall protection system meeting the requirements of 29 CFR 1918.85(k). Whenever a new procedure or positive container securing device is developed that eliminates the need for employees to go on top of containers to perform such an operation, it must be used since it will provide an alternative feasible means and the exception would no longer apply.

<u>20-foot containers loaded into below deck 40-foot container cell guides</u>. There is currently no alternative to the manual placement/removal of double bridge stackers between horizontally adjacent 20-foot containers in the same cell guide. Therefore, for this situation, the placement/removal of double bridge stackers is a legitimate exemption under 29 CFR 1918.85(j)(1). However, this exemption applies only to the placement/removal of those devices for which no alternative means of handling exists. This means that even though employees are allowed to place/remove double bridge stackers under the 29 CFR 1918.85(j)(1) exemption, for

the four corners adjacent to the cell guides, PCSDs such as "hanging stackers" are required to be used. The exposure of workers to fall hazards during container top handling operations is reduced by this requirement of the standard.

Question 43: Under what conditions are employers allowed by the exemption in 29 CFR 1918.85(j)(1) to have workers use personnel cages and safety cages to place or remove container top fittings?

Answer: Personnel cages and safety cages used with a container gantry crane may only be used to place or remove container fittings when the exemption under 29 CFR 1918.85(j)(1) is applicable. Employers using personnel cages and safety cages must comply with all requirements specified under 29 CFR 1917.45(j) for employee transport (See 29 CFR 1918.85(g), *Safe container top access*), and 29 CFR 1918.85(k) for employee fall protection while working. The requirements under 29 CFR 1917.45(j) apply only to the transport of employees to or from container tops, including the transport of employees to and from container tiers of different heights. Each device, such as a safety cage, used to transport an employee(s) by being attached to a container gantry crane spreader (i.e., the spreader picks up the device similar to a container), must have a secondary means of attachment as required by 29 CFR 1918.85(k)(10). "Live" (activated) container gantry crane lifting beams or attached devices, may be used as anchorage points for employee fall protection purposes provided that all requirements of 29 CFR 1918.85(k)(7) are met and the exemption under 29 CFR 1918.85(j)(1) is applicable. Personnel cages and safety cages placed on top of containers may be used as an anchorage point(s) for employee fall protection purposes provided that they meet 29 CFR 1918.85(k) requirements. If the exemption under 29 CFR 1918.85(j)(1) is applicable, then container gantry cranes may be used to place cages on top of containers, otherwise, portal gantry and mobile cranes must be utilized.

Question 44: Are containers "block stowed" below decks on a non-cellular container vessel exempt under 29 CFR 1918.85(j)(1)?

Answer: Non-cellular container vessels (those which do not have container cell guides), including bulk carriers, are often used to transport containers below decks. In order to improve the stowage stability of the containers, and the stability and safety of the vessel itself, the containers are "block stowed," which means that the corner castings of levels, rows and columns are immediately adjacent to each other and may be interlocked together as a single integral block. The block of containers is built from the deck up and must be loaded, stowed, and secured throughout each voyage in accordance with the Cargo Securing Manual (vessels over 500 gross tons) which has been specifically approved for each vessel in accordance with International Maritime Organization (IMO) guidelines (NOTE: U.S. flag vessels comply with these requirements as codified under 46 CFR 90.05-10). The Cargo Securing Manual specifies for each vessel the alternative stowage patterns, maximum stack masses, permissible vertical sequences of masses in stacks, maximum stack heights, and the application of securing devices to properly and safely secure the containers with consideration of possible forces to be induced during transit, and the stability of both the cargo stowage and vessel. Due to container accessibility issues (e.g., container adjacent to a bulkhead, end-to-end/side-by-side stowage results in four adjacent container corners) and container interlocking necessities (e.g., the stowage must be engineered to be an integral block to ensure a safe and stable transit, the

stowage may be required to be secured directly to the hull/structure of the vessel using devices such as tension pressure elements), the use of automatic twist locks, SATLs and "hanging stackers" may not be feasible. Container stacks for which the vessel's Cargo Securing Manual requires the stacks to be interlocked, can only be interlocked by means of manual fittings since no automatic or semi-automatic fitting can accomplish this function. As a consequence, a container securing fitting for below deck block stows will be exempt under 29 CFR 1918.85(j)(1) when the vessel's Cargo Securing Manual requires the fitting to interlock adjacent containers or be secured to the vessel structure; otherwise, PCSDs such as automatic twist locks, SATLs or "hanging stackers" will be used to secure below deck containers in block stows in order to reduce worker exposure to fall hazards during operations. Employees that are exposed to fall hazards, including work on top of containers, must be provided fall protection.

Question 45: United States trucking and rail companies are ordering 53-foot ASA containers from overseas manufacturers. These containers, which are empty, are loaded as "cargo" into non-containerized vessels and shipped to the United States. The non-containerized vessels transport these 53-foot containers as a block stow using a variety of stowage arrangements and a variety of different container fittings. Does OSHA consider the empty non-ISO containers being shipped as cargo to be exempted under 29 CFR 1918.85(j)(1)?

Answer: Vessels transporting these containers must load, stow and secure these 53-foot containers in accordance with their respective Cargo Securing Manuals. For compliance purposes, the shipment of these containers on vessels will be treated as a "block stow." For below deck block stows, a container securing fitting will be exempt under 29 CFR 1918.85(j)(1) when the vessel's Cargo Securing Manual requires the fitting to interlock adjacent containers or be secured to the vessel structure; otherwise, PCSDs such as automatic twist locks, SATLs or "hanging stackers" will be used to secure below deck containers in block stows in order to reduce worker exposure to fall hazards during operations.

Question 46: With regard to fully containerized reefer ships for fruit, because of all the "plug-ins" for the reefer containers, there are catwalks at every level of the stacks except for the very top and the first tier. The catwalks are fully equipped with railings (two horizontal rail courses; therefore, there is no unguarded edge). Where there are catwalks, the longshoring workers can insert cones without ever going off the catwalk and onto the tops of the containers. For all areas where stacking cones cannot be placed directly by workers from the catwalk, SATLs are used. Does this fully comply with 29 CFR 1918.85(j)(1)(i)? Also, since the "device" (i.e., catwalk) used to preclude container-top work is not a positive container securing device such as a SATL or an above deck cell guide, are such catwalks in compliance with 29 CFR 1918.85(j)(1)(ii)?

Answer: These vessels have catwalks which were engineered and designed to provide employees access to the reefer containers for plugging in the reefer compressor electrical cables, and periodically reading reefer gauges. Using these catwalks to perform other functions such as the placement or retrieval of manual cones on container tops, involves additional safety issues and considerations such as fall protection, ergonomics, and increased hazards related to potentially falling objects. Without the catwalks being specifically engineered and designed for cone placement/removal, in order to perform such tasks employees may have to lean through or

bend over the catwalk guardrails to place/remove cones, stand on the mid-rails to perform such tasks, lift the cones (which weigh from 9 to 17 pounds for single cones and up to 24 pounds for double cones) with one arm from difficult body positions and angles. Further, with a horizontal distance of 18 to 24 inches or more between the catwalk and the container, a dropped cone is likely to damage equipment, injure personnel, or both. The use of PCSDs, such as SATLs or "hanging stackers," as required by 29 CFR 1918.85(j)(1)(ii), eliminates these additional safety issues and considerations because it eliminates the need for employees to perform reefer container top coning operations. However, if the catwalk is specifically engineered and designed for the placement/removal of cones, including full consideration of ergonomics and falling objects (cones), and complies with OSHA requirements for walkways/guardrails, then the use of the catwalk to place/remove cones would be in compliance. The employer must demonstrate that the engineering, design and functional use of the catwalk provides a safe means of performing the placement/removal of cones for reefer container top operations.

Question 47: 29 CFR 1918.85(j)(3) *Other exposure to fall hazards*, states, "The employer shall ensure that each employee exposed to a fall hazard is protected by a fall protection system meeting the requirements of paragraph (k) of this section." There are several existing fall protection systems that require employees to make the initial hookup without fall protection. Will OSHA permit employees to come within three feet of an unprotected edge for the initial hookup of container top fall protection systems?

Answer: OSHA would consider this to be a violation, since the employee is, by definition, exposed to a "fall hazard." As described under 29 CFR 1918.2, *Definitions*, "Fall hazard" means the following situations: (1) whenever employees are working within three feet (0.91 m) of the unprotected edge of a work surface that is 8 feet or more (2.44 m) above the adjoining surface and twelve inches (0.3 m) or more, horizontally, from the adjacent surface; or (2) whenever weather conditions may impair the vision or sound footing of employees working on top of containers.

Question 48: 29 CFR 1918.85(j)(3) lists several examples where the employer can demonstrate that fall protection for an employee would be infeasible or create a greater hazard. One of the examples listed is "port conditions." What does OSHA mean by "port conditions?"

Answer: OSHA was referring to the situation where some ports would prohibit employees from tying off to container crane spreaders due to liability and insurance considerations. In this situation, it would be the employer's responsibility to use an alternate fall protection system that does not require employees to be attached to the spreader.

Question 49: Are there some container top situations aboard vessels where fall protection, as required by 29 CFR 1918.85(k), is not feasible or may create a greater hazard?

Answer: Container top fall protection is feasible in the great majority of situations. It is the employer's burden to prove that fall protection is not feasible or that providing fall protection would create a greater hazard. OSHA recognizes that some containers (open top containers, rag top containers, and tank containers) are constructed differently than the normal intermodal containers and may create situations where providing fall protection may prove to be difficult.

However, fall protection may be feasible even in those situations. Fall protection also may be feasible for employees working on chimney stows by tying off to the spreader. Any questions regarding feasibility should be directed to the OSHA National Office (Directorate of Enforcement Programs; Office of Maritime Enforcement).

NOTE: With regard to fall protection, OSHA recognizes that, in this industry, there may be particular instances when fall protection may not be feasible. An example of a circumstance where fall protection may not be feasible is the placement of an overheight container on a chimney stow using gear that requires the manual release of hooks. In these types of situations, 29 CFR 1918.85(j)(3) requires the employer to:

- Make a determination that an employee will be exposed to a fall hazard, but that the use of fall protection is not feasible or would create a greater hazard;
- Alert the exposed employee of the hazards involved; and
- Instruct the exposed employee how to best minimize the hazard.

OSHA emphasizes that such situations are not common and that when they do occur, the burden is on the employer to fully comply with these requirements before the employee performs the work. Claims regarding the infeasibility of fall protection will be closely scrutinized by the Agency in its enforcement of the rule.

Question 50: Is the container top fall protection required by 29 CFR 1918.85(k) for vessels, also specifically required in marine terminals by 29 CFR Part 1917?

Answer: 29 CFR Part 1917, the *Marine Terminals* standard, does not specifically address this hazard. However, since this is a recognized hazard when handling containers aboard ships, (see 29 CFR Part 1918, *Safety and Health Regulations for Longshoring*), the General Duty Clause could be cited for lack of fall protection within a marine terminal, provided that all requirements for such a violation are met (See FIRM, Chapter III, Paragraph C.2.c).

Question 51: 29 CFR 1918.85(k)(7) states, "When 'live' (activated) container gantry crane lifting beams or attached devices are used as anchorage points, the following requirements apply:

- **The crane shall be placed into a 'slow' speed mode;**
- **The crane shall be equipped with a remote shut-off switch that can stop trolley, gantry, and hoist functions and is in control of the employee(s) attached to the beam; and**
- **A visible or audible indicator shall be present to alert the exposed employee(s) when the remote shut-off is operational."**

Does the electrical power to a container spreader have to actually be shut-off when workers are attached to the spreader (or a cage attached to the spreader), or can the shut-off switch be left in the on position but in the control of the employees attached to the spreader?

Answer: The shut-off switch can be left in the "ON" position provided each employee attached to the spreader has in their possession a remote shut-off switch that can stop trolley, gantry, and hoist functions. A visible or audible indicator must be present to alert the exposed employees when the remote shut-off is operational.

Question 52: Must the container crane be equipped with a slow speed mode as required by 29 CFR 1918.85(k)(7)(i) if the power for trolley, gantry, and hoist is shut down?

Answer: No, the slow speed mode required by 29 CFR 1918.85(k)(7)(i) is not necessary when power is shut down. The slow speed mode is necessary only when power is activated and the spreader moves across the containers with employees attached to it.

Question 53: Can an employee on top of the spreader or in a cage that is attached to the spreader be the person in control of the shut-off switch required by 29 CFR 1918.85(k)(7)(ii)?

Answer: Each exposed employee attached to the spreader or cage must have in their possession a remote shut-off switch that can stop the crane's trolley, gantry and hoist functions as required by 29 CFR 1918.85(k)(7)(ii). Other employees who are watching the operation but are not attached to the spreader beam also may have a remote shut-off switch because they may be in a better position to spot potential problems faster than the employees attached to the spreader beam.

Question 54: 29 CFR 1918.85(k)(7) states, "When live (activated) container gantry crane lifting beams or attached devices are used as anchorage points, the following requirements apply." What does OSHA mean by attached devices?

Answer: Attached devices are the cage or guarded riding platform attached to the spreader, and used as the employee's anchorage point.

Question 55: During intermodal container operations aboard a vessel, what are the fall protection requirements for employees exposed to unguarded edges that do not involve intermodal containers?

Answer: 29 CFR 1918.85(l) provides for fall protection in container operations that require employees to work along unguarded edges (other than on container tops). In these situations, fall protection meeting the requirements of 29 CFR 1918.85(k) of this section must be provided where the fall distance is greater than eight feet (2.44 m). This primarily addresses work operations such as lashing, locking and unlocking twist locks from surfaces other than container tops, or signaling to direct the placement of containers. This is consistent with OSHA's approach regarding fall distances in 29 CFR 1918.32(b), and 29 CFR 1918.85(j), (k), and (l) (see definition of "fall hazard" at 29 CFR 1918.2).

Question 56: Does 29 CFR 1918.85(k)(7) prohibit an employer from using the lifting beam of a container gantry crane to transport employees above deck? If 29 CFR 1917.45 and 29 CFR 1918.66(c) applies to personnel being hoisted aloft, does the voluntary inclusion of an anchor point and the use of a fall protection harness within the guarded riding platform, trigger the requirements for slow mode and emergency E-stop as outlined in 29 CFR 1918.85(k)?

Answer: The OSHA standard that applies when employees are being hoisted in a guarded riding platform by a shore-based crane is 29 CFR 1917.45(j). 29 CFR 1918.66(c) applies when hoisting personnel with a crane that is part of or placed on a vessel. Employees that are transported in a lifting beam platform of a container gantry crane or other guarded platform being hoisted by a shore-based crane are covered by the *Marine Terminals* standard (29 CFR Part 1917), not the *Longshoring* standard (29 CFR Part 1918). Using the lifting beam of a container gantry crane for the transport of employees above deck is allowed, provided that the platform used is in compliance with the requirements of 29 CFR 1917.45(j). Transporting employees using a vessel-based crane is covered by the *Longshoring* standard (29 CFR Part 1918) and is allowed when the requirements of 29 CFR 1918.66(c) are met.

When employees are working outside of the guarded riding platform on top of intermodal containers and using the "live" (activated) container gantry crane lifting beams or attached devices as an anchorage point for a fall protection system, then 29 CFR 1918.85(k) applies. 29 CFR 1918.85(k)(7)(i) – (iii) require that: the crane is placed in a slow speed mode; the crane is equipped with a remote shut-off switch that is in the control of the employees attached to the crane; and a visible or audible indicator is present to alert the exposed employee(s) when the remote shut-off is operational.

Again, 29 CFR 1918.85(k)(7)(i) – (iii) apply when employees are outside of the guarded riding platform and working on top of intermodal containers. They do not apply when employees are in the guarded riding platform of a crane, either during transit or while performing work activities. 29 CFR 1917.45(j) and 29 CFR 1918.66(c) require that the platform is guarded to protect employees from falls. However, the use of a supplemental fall protection system by employees in the guarded riding platform during transit or while performing work activities creates an added measure of safety.

Question 57: 29 CFR 1918.86(c) states, "Pedestrian traffic. Bow, stern and side port ramps also used for pedestrian access shall meet the requirements of 29 CFR 1918.25. Such ramps shall provide a physical separation between pedestrian and vehicular routes." What will OSHA accept as a physical separation? Is the physical separation necessary when pedestrians are kept off the ramps during vehicular travel?

Answer: The physical separation need not be strong enough to prevent a vehicle from breaking through. Examples of physical separation are railings, stanchions, or traffic barrels connected by rope or high visibility tape, or other materials separating pedestrian and vehicle traffic. Lines painted on the ramp or plastic traffic cones alone do not meet the intent of the standard. The purpose of the physical separation is to guide employees to the pedestrian traffic area. The physical separation is not necessary when traffic control is used to keep pedestrians off the ramps during vehicular travel.

Question 58: Are trailers, chassis, and low boys required to have brakes when they are used in Ro-Ro operations, as are required by 29 CFR 1918.86(i) for tractors?

Answer: 29 CFR 1918.86(i) requires that tractors have sufficient braking capacity to descend ramp inclines safely. Brakes would be necessary on trailers, chassis, and low boys if the tractor has insufficient braking capacity to safely control the load while descending ramps.

Question 59: Will OSHA strictly enforce the square inch size requirement for a vest which is described in a NOTE to paragraphs 29 CFR 1918.86(m) and 29 CFR 1917.71(e)?

Answer: No, OSHA will not be measuring the size of the vest. The standard's intent is to make employees more visible by wearing high visibility, reflective clothing. OSHA will accept the "PMA-type vest," coveralls, shirts and jackets with high visibility material for daytime use and retro-reflective material for nighttime use.

Question 60: If crane mechanics, longshoremen, or other employees pass through the immediate area of container handling equipment or traffic lanes, do they need to wear high visibility/retro-reflective vests as required by 29 CFR 1918.86(m) and 29 CFR 1917.71(e)?

Answer: If employees are in the immediate area of container handling equipment or traffic lanes, 29 CFR 1917.71(e) and 29 CFR 1918.86(m) apply, unless the employees are in a designated walkway per 29 CFR 1917.71(d)(1).

NOTE: 29 CFR 1918.86(m) requires all persons on any deck during the conduct of Ro-Ro loading or discharging operations to be equipped with high visibility vests (or equivalent protection).

Question 61: 29 CFR 1918.87(c) states, "Personnel shall not be permitted to ride on the elevator's platform if a fall hazard exists." Can employees ride unguarded elevators if they are not within three feet (0.91 m) of the unguarded edge? Can the driver of a powered industrial truck or vehicle ride the cargo elevator on a ship?

Answer: Employees are allowed to ride unguarded elevators provided that they maintain a distance of three feet (0.91 m) from the edge (see definition of "fall hazard" at 29 CFR 1918.2). When any part of an employee's body, including extremities, comes within three feet (0.91 m) of an unprotected edge, a fall hazard exists. In order to make sure that the brakes are applied and prevent the truck or vehicle from rolling, the driver of a powered industrial truck or vehicle is allowed to ride an elevator platform.

Question 62: In log operations, 29 CFR 1918.88(g), a rescue boat capable of affecting an immediate rescue must be available when employees are working on rafts or booms. Does the boat have to be manned?

Answer: Yes, the rescue boat must be continuously manned in order to be capable of affecting an immediate rescue. The employer must determine, based on local conditions, what type of rescue boat is appropriate to the immediate circumstances. For example, when currents are fast

enough to carry an employee away, employers would be required to make a powered rescue boat available.

NOTE: These guidelines require a powered rescue boat to be available whenever the waters are rough or swift or where manually-operated boats are not practicable. Powered rescue boats are required when the current exceeds one knot (1.689 feet per second, or about 17 feet per 10-seconds).

Question 63: Can employees attempt to stop a leaking drum of hazardous material without being trained in accordance with the *Hazardous Waste Operations and Emergency Response* (HAZWOPER) standard at 29 CFR 1910.120(q)?

Answer: No, if employers direct their employees to respond to an emergency involving a hazardous substance spill that is beyond the scope of their emergency action plans (developed pursuant to 29 CFR 1917.30 and 29 CFR 1918.100), the provisions of the *Hazardous Waste Operations and Emergency Response* (HAZWOPER) standard at 29 CFR 1910.120(q) will apply and employees must be trained to perform the duties required of them under 29 CFR 1910.120(q). HAZWOPER, however, does not cover responses to incidental spills that do not have the potential for becoming emergencies. Incidental releases are those releases of hazardous substances which do not pose a significant safety or health hazard to employees in the vicinity or to those cleaning them up, and do not have the potential to become an emergency within a short time frame. These types of releases are limited in quantity, exposure potential, and toxicity. Employees responding to any incidental release must be trained according to the training requirements of the *Hazard Communication* standard (29 CFR 1917.28 and 29 CFR 1918.90).

Question 64: Can you explain the 29 CFR 1918.94 rule for worker exposures to carbon monoxide (CO) on vessels and how this was determined?

Answer: 29 CFR 1918.94(a) addresses the hazards associated with shipboard exposures to carbon monoxide (CO). The buildup of unhealthy levels of carbon monoxide is of particular concern in breakbulk and Ro-Ro vessel operations. For breakbulk operations, forklifts are used in the hold; in Ro-Ro vessel operations, almost any type of vehicle can be used since the cargo is often the vehicle itself (i.e., vehicles being transported as cargo on Ro-Ro ships). The previous limits for carbon monoxide in marine terminals and longshoring have been retained and are: 50 ppm (0.005%) as an 8-hour time weighted average (TWA) (NOTE: this is consistent with the TWA for general industry in 29 CFR Part 1910, Subpart Z) and, in enclosed spaces, a 100 ppm (0.01%) ceiling (i.e., the maximum allowable exposure at any given point in time; never-to-be-exceeded peak). However, there is a limited exception of a 200 ppm (0.02%) ceiling for Ro-Ro operations on vessels. The formula for calculating an eight hour TWA was removed from the standard because it is appropriate for personal monitoring, but not for area monitoring. Instead of an 8-hour TWA, the standard uses an “8-hour average area level” for monitoring CO levels.

NOTE: In longshoring and marine terminals, employees regularly enter and work in enclosed spaces. Exposure can rise much more quickly to Immediately Dangerous to Life or Health (IDLH) levels in enclosed spaces, and escape from these spaces can be difficult. In these sectors, there is a higher potential for concentrations to rise to IDLH levels of CO. The 100 ppm ceiling for enclosed spaces in the rule is intended to serve as a trigger level, to enable employees to exit

the enclosed spaces before CO concentrations reach hazardous levels. This is particularly important because of two factors that are closely interrelated: first, employees working in enclosed spaces may need more time to exit those spaces because of their location and the vessel configuration; and second, CO generated into an enclosed space can rapidly accumulate to unsafe levels. Thus, by requiring employees to exit enclosed spaces when the CO level reaches 100 ppm, the standard takes these factors into account to ensure that the employees will not be exposed to hazardous concentrations of CO in the spaces. With regard to CO exposure in Ro-Ro vessels, a 100 ppm ceiling level is not always feasible. Although levels of CO often spike above 100 ppm, these levels almost immediately fall below this level, with subsequent levels well below. In addition, from an operational standpoint, spikes in CO levels may occur upon starting vehicles for unloading. Typically, employees are within the vehicles and are in the process of exiting the vessel. If a CO alarm were to go off under these circumstances, it would be unreasonable to require the employees to stop the vehicles and evacuate the vessel on foot, thereby increasing their exposure. This type of Ro-Ro operation CO exposure, contrasts sharply with other exposures such as working in the hold of a vessel using gasoline-powered industrial trucks where the CO build up is gradual, does not dissipate rapidly, and evacuation is by a vertical ladder (more physically demanding). As a result, OSHA set a **200 ppm ceiling limit** for occupational exposure for Ro-Ro operations vessels. It was noted that although this exception was based on feasibility considerations, it does meet the NIOSH recommendation for a ceiling based on health considerations.

Question 65: What are the dangers of "Menhaden" and similar types of fish, and what standards apply, if any?

Answer: 29 CFR 1918.94(f) *Catch of menhaden and similar species of fish*, addresses longshoring operations aboard vessels engaged in the menhaden trade (or trade in similar species of fish). Menhaden is a term that refers to several species of trash fish which are used to produce, among other products, fertilizer, pet food and fish oil. As cargo, menhaden presents a health hazard to longshore workers because upon decomposition it generates hydrogen sulfide gas (H_2S). 29 CFR 1918.94(f) does not apply to vessels that are using refrigerated holds for the storage of all cargo, because refrigeration prevents the menhaden from decomposing. This section requires that, before employees enter a hold that contains menhaden, the hold be tested for hydrogen sulfide and oxygen deficiency. These tests must be performed by designated supervisory personnel, trained and competent in the nature of hazards, and in the use of relevant test equipment and procedures. The maximum allowable atmospheric concentration of hydrogen sulfide, as measured by direct reading instruments is a 20 ppm ceiling. The oxygen level must not be less than 19.5 %. Unless these atmospheric levels are met, employees are not permitted to enter the hold. The corresponding provision of the *Marine Terminals* standard is 29 CFR 1917.73.

Question 66: If sanitation facilities as required by 29 CFR 1918.95 are not provided to longshoremen working on a vessel, can the sanitation facilities at the marine terminal required by 29 CFR 1917.127 be used to meet this requirement?

Answer: 29 CFR 1918.95 *Sanitation*, addresses requirements for washing and toilet facilities, drinking water, prohibited eating areas (where hazardous materials are stowed or handled), and garbage and overboard discharges. Longshoring work is normally performed at marine

terminals. If the marine terminal's sanitation facilities are available for longshore employees, this would constitute compliance with 29 CFR 1918.95. 29 CFR 1917.127, which covers sanitation at marine terminals, is essentially identical to 29 CFR 1918.95.

Question 67: How does the "danger zone" apply to machine guarding under 29 CFR 1918.96(e) and 29 CFR 1917.151?

Answer: 29 CFR 1918.96(e) *Machine guarding*, requires guarding of danger zones (see 29 CFR 1918.2 definition) on machines and equipment used by employees and stipulates that the power supply to machines be turned off, locked out, and tagged out during repair, adjustment, or servicing work on such machines (i.e., lockout/tagout). This provision is written in performance-oriented language and is similar to 29 CFR 1917.151.

The danger zone performance approach to machine guarding provides coverage of all hazards within the danger zone without the need to address each hazard separately. This approach also requires employers to use judgment regarding which machine parts or areas at or near a machine do in fact expose employees to workplace hazards. Guidance on a wide range of machine guarding techniques and background information may be found in the OSHA pamphlet *Concepts and Techniques of Machine Guarding* (OSHA 3067-1992), or the American National Standards Institute (ANSI) publication *American National Standard for Machine Tools* (ANSI Bll.l9-1990).

Question 68: What are the requirements for first aid and lifesaving facilities during longshoring operations, and where can additional information be obtained by an employer?

Answer: 29 CFR 1918.97 *First aid and lifesaving facilities*, parallels the same provisions for shoreside marine cargo handling (29 CFR 1917.26). For the benefit of employers, a non-mandatory Appendix V, to 29 CFR Part 1918, is provided which contains a list of the basic elements of a first aid training program that incorporates generally accepted guidelines for, among other aspects of a first aid program, the handling of potentially infectious body fluids (i.e., "universal precautions"). 29 CFR 1918.97(c) *First aid kits*, specifies the requirements for first aid kits. This paragraph was modified to recognize that a person who is certified in first aid and familiar with the hazards found in marine cargo handling operations, is qualified to select and restock a first aid kit. Although employers may seek guidance from ANSI guidelines on this issue (ANSI Z308.1-1978, *Minimum Requirements for Industrial Unit-Type First Aid Kits*), compliance with 29 CFR 1918.97 is still required.

Question 69: Does a stretcher available to longshoremen under 29 CFR 1917.26(d) satisfy the requirement for a stretcher under 29 CFR 1918.97(d)?

Answer: 29 CFR 1918.97(d) *Stretchers*, addresses specific requirements for the strength, design characteristics, and positioning of emergency stretchers (Stokes baskets). If a Stokes basket is available to longshore workers shoreside in accordance with 29 CFR 1917.26(d), this will satisfy the parallel requirement in 29 CFR Part 1918.

Question 70: 29 CFR 1918.97(d) and 29 CFR 1917.26(d). Is there a maximum distance

that the stretcher or its equivalent must be maintained from the work area? If so, is the measurement taken from the work area, the ship's center, or the ship's bow or stern? Also, if stretchers are located outside the bow and stern of the ship, would that be considered as being kept close?

Answer: There is no maximum distance that the stretcher or its equivalent may be maintained from the work area. However, frequently it is necessary to provide first aid promptly after a life-threatening accident or injury in order to resuscitate or stabilize a victim. Life-threatening accidents and injuries are reasonably foreseeable events in the marine cargo handling industry. Employers must locate the stretcher or its equivalent such that it can be available immediately, after the victim receives initial assistance, to transport the victim from the vessel to a location where more comprehensive medical assistance can be provided.

Question 71: 29 CFR 1918.97(d) and 29 CFR 1917.26(d). If material or vehicles block the view of the container where the stretcher is kept, is it still considered to be available, though not visible?

Answer: Both 29 CFR 1918.97(d)(7) and 29 CFR 1917.26(d)(7) state, "Stretchers in permanent locations shall be mounted to prevent damage and shall be protected from the elements if located out-of-doors. If concealed from view, enclosures shall be marked to indicate the location of the lifesaving equipment." The employer should take care not to block any sign designed to inform employees regarding the location of devices intended to aid in the response to injuries and accidents (e.g., Stokes basket stretchers). If, for some reason, the scope of work makes it impossible for the sign not to be blocked, it is incumbent upon the employer to provide an alternate means of informing employees of the location of such lifesaving equipment. Should the response device be located in a shed or building, then the employer and employees must be able to readily locate the device. In an Occupational Safety and Health Review Commission decision (OSHRC Docket No. 76-540), the judge decided that the stretcher, which was kept in a warehouse, did not meet the definition of "available" when employees and supervisory personnel were not able to locate the stretcher after searching for more than ten minutes.

Question 72: 29 CFR 1918.97(e) and 29 CFR 1917.26(f). Is there a maximum distance that the life ring must be maintained from the work area? If so, is the measurement taken from the work area, the ship's center, or the ship's bow or stern? If the life ring is located outside the bow or stern of the ship, would it be considered as being kept close?

Answer: There is no maximum distance that the life ring may be maintained from the work area. According to 29 CFR 19l8.97(e), life rings must be in the "vicinity" of the vessel, which OSHA has interpreted to be either on the vessel, or on the pier adjacent to the vessel and between the bow and stern of the vessel. Similarly, 29 CFR 1917.26(f) requires that life rings be available at readily accessible points at each waterside work area where the employees' work exposes them to the hazard of drowning. An employer must ensure that the life ring can be retrieved and used expeditiously, if an employee falls, or is pulled, into the water.

Question 73: Under what conditions can employees with medical ailments be excluded from the requirements of 29 CFR 1918.98 and 29 CFR 1917.27 regarding qualifications to operate machinery or equipment?

Answer: 29 CFR 1918.98 *Qualifications of Machinery Operators and Supervisory Training,* sets out requirements for the qualifications of machinery operators (e.g., crane or winch operators, industrial truck drivers, conveyor operators), and training requirements for supervisory personnel (e.g., gang supervisors, stevedore superintendents) in accident prevention. These same provisions can be found in the *Marine Terminals* standard (29 CFR 1917.27). 29 CFR 1918.98(a)(1) and 29 CFR 1917.27(a)(1) stipulate that employees who are being trained and supervised by a designated person may operate machinery or give signals to operators during training. 29 CFR 1918.98(a)(2) and 29 CFR 1917.27(a)(2) provide that employees with defective eyesight or hearing that has not been corrected, are not permitted to operate certain equipment (i.e., cranes, winches, other power-operated cargo handling apparatus, or power-operated vehicles). In addition, employees suffering medical ailments that may suddenly incapacitate them are not permitted to operate such equipment. Employees with medical ailments, such as heart disease and epilepsy, should only be excluded from operating the specified machine if their particular medical condition poses a high probability that they could become suddenly incapacitated, and only if there is no reasonable accommodation that would eliminate or reduce the risk of direct threat of harm to the employee or others. "Suddenly incapacitating" medical ailments are those that pose a direct threat of substantial harm to the health or safety of the employee, or others, that cannot be eliminated or reduced by some form of reasonable accommodation. Direct threat refers to those risks that are significant, specific, and imminent or current. In addition, direct threat is limited to those situations in which there is a high probability that substantial harm might occur. Thus, this provision does not apply to medical ailments, including heart disease and epilepsy, that pose only a speculative or remote risk of harm. Likewise, this provision is not intended to include medical ailments that pose only a slightly increased risk of harm. In determining whether there is a direct threat to the health or safety of the employee or others, the employer should identify the specific risk posed by the employee as well as the particular aspect of the ailment that would pose a direct threat. There are certain factors the employer should consider when determining whether the medical condition of the employee poses the type of direct threat anticipated by this provision:

- The duration of the risk;
- The nature and severity of the potential harm;
- The likelihood that the potential harm will occur; and
- The imminence of the potential harm.

The determination of the seriousness and imminence of the potential harm also must be based on the employee's current medical condition and the employee's current ability to perform the job. Determinations of whether an employee poses a direct threat of substantial harm must be made on a case-by-case basis, and must be based on the best available objective data or other factual evidence and/or medical analyses regarding the particular employee. Where the employer determines that the employee's medical ailment poses a significant risk of substantial harm, the

employer also must consider whether reasonable accommodations are available that would eliminate or reduce the risk so that it is below the level of direct threat.

For both 29 CFR 1917.27(a)(2) and 29 CFR 1918.98(a)(2) the definition for suddenly incapacitating medical ailments is consistent with the Americans with Disabilities Act (ADA), 42 U.S.C. 12101 (1990). Therefore, employers who act in accordance with the employment provisions (Title I) of the ADA (42 U.S.C. 12111 – 12117), the regulations implementing Title I (29 CFR Part 1630), and the Technical Assistance Manual for Title I issued by the Equal Employment Opportunity Commission (Publication number: EEOC-M1A), will be considered as being in compliance with 29 CFR 1918.98 and 29 CFR 1917.27.

Question 74: 29 CFR 1918.98(b) and 29 CFR 1917.27(b) require that by July 16, 1999, all supervisors of five or more persons must complete a course in accident prevention. Does this training require that supervisors have knowledge of OSHA's maritime rules?

Answer: Although not specifically required, knowledge of applicable rules is one of the recommended topics for the course. Violations are more likely to occur when supervisors are not familiar with protective safety and health rules of 29 CFR Part 1917 and 29 CFR Part 1918.

Question 75: 29 CFR 1918.100(c) *Alarm system*, states, "The employer shall establish an employee alarm system that provides warning for necessary emergency action or for reaction time for safe escape of employees from the workplace or the immediate work area, or both." Would a verbal alarm system be acceptable?

Answer: Verbal alarms are acceptable provided that all affected employees can be reached immediately. Verbal alarms, however, would not be appropriate to provide warning for emergency action where the worksite is so large or spread out that employees working at far distances would not hear the verbal signal.

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