

Shipboard Pedestal Crane Safety

Providing proper training, performing regular inspections, and working within manufacturer's guidelines are all effective ways to reduce the number of incidents caused by the failure of vessel-mounted pedestal crane components.

Commercial fishing operations use pedestal cranes regularly, often in harsh and unpredictable environmental conditions, to unload catches, products, and supplies. Failures of vessel-mounted pedestal cranes due to inadequate maintenance, unapproved modifications, improper use, lack of training, and improper inspections have caused injuries and fatalities on and around commercial fishing vessels. These incidents are often caused by failed components such as masts, booms, and lift cables. Employers should develop a detailed crane safety plan, which ensures that operators are trained, cranes are certified, and that operations are performed in line with the manufacturer's guidelines and industry best practices.

Certification Requirements

Shipboard pedestal cranes must be tested and certified in accordance with [29 CFR 1918.11](#). Employers should use and maintain all cranes in accordance with the manufacturer's specifications and never exceed the safe working load (SWL). The crane, its components, or attachments should never be modified to increase their lifting capacity without the manufacturer's consent. Any modifications must fully comply with engineering calculations made, or accepted by, the accredited certification agency ([29 CFR 1919.14\(c,e\)](#)).

Training

Shipboard crane operators must be competent to operate the crane by training or experience ([29 CFR 1918.98](#)). Employers should consult the crane manufacturer's operating manual for applicable training and safe use requirements. Crane operators must understand the operating instructions, signs, and hand signals to be used before proceeding ([29 CFR 1918.98](#)). Operating instructions and hand signal posters should be readily accessible and visible to everyone working on or near a shipboard crane, such as in the cab of the crane or on the pedestal.



Photo: NPFVOA — North Pacific Fishing Vessel Owners Association

Shipboard pedestal cranes are used to move a wide range of materials safely and efficiently.

Inspection and Operation

Safe operation of shipboard pedestal cranes requires careful attention by all workers involved. Shipboard pedestal cranes and derricks must be thoroughly examined and load tested before being put into service initially, regularly examined every 12 months, and thoroughly re-examined and proof-load tested every 5 years in

accordance with [29 CFR Part 1919](#) (see OSHA Instruction [CPL 02-01-055](#), *Maritime Cargo Gear Standards and 29 CFR Part 1919 Certification*, dated September 30, 2013 for additional information).

All crane components, such as those listed below, must be inspected immediately prior to and at appropriate intervals during each use to identify any unsafe conditions or defects ([29 CFR 1918.51\(b\)](#)). This list is only an example, as shipboard pedestal cranes come in many different configurations. Employers must follow [29 CFR 1918.55](#) for inspections and operation, and should consult the crane manufacturer's guidelines for the proper inspection procedures for each specific crane. Additionally, employers must post the SWL for each crane at the boom heel as required by [29 CFR 1919.21\(a\)](#).

If any of the following conditions are found on a pedestal crane aboard a vessel, the affected equipment must be taken out of service and repaired or replaced according to the manufacturer's specifications prior to beginning any lifting activities ([29 CFR 1918.51\(b\)](#), [29 CFR 1918.55\(a\)](#)).

Each stage of crane operations aboard a ship may pose a variety of potential hazards. Developing a checklist specific to the worksite, operators, and site hazards that includes what to look for before, during, and after the operation, helps to ensure that all critical areas are inspected or addressed. Employers should train workers on the use of those checklists.

Equipment Inspection

Supporting structure

Missing appropriate and legible warning labels

Rotation system

Improper lubrication of the sheaves or sheave pins; excessive sheave and sheave pin wear

Boom section

Damaged slide pads; improper lubrication; bent boom tip; grooves in the side plates or the flanges

Hydraulic system/hoses

Hose cracks or leaks; loose connectors

Winch system/wire rope

Incorrect spooling; damaged rope (kinked, birdcaged, crushed, etc.); broken wires that exceed the number allowed; loose or insufficient mounting bolts; poor or missing welds; hydraulic hoses in poor condition; excessive rust or lack of lubrication

Load block

Damaged or missing sheaves, side plates or bolts, sheave pin and keeper, swivel and hook, or wedge socket; hoist line termination improperly secured; damaged/broken wires; improper lubrication; damaged or missing hooks or hook safety latches

Rigging gear

Damaged or missing pins; damaged or missing hooks or hook safety latches; damaged slings; missing capacity tags; damaged or elongated chain rings

Attachments/baskets

Missing load ratings/capacity; damaged or missing components that could hinder proper functioning or increase potential for failure (e.g., doors that do not close on manbaskets)



All workers should be trained on the safe operation of shipboard pedestal cranes.

Photo: NPFVOA — North Pacific Fishing Vessel Owners Association

The following checklist examples could apply to most worksites on vessels. The checklists should include OSHA requirements as well as industry best practices as shown below.

Pre-Operation	
<p>Employers must ensure:</p> <ul style="list-style-type: none"> ✓ A pre-inspection of all cargo handling gear components is performed (§1918.51(b)) ✓ The crane control levers are in good working condition (§1918.55(c)(5)) ✓ Work area (swing radius) is guarded or secured to prevent personnel from entering (§1918.55(c)(1)) ✓ Personnel are not under the load (§1918.81(k)) ✓ Obstructions or workers are not in the swing radius (§1918.55(c)(1)) ✓ The load is rigged with the appropriate lifting gear (§§1918.51, 1918.54, 1918.81) ✓ The weight of the load does not exceed the SWL (§1918.51(a)) ✓ Visibility is good (§§1918.55(b), 1918.81(i)) 	<p>In addition, employers should verify that:</p> <ul style="list-style-type: none"> ✓ Safety meetings are held ✓ Crane operators and all workers involved understand the tasks and their roles ✓ Calculations are performed and understood by all (SWL) ✓ There is sufficient room for lift and swing ✓ Operations are isolated from high traffic areas ✓ Weather conditions are safe ✓ Sufficient time is allowed to complete the task ✓ Any other hazards unique to the operation are identified ✓ Power lines are not in the lift vicinity
During Crane Operations	
<p>Employers must ensure:</p> <ul style="list-style-type: none"> ✓ Personnel are not under the load (§1918.81(k)) ✓ Crane operators are competent to operate the crane by training or experience (§1918.98(a)(1)) ✓ Operators are fit to proceed (not taking medication that may negatively affect reaction time and decision-making abilities, not fatigued, no impaired eyesight or hearing, etc.) (§1918.98(a)(2)) ✓ Workers are wearing hard hats, personal flotation devices, and other required personal protective equipment (PPE) (§1918 Subpart J) 	<p>In addition, employers should verify that:</p> <ul style="list-style-type: none"> ✓ Crane operators and supporting workers are trained and authorized on the equipment/task ✓ Operators are familiar with control functions ✓ Controls are appropriately positioned before starting ✓ Workers are wearing high-visibility vests ✓ A designated signal person is in place and trained on hand signals ✓ Hand signals are understood by everyone on site ✓ All distractions (cell phones, cameras, other electronics) are eliminated
Post Operation	
<p>Prior to leaving a crane unattended, employers must verify the following (§§1918.55(d), 1918.66(b)(4)):</p> <ul style="list-style-type: none"> ✓ The load is lowered to the deck (do not leave the load suspended), unless the storage or maximum hoisting position of the suspended device provides an equivalent level of safety ✓ The boom is lowered or secured from movement ✓ The power supply is turned off ✓ Crane is secured from accidental travel ✓ Safe egress (exit) is provided for the operator (§1918.66(a)(18)) 	

Properly training crane operators and other workers, establishing crane inspection guidelines, and following manufacturer’s guidelines are all effective ways to reduce the hazards associated with working around vessel-mounted pedestal cranes. Following site-specific procedures based on the checklists above will help to prevent injuries from occurring as a result of lifting activities. Employers should consult industry references as well as the crane manufacturer’s operating manuals and address all hazards unique to their shipboard operations when developing their crane safety plan.

Other Resources

- U.S. Coast Guard — Commercial Fishing Vessel Safety Program
- ASME B30.5 — Mobile Crane Hand Signals

Workers' Rights

Workers have the right to:

- Working conditions that do not pose a risk of serious harm.
- Receive information and training (in a language and vocabulary the worker understands) about workplace hazards, methods to prevent them, and the OSHA standards that apply to their workplace.
- Review records of work-related injuries and illnesses.
- File a complaint asking OSHA to inspect their workplace if they believe there is a serious hazard or that their employer is not following OSHA's rules. OSHA will keep all identities confidential.

- Exercise their rights under the law without retaliation, including reporting an injury or raising health and safety concerns with their employer or OSHA. If a worker has been retaliated against for using their rights, they must file a complaint with OSHA as soon as possible, but no later than 30 days.

For additional information, see [OSHA's Workers page](#).

How to Contact OSHA

Under the Occupational Safety and Health Act of 1970, employers are responsible for providing safe and healthful workplaces for their employees. OSHA's role is to ensure these conditions for America's working men and women by setting and enforcing standards, and providing training, education and assistance. For more information, visit www.osha.gov or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.



U.S. Department of Labor



This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: 1-877-889-5627.

