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Roll-On Roll-Off (RO-RO) Ship and Dock Safety

OSHA 3396-06N 2010

Occupational Safety and Health Act of 1970

"To assure safe and healthful working conditions for working men and women; by authorizing enforcement of the standards developed under the Act; by assisting and encouraging the States in their efforts to assure safe and healthful working conditions; by providing for research, information, education, and training in the field of occupational safety and health."

This publication provides a general overview of a particular standards-related topic. This publication does not alter or determine compliance responsibilities which are set forth in OSHA standards, and the *Occupational Safety and Health Act of 1970*. Moreover, because interpretations and enforcement policy may change over time, for additional guidance on OSHA compliance requirements, the reader should consult current administrative interpretations and decisions by the Occupational Safety and Health Review Commission and the courts.

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Roll-On Roll-Off (RO-RO) Ship and Dock Safety

Occupational Safety and Health Administration
U.S. Department of Labor

OSHA 3396-06N
2010

These recommendations are advisory in nature and informational in content. It is not a standard or regulation, and it neither creates new legal obligations nor alters existing obligations created by OSHA standards or the *Occupational Safety and Health Act*. Pursuant to the OSH Act, employers must comply with safety and health standards and regulations issued and enforced either by OSHA or by an OSHA-approved State Plan. In addition, the Act's General Duty Clause, Section 5(a)(1), requires employers to provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm.

Contents

Executive Summary

This guidance document will help marine cargo handling employers and workers involved in roll-on roll-off (RO-RO) operations recognize hazards and prevent accidents, injuries and fatalities when loading or unloading ships in port. Hazards exist in RO-RO operations because the fast-paced work is conducted around the clock and is sometimes conducted in inclement weather. Accidents relating to RO-RO operations may occur when various types of motorized vehicles travel inside ships, on ramps, docks, marshalling areas and parking locations. RO-RO accidents can be serious and it is important for all employers involved in RO-RO operations to implement their own safety rules and comply with those rules established by the Occupational Safety and Health Administration (OSHA) and the local stevedoring association.

Accidents onboard ships may be the result of hazardous conditions such as inadequate lighting, equipment, traffic, weather, or access. In all cases, the employer remains responsible for ensuring the safety of its workers. Various jobs are performed on ship's RO-RO decks by vessel crew, stevedores, longshoremen and management. Therefore, close cooperation among all parties is essential.

OSHA requires that longshoring employers engaged in RO-RO operations develop and implement a traffic control system for vehicle and pedestrian safety (29 CFR 1918.86(a)). A traffic safety control system can help reduce fatalities and injuries associated with traffic accidents.

The requirements and recommendations in this document are largely based on the OSHA Longshoring and Marine Terminals standards, 29 CFR Parts 1917 and 1918, and industry and labor input through the Maritime Advisory Committee for Occupational Safety and Health (MACOSH), a federal advisory committee. OSHA recommends that employers use these RO-RO recommendations, along with recommendations from the OSHA Traffic Safety in Marine Terminals guidance document, to develop and implement an effective RO-RO traffic control system.

Background

A RO-RO is a ship specifically designed to allow cargo to be driven or towed directly on and off the ship by using the ship's or shore-based ramps. RO-RO ships are designed to accommodate mechanized or self-propelled cargo. In addition, trailers are used to carry cargo aboard that is removed from the trailer and stacked compactly in the cargo area. RO-RO ships may also require the use of specialized equipment to stow and lash the vehicles and cargo. The International Maritime Organization (IMO), SOLAS, Regulation 6, Chapter 5 "Stowage & Securing," requires that RO-RO ships have a "Cargo Securing Manual." *IMO Solas manual*

There are several types of RO-RO ships. New automobiles transported by ship are commonly moved on RO-ROs. These large new-car carriers are commonly called Pure Car Carriers (PCCs) or Pure Car Truck Carriers (PCTCs). The acronym ROPAX describes a RO-RO ship equipped with cabins to accommodate several hundred passengers.

The CON-RO ship is a hybrid of a RO-RO and a container ship. This type of ship generally has below-deck areas used to store cargo such as vehicles, while the top deck is used to stack container freight. A RO-LO ship is another hybrid ship type that has a ramp(s) serving the main internal decks, while the cargo space on the upper decks is accessible only by crane.

Each type of ship and each type of cargo present different challenges and risks to marine cargo-handling employers and workers when moving, arranging and fitting the cargo into the RO-RO vessel during the loading and discharge operations.

OSHA regulatory requirements for the protection of longshore workers moving cargo on and off RO-RO ships are primarily provided in 29 CFR 1918.25, 1918.86 and 1918.87. Considering the complexity of the operations and the interactions between the longshoremen, vessel crew, and terminal personnel and management, it is important that all parties involved in RO-RO operations work together to establish procedures for the safety of personnel and the safe movement of cargo.

Factors that Contribute to RO-RO-Related Injuries and Property Damage

Many factors contribute to RO-RO-related injuries and property damage. Some of these factors include:

- Lack of training
- Lack of awareness
- Fatigue
- Inattention
- Inadequate traffic controls

- Material failures in cargo transport vehicles
- Substance abuse
- Inadequate illumination
- Low clearance
- Inadequate or poorly designed traffic control system
- Unsafe speeds
- Inadequate ventilation
- Poorly designed vehicle stowage plan
- Unsafe walking surfaces
- Improper use of, or failure to use, personal protective equipment
- Uncontrolled pedestrian traffic
- Improper use of, or failure to use, seatbelts

Training

Workers cannot work safely unless they are properly trained. It is the responsibility of the employer to ensure proper RO-RO operator training. Workers operating haulage equipment, such as utility tractors and forklifts, must be trained under OSHA requirements found in 29 CFR 1918.98(a)(1) and 29 CFR 1910.178(l). Some RO-RO haulage vehicles and cargo handling equipment fall under the powered industrial truck training requirements in 29 CFR 1910.178(l). Training requirements for all other cargo handling apparatus and power-operated vehicles are found in 29 CFR 1918.98(a)(1).

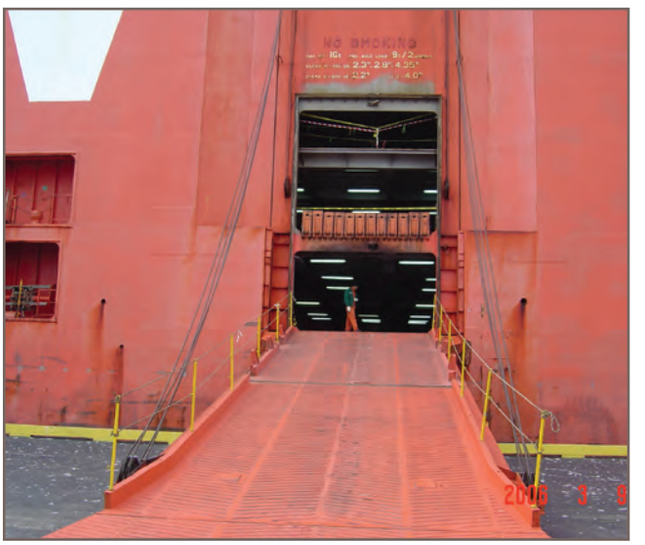
For equipment covered by 29 CFR 1910.178 (powered industrial trucks), it is the responsibility of the employer to select the particular training elements that are relevant to the type of powered industrial truck the worker will be allowed to operate and the work environment in which the vehicle will be operated, 29 CFR 1910.178 (1)(3). The employer may leave out elements if the employer can demonstrate that they are not relevant to the safe operation of such vehicles in the employer's workplace. Other self-propelled mechanized equipment handled as RO-RO cargo including, but not limited to, autos, farm tractors or combines, and construction equipment such as bulldozers and front-end loaders fall under the machinery-operator qualifications in 29 CFR 1918.98(a). In all cases, the employer must ensure that the worker is competent to safely operate the vehicle or piece of equipment to be moved.

Pedestrians and RO-RO Traffic Movement and Controls

OSHA requires that an organized system of vehicular and pedestrian traffic control be established and maintained at each entrance/exit ramp, and on ramps within the ship, as traffic flow warrants (29 CFR 1918.86(a)). Ramps must provide physical separation between vehicles and pedestrians, or a process to prevent simultaneous usage of the ramps (29 CFR 1918.86(c)).

Other key issues relating to pedestrian and RO-RO traffic movement and controls include:

- Employers should control RO-RO traffic at all times by using signage, barriers and signal persons at appropriate control points.
- Unauthorized personnel must not ride on mechanically powered vehicles. A safe place to ride must be provided when riding is authorized (29 CFR 1918.65(h)(10)).
- Drivers must ensure that each vehicle and/or trailer is safely and correctly parked, the brakes are set and the power is shut off before exiting (29 CFR 1918.65(h)(8)).
- All workers working in the terminal traffic lanes must wear high visibility vests (or equivalent protection) (29 CFR 1917.71(e)).
- All authorized workers working in RO-RO operations shall be equipped with high visibility vests (or equivalent protection) (29 CFR 1918.86(m)).



Access and egress for fire response personnel

Access lanes (fire lanes) are often used in conjunction with other RO-RO operations such as delivery zones, staging areas and pedestrian walkways. Local fire officials may designate fire lanes and access road markings to ensure that fire response personnel have access to the ship without being impeded by parked vehicles or other obstructions.

Fatigue

Fatigue[1, 2] is a critical occupational safety concern for shift workers, especially workers working in a RO-RO operation. Being fatigued creates a risk for anyone who undertakes an activity that requires concentration and quick response. With only a few minutes per wheeled cargo unit and hundreds of units to move, fatigue takes its toll quickly. Some recognizable signs of fatigue include:

- Glazed eyes
- Slurred speech
- Dragging feet
- Slower-than-usual movement
- Slow reaction time
- Inability to follow or comprehend instructions
- Falling asleep

Vehicle and Equipment Operation, Maintenance and Use

There may be several different types of haulage equipment, self-propelled machinery, or vehicles loaded or utilized aboard RO-RO ships. Each type has unique operating characteristics and hazards, which must be taken into consideration during loading and unloading. All vehicular cargo operations should be conducted under the supervision of an on-site supervisor, such as a knowledgeable or competent person.

The following bullets contain requirements and guidelines. The employer must ensure that workers follow the requirements and should ensure that workers pay close attention to the guidelines when operating RO-RO cargo:

- After starting equipment or RO-RO cargo, the operator should immediately perform a brake check.
- Hazardous routes must be identified, marked and barricaded (29 CFR 1918.86(e)). It is recommended that signal persons be stationed at intersections, ramp approaches, or departure points to distinguish the hazardous routes from normal traffic routes.
- If seat belts are available, they should be worn during the movement of any RO-RO cargo/equipment.
- Employers should control RO-RO traffic at all times by using signage, barriers and signal persons at appropriate control points.
- Vehicles should always use low-beam headlights during loading/unloading operations. This practice is preferable to the use of hazard lights. (The use of headlights will aid in traveling throughout the ship.)
- Parking vehicles other than RO-RO cargo on traffic access routes should be prohibited.
- Drivers must not drive vehicles, either forward or backward, while personnel are in positions where they could be struck (29 CFR 1918.86(n)).
- Unscheduled inspection of RO-RO cargo should be conducted outside of the main traffic pattern so as not to present a hazard to other moving cargo.
- Power-driven vehicles used in RO-RO operations must be operated at speeds that are safe for prevailing conditions (29 CFR 1918.86(j)).
- Vehicles used to transport workers in the terminal must be maintained in a safe working condition and safety features must not be altered (29 CFR 1917.44(n)).

[1] To improve public health and safety, the National Sleep Foundation offers information on sleep and sleep disorders and supports education, sleep-related research and advocacy. www.sleepfoundation.org

[2] NIOSH Update, "NIOSH Suggests Approaches on Shiftwork to Reduce Worker Fatigue, Stress," November 4, 1997 (found at http://www.cdc.gov/niosh/updates/shift.html).

Tractors and haulage equipment – Tractors used in RO-RO operations must have sufficient power to ascend (move up) ramp inclines safely (29 CFR 1918.86(i)(1)), and sufficient braking capacity to descend (move down) ramp inclines safely (29 CFR 1918.86(i)(2)).

Air brake connections – Each tractor must have all air lines connected when pulling trailers equipped with air brakes and must have the brakes tested before starting operations (29 CFR 1917.71(f)(5) and 29 CFR 1918.86(f)).

Trailer load limits – Flatbed and lowboy trailers and the like must be marked with their cargo capacities and must not be overloaded (29 CFR 1917.71(f)(4) and 29 CFR 1918.86(g)).

Used Cargo/Unusual Loads

Of particular concern are the functionality and safety of used cargo being loaded on and off RO-RO ships. When operating used equipment, precautions should be taken to make the operation safe.

Motorized cargo may be transported in varying stages of disrepair. Operators should perform an operational check prior to off-loading. Unusual RO-RO cargo may need to be escorted directly on or off the ship to a suitable staging area.

A competent person should always perform an assessment prior to loading or discharging used or unusual RO-RO cargo. The assessment should include:

- Checking that the dimensions of the RO-RO cargo will allow entry onto the ramp, paying particular attention to potential obstructions;
- Ensuring that the used or unusual RO-RO cargo is securely lashed or safe to move; and
- Confirming the total gross weight of the load to be moved.

Cargo weights – When cargo is being transported via RO-RO ramps, the weight of the cargo must be plainly marked in pounds (kilograms) (for example: 8,000 lbs. (36.287 kg.)). If the cargo is not marked, the stowage plan or equivalent record that contains the cargo's gross weight may be used to determine the weight (29 CFR 1918.86(h)).

Securing cargo – Cargo loaded or discharged during RO-RO operations must be secured to prevent sliding loads (29 CFR 1918.86(l)).

Towing cargo – Towing creates unique hazards. These hazards may include swing radius hazards, power and braking deficiencies on ramps, or impaired visibility. Each towing operation should be evaluated on a case-by-case basis to assess the hazards of the move and plans for making the move safely.

Communication

Good communication is a key element in successful RO-RO operations. RO-RO operations require constant communication. It is, therefore, important for supervisory personnel to effectively communicate the traffic control system during unlashing, load sequencing, and traffic routing and monitoring to help prevent injuries. Topics to discuss prior to work shifts could include:

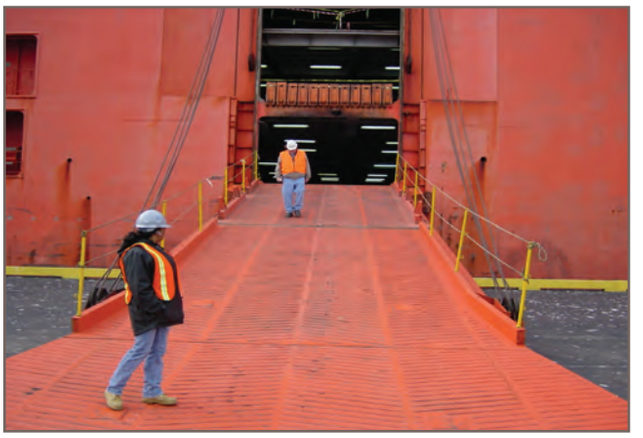
- Safe vehicle operation
- Hazardous routes
- Unusual loads
- Personal protective equipment (PPE)

Ramp Safety

Operations on ramps should receive particular attention in the traffic control system (29 CFR 1918.86(a)). The following elements should be assessed as appropriate:

- Ramps must be properly maintained and secured (29 CFR 1918.86(d)). Damage, which could result in injury, should be repaired immediately. If damage cannot be readily repaired, the ramp should not be used.
- A clear approach area of adequate size should be maintained shoreside at each ramp.
- Ramps should be kept clear of all obstacles.
- Bow, stern, and side port ramps that are also used for pedestrian access must meet the requirements of 29 CFR 1918.25. Such ramps must provide a physical separation (i.e., stanchions and line, or other moveable barriers) between pedestrian and vehicular routes (29 CFR 1918.86(c)).
- When the design of the ramp prevents physical separation of pedestrians and vehicles, a positive means must be established to prevent simultaneous use of the ramp by vehicles and pedestrians (29 CFR 1918.86(c)). Persons boarding or leaving the ship via a ramp that is not large enough to provide a segregated walkway should keep clear of the ramp and give the right of way to vehicular traffic on the ramp. Pedestrians may use the ramps when vehicular traffic is no longer occupying the ramp.
- The load capacity of ramps must be plainly marked. The marked load capacity must not be exceeded (29 CFR 1918.86(b)).

Note that some mechanized cargo is "driven" via an electrical/electronic umbilical cord with the operator walking alongside. In this instance, the operator should be stationed on the ramp in a safe location from where the equipment may be safely controlled. In addition, spotters are sometimes needed on ramps to ensure clearance of unusual-sized cargo and to act as safety clearance observers. These persons should be stationed so that they are never in the bight (slack or loop of a rope) as the equipment is being maneuvered on the ramp. These personnel are NOT considered pedestrians as they are directing or ensuring the safety of the moving cargo.



Illumination

Employers must provide adequate lighting to ensure good visibility for the operators of RO-RO cargo and equipment (29 CFR 1917.123 and 29 CFR 1918.92). Lighting defects should be immediately reported to a ship's officer prior to movement of cargo.

Stationary lights on RO-RO ships must not shine directly into the eyes of drivers (29 CFR 1918.92(c)).

Walking/Tripping Hazards

Many tripping hazards exist in cargo holds. Personnel should be alert to installed fittings, rings and lashing points as tripping hazards.

To prevent tripping, lashers should ensure that vehicle lashing assemblies and lashings are placed on holding racks if provided, or stowed as directed and kept out of the way when disconnected from vehicles.

Working areas must be kept free of equipment, materials and debris (29 CFR 1918.91(a)).

Conditions causing slippery walking and working surfaces must be eliminated in areas used by workers (29 CFR 1918.91(b)).

Vehicle Stowage and Lashing/Unlashing

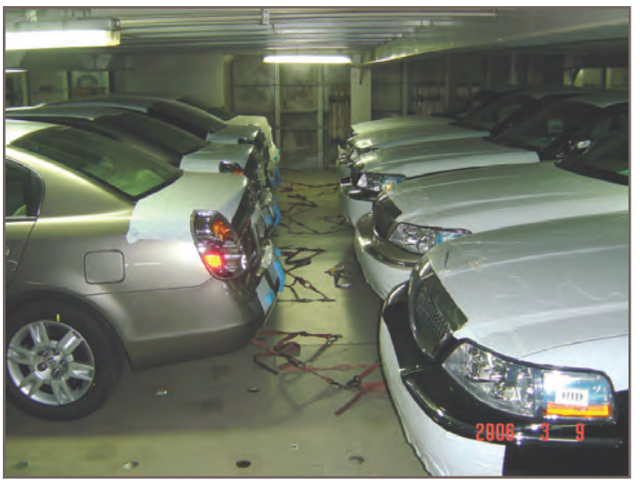
- All chains and gear used in connection with lashing of cargo shall be kept clear of any work area (29 CFR 1918.91(a)).
- Whenever practicable, each vehicle or trailer should be secured before another vehicle or trailer is positioned immediately behind it.
- Lashers should use proper lashing points, so far as possible, both on the vehicle and on the ship.
- Great care should always be taken when releasing any lashing suspected of being under tension.
- Lashers should not remove vehicle-lashing assemblies until ensuring that brakes are set and personnel are clear of the vehicle's path.
- Operators should not move vehicles until lashing assemblies are removed and personnel are clear of the vehicle's path.

Ventilation

Internal combustion engine-driven vehicles must be operated only where adequate ventilation exists or is provided (29 CFR 1918.86(k)). When internal combustion engines exhaust into a hold, intermediate deck, or any other compartment, the employer must ensure that the atmosphere is tested as frequently as needed to prevent carbon monoxide (CO) concentrations from exceeding allowable limits (29 CFR 1918.94(a)(1), (a)(1)(i)). These tests must be made in the area in which workers are working by persons competent in the use of the test equipment and procedures (29 CFR 1918.94(a)(1)).

Employers should ensure that workers control loose paper within RO-RO areas. Papers can be sucked into the ventilation system, blocking airflow and allowing the buildup of harmful gases. Employers should closely monitor air quality during all operations where overexposure may occur.

Most modern car carriers have efficient exhaust ventilation systems. Ventilation systems in cargo holds should be started 15 minutes prior to starting work. The time needed may vary depending on the size of the hold and the airflow.



Ship Cargo Elevators

- Employers must determine and ensure that workers comply with the safe working load of the ship's cargo elevator (29 CFR 1918.87(a)).
- The load distribution on the elevator's platform must be equally distributed at all times (29 CFR 1918.87(b)).
- Workers must be restricted from riding the elevator's platform when a fall hazard is present (29 CFR 1918.87(c)).
- Open decks must be barricaded when there is a fall hazard present during elevator operation (29 CFR 1918.87(d)).

Personal Protective Equipment

Eye Protection – The employer shall ensure that each affected worker uses appropriate eye and/or face protection where there are exposures to eye and/or face hazards (29 CFR 1918.101(a)(1)). One area of perceived need where eye protection, in the form of sunglasses, should be used is when traveling from a dark or dimly lit ship into bright sunlight.

High Visibility Vests – Workers should wear high visibility vests in situations where visibility is reduced, such as in dimly lit ship holds, around vehicular traffic during nighttime driving and in parking areas. All deck-authorized workers must be equipped with high-visibility vests or equivalent protection (29 CFR 1918.86(m)).

Kneepads – All lashers should use kneepads. Employers must provide and require workers to use special protective clothing when necessary (29 CFR 1918.105(a)).

Hearing Protection – All personnel exposed to noise exceeding permissible noise levels must wear hearing protection (29 CFR 1910.95).

Hand Protection – Ship surfaces, as well as heavy cargo, lashing, miscellaneous gear and automobiles, may have sharp edges that can result in cuts to workers' hands. Employers must provide, and require workers to use, special protective clothing when necessary (29 CFR 1918.105(a)(i)).

Protective Footwear – The employer must ensure that each affected worker wears protective footwear when working in areas where there is a danger of foot injuries due to falling or rolling objects or objects piercing the sole (29 CFR 1918.104(a)).

Head Protection – Low overhead areas are often encountered on RO-RO vessels and particularly on PCCs. Bump caps may be worn if there is no hazard of falling objects.

Resources for Additional Information

The following sources may be useful to those seeking further information about RO-RO operations:

ICHCA International, Ltd. (ICHCA) has developed a guide (BP 10) entitled, "Safe Working at RO-RO Terminals 1997." ICHCA is an independent, non-political international membership organization, with membership comprised of corporations, individuals, academic institutions and other organizations involved in, or concerned with, the international transport and cargo-handling industry. ICHCA Publications - Container Owners Association

The International Labor Organization (ILO) has developed instructional information entitled, "Safety and Health in Ports, ILO Code of Practice." "The practical recommendations in this code are intended to provide relevant guidance to ILO constituents and all those responsible for or involved in the management, operation, maintenance and development of ports. It is hoped that this code will help to raise the profile of safety and health issues in ports in all parts of the world, and will encourage more countries to ratify the Occupational Safety and Health (Dock Work) Convention, 1979 (No. 152), or otherwise implement its provisions." www.ilo.org/public/libdoc/ilo/2005/105B09_39_engl.pdf

Sections 1 and 2 of the U.S. Army Field Manual 55-17, Chapter 8, cover the loading and discharging of general cargo vessels. Special attention is given to the different methods of securing cargo, as well as careful handling procedures to prevent damage. Sections 3 and 4 describe loading and discharging methods for RO-RO vessels. The last section in the chapter discusses performing LO-LO and RO-RO operations on the T-AKR 295 and 296 Class Strategic Sealift Ship. www.globalsecurity.org/military/library/policy/army/fm/55-17/ch8.htm#sec3

OSHA Assistance

OSHA can provide extensive help through a variety of programs, including technical assistance about effective safety and health programs, state plans, workplace consultations, and training and education.

Safety and Health Management System Guidelines

Effective management of worker safety and health protection is a decisive factor in reducing the extent and severity of work-related injuries and illnesses and their related costs. In fact, an effective safety and health management system forms the basis of good worker protection, can save time and money, increase productivity and reduce employee injuries, illnesses and related workers' compensation costs.

To assist employers and workers in developing effective safety and health management systems, OSHA published recommended Safety and Health Program Management Guidelines (54 *Federal Register* (16): 3904-3916, January 26, 1989). These voluntary guidelines can be applied to all places of employment covered by OSHA.

The guidelines identify four general elements critical to the development of a successful safety and health management system:

- Management leadership and worker involvement,
- Worksite analysis,
- Hazard prevention and control, and
- Safety and health training.

The guidelines recommend specific actions, under each of these general elements, to achieve an effective safety and health management system. The *Federal Register* notice is available online at www.osha.gov.

State Programs

The *Occupational Safety and Health Act of 1970* (OSH Act) encourages states to develop and operate their own job safety and health plans. OSHA approves and monitors these plans. Twenty-five states, Puerto Rico and the Virgin Islands currently operate approved state plans: 22 cover both private and public (state and local government) employment; Connecticut, Illinois, New Jersey, New York and the Virgin Islands cover the public sector only. States and territories with their own OSHA-approved occupational safety and health plans must adopt standards identical to, or at least as effective as, the Federal OSHA standards.

Consultation Services

Consultation assistance is available on request to employers who want help in establishing and maintaining a safe and healthful workplace. Largely funded by OSHA, the service is provided at no cost to the employer. Primarily developed for smaller employers with more hazardous operations, the consultation service is delivered by state governments employing professional safety and health consultants. Comprehensive assistance includes an appraisal of all mechanical systems, work practices, and occupational safety and health hazards of the workplace and all aspects of the employer's present job safety and health program. In addition, the service offers assistance to employers in developing and implementing an effective safety and health program. No penalties are proposed or citations issued for hazards identified by the consultant. OSHA provides consultation assistance to the employer with the assurance that his or her name and firm and any information about the workplace will not be routinely reported to OSHA enforcement staff. For more information concerning consultation assistance, see OSHA's website at www.osha.gov.

Strategic Partnership Program

OSHA's Strategic Partnership Program helps encourage, assist and recognize the efforts of partners to eliminate serious workplace hazards and achieve a high level of worker safety and health. Most strategic partnerships seek to have a broad impact by building cooperative relationships with groups of employers and workers. These partnerships are voluntary relationships between OSHA, employers, worker representatives, and others (e.g., trade unions, trade and professional associations, universities, and other government agencies).

For more information on this and other agency programs, contact your nearest OSHA office, or visit OSHA's website at www.osha.gov.

OSHA Training and Education

OSHA area offices offer a variety of information services, such as technical advice, publications, audiovisual aids and speakers for special engagements. OSHA's Training Institute in Arlington Heights, IL, provides basic and advanced courses in safety and health for Federal and state compliance officers, state consultants, Federal agency person-

nel, and private sector employers, workers and their representatives.

The OSHA Training Institute also has established OSHA Training Institute Education Centers to address the increased demand for its courses from the private sector and from other federal agencies. These centers are colleges, universities, and non-profit organizations that have been selected after a competition for participation in the program.

OSHA also provides funds to nonprofit organizations, through grants, to conduct workplace training and education in subjects where OSHA believes there is a lack of workplace training. Grants are awarded annually.

For more information on grants, training and education, contact the OSHA Training Institute, Directorate of Training and Education, 2020 South Arlington Heights Road, Arlington Heights, IL 60005, (847) 297-4810, or see Training on OSHA's website at www.osha.gov. For further information on any OSHA program, contact your nearest OSHA regional office listed at the end of this publication.

Information Available Electronically

OSHA has a variety of materials and tools available on its website at www.osha.gov. These include electronic tools, such as *Safety and Health Topics*, *eTools*, *Expert Advisors*; regulations, directives and publications; videos and other information for employers and workers. OSHA's software programs and eTools walk you through challenging safety and health issues and common problems to find the best solutions for your workplace.

OSHA Publications

OSHA has an extensive publications program. For a listing of free items, visit OSHA's website at www.osha.gov or contact the OSHA Publications Office, U.S. Department of Labor, 200 Constitution Avenue, NW, N-3101, Washington, DC 20210; telephone (202) 693-1888 or fax to (202) 693-2498.

Contacting OSHA

To report an emergency, file a complaint, or seek OSHA advice, assistance, or products, call (800) 321-OSHA or contact your nearest OSHA Regional or Area office listed at the end of this publication. The teletypewriter (TTY) number is (877) 889-5627.

Written correspondence can be mailed to the nearest OSHA Regional or Area Office listed at the end of this publication or to OSHA's national office at: U.S. Department of Labor, Occupational Safety and Health Administration, 200 Constitution Avenue, N.W., Washington, DC 20210.

By visiting OSHA's website at www.osha.gov, you can also:

- File a complaint online,
- Submit general inquiries about workplace safety and health electronically, and
- Find more information about OSHA and occupational safety and health.

OSHA Regional Offices

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(415) 625-2547

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Seattle, WA 98101-3212
(206) 553-5930

* These states and territories operate their own OSHA-approved job safety and health programs and cover state and local government employees as well as private sector employees. The Connecticut, Illinois, New Jersey, New York and Virgin Islands plans cover public employees only. States with approved programs must have standards that are identical to, or at least as effective as, the Federal OSHA standards.

Note: To get contact information for OSHA Area Offices, OSHA-approved State Plans and OSHA Consultation Projects, please visit us online at www.osha.gov or call us at 1-800-321-OSHA.

Occupational Safety
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