



Marine Terminals Operations Program

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1. PURPOSE

The purpose of this Operations program is to ensure that the applicable requirements of the OSHA Longshoring and Marine Terminal regulations are met.

2. SCOPE

The requirements of this program apply to Mosaic Facilities with marine operations including loading, unloading, movement, or other handling of cargo.

All cargo transfers accomplished with the use of shore-based material handling devices are governed by the program.

3. DEFINITIONS

- 3.1 Conveyor – a device designed exclusively for transporting bulk materials in a predetermined path and having fixed or selective points of loading or discharge.
- 3.2 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.
- 3.3 Dock – a wharf or pier forming all or part of a waterfront facility.
- 3.4 Loose Gear – removable and replaceable components of equipment or devices which may be used with material handling units for the purpose of making connections, changing line directions, or multiplying mechanical advantage. Examples are shackles and snatch blocks.
- 3.5 Coaming – raised curb or rim around an opening on a ship's deck designed to keep out water.
- 3.6 Fender – device on the side of piers or docks for absorbing impacts or reducing friction.
- 3.7 Gangway - ramp-like or stair-like means of access provided to enable personnel to board or leave a vessel.
- 3.8 Longshoring - loading, unloading, moving or handling of cargo, ship's stores, gear, or any other materials, into, on, or out of a vessel.
- 3.9 Marine Terminal - piers, docks and other berthing locations including adjacent areas and structures which are devoted to receiving, handling, holding, loading or delivery of waterborne cargo, including areas devoted to the maintenance of the terminal or equipment, storage and structures associated with the primary movement of cargo or materials from vessel to shore or shore to vessel.

4. RESPONSIBILITIES

- 4.1 The marine terminals leadership shall be responsible for overall compliance with the Operations rules at the Marine Terminals.
- 4.2 All Employees shall be responsible for adherence to the operations rules.

5. REQUIREMENTS

5.1 General

- 5.1.1 At least one person holding a valid first aid certificate shall be at the Marine Terminal when work is in progress.
 - a. A first aid kit shall be available at the terminal.
 - b. First aid kits shall be weatherproof and contain individual sealed packages for each item that must be kept sterile.
 - c. The contents shall be checked at intervals that allow prompt replacement of items consumed.
- 5.1.2 Stretchers



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- a. There shall be available for each vessel being worked one Stokes basket stretcher or equivalent, permanently equipped with bridles for attaching hoisting gear.
 - b. Stretchers shall be kept close to vessels and shall be positioned to avoid damage from dock operations.
 - c. A blanket or other suitable covering shall be available.
 - d. Stretchers shall have at least four sets of effective patient restraints in operable condition.
 - e. Lifting bridles shall be of adequate strength, capable of lifting 1,000 pounds (454 KG) with a safety factor of five (5) and shall be maintained in operable condition.
- 5.1.3 Cargo handling operations shall not be carried on when noise-producing maintenance, construction or repair work interferes with the communication of warnings or instructions.
- 5.1.4 Open flames are prohibited unless permitted by area permit writers.
- 5.1.5 Vehicle parking in marine terminals shall be allowed only in designated areas.
- 5.1.6 Maximum safe load limits, in pounds per square foot, of floors elevated above ground level, and pier structures over the water shall be conspicuously posted in all cargo areas.
- 5.1.7 Working and walking areas shall be of an average minimum light intensity of 5 foot-candles.
- 5.1.8 Employees will not use the vessel's cargo handling equipment for any of the Marine Terminal job tasks.
- 5.2 Personnel
- 5.2.1 Qualifications
- a. Only those employees determined by the employer to be competent by reason of training or experience, and who understand signs, notices and operating instructions shall be permitted to operate a crane, winch or other power operated cargo handling apparatus. *Exception:* Employees being trained or supervised by a competent person may operate such machinery during training.
 - b. No employee known to have defective uncorrected eyesight or hearing, or to be suffering from heart disease, epilepsy, or similar ailments that may suddenly incapacitate the employee, shall be permitted to operate a crane, winch or other power-operated cargo handling apparatus. (OSHA 1917.27(a)(2))
 - i. Note: Employers who act in accordance with the Americans with Disabilities Act (ADA), 42 U.S.C. 12101 (1990) employment provisions will be considered in compliance.
 - c. Supervisory Accident Prevention Proficiency (OSHA 1917.27(b))
 - i. Immediate supervisors of cargo-handling operations of more than five (5) persons shall satisfactorily complete a course in accident prevention within ninety (90) days of assignment.
- 5.3 Working Near Water
- 5.3.1 Employees shall wear Coast Guard approved floatation devices when:
- a. In any area that is posted as a life vest area.
 - b. On a waterside of a terminal dock not protected by guardrails, nets, or lifelines.



- c. Handling ship's lines.
- d. On gangways, ships or barges that do not have adequate handrails.
- e. Working within 10' of water.
- 5.3.2 A Coast Guard approved thirty (30) inch life ring with at least ninety (90) feet of rope shall be available at waterside work areas.
- 5.3.3 A ladder for rescue shall be available, within two hundred (200) feet of the work area.
- 5.4 Cranes and Derricks
 - 5.4.1 Reference Mosaic's Mobile Crane Program.
- 5.5 Winches
 - 5.5.1 Moving parts which present caught-in hazards to employees shall be guarded.
 - 5.5.2 Winches shall have clearly identifiable stop controls
 - 5.5.3 Portable winches shall be secured against accidental shifting while in use
 - 5.5.4 At least three (3) full turns of rope shall remain on un-grooved drums, and two turns on grooved drums, under all operating conditions.
- 5.6 Conveyors
 - 5.6.1 Reference Mosaic's Conveyor Program
- 5.7 Certification of Marine Terminal Handling Devices
 - 5.7.1 The terminal operator shall not use any material handling devices until that device has been certified.
 - 5.7.2 Handling Devices listed below shall be certified in the following manner:
 - a. Cranes and Derricks - Annually
 - b. Bulk Cargo spouts and associated rigging – Annually
 - c. Bucket Conveyors and supporting structures – Annually
 - 5.7.3 Certificates and inspection and test records attesting to tests required by this section shall be available for inspection upon request from regulating agencies.
 - 5.7.4 Certification procedures shall not be construed as a substitute for normal operational inspection and maintenance routine.
 - 5.7.5 When certificated equipment is out of service for 6 months or more beyond the due date of a certification inspection, an examination equivalent to an initial certification, including unit proof load test, shall be performed before the equipment re-enters service.
- 5.8 Maintenance and Load Limits
 - 5.8.1 The structural integrity of docks, piers, wharves, terminals and working surfaces shall be maintained.
 - 5.8.2 Maximum safe load limits, in pounds per square foot (kilograms per square meter), of floors elevated above ground level, and pier structures over water shall be conspicuously posted in all cargo areas.
 - 5.8.3 Maximum safe loads shall not be exceeded.
 - 5.8.4 All walking and working surfaces shall be maintained in good repair.
- 5.9 Guarding of Edges
 - 5.9.1 Vehicle protection
 - a. Curbs, bull rails, or other effective barriers, installed prior to October 3, 1983, at least six (6) inches (15.24 cm) in height shall be provided at the waterside edge.

- b. Curbs, bull rails, or other effective barriers, installed after October 3, 1983, are required to be at least ten (10) inches high (25.4 cm).

5.10 Employee Protection

- 5.10.1 Guard rails shall be provided at the following locations which present a falling hazard of more than four (4) feet or into the water;

- a. Where employees are exposed to floor or wall openings or waterside edges
- b. Bridges or gangways leading to pilings or vessel mooring installations.

- 5.10.2 Guard rails shall meet the following criteria;

- a. Capable of withstanding a force of at least 200 pounds (890 N) applied in any direction at mid-span of the top rail.
- b. Shall consist of top rails and midrails.
 - i. Midrails shall be positioned at approximately half the height of the top rail.
 - ii. Top surface of guardrails installed before October 3, 1983, shall be at least 36 inches (.91 m) high. Those installed after October 3, 1983, shall be 42 inches (1.07 m) plus or minus 2 inches.
- c. Any non-rigid railing such as chain or wire rope shall have a maximum sag limit at the mid-point between posts of not more than 6 inches (15.24 cm)

- 5.10.3 Toe boards

- a. Shall be provided when employees below could be exposed to falling objects such as tools.
- b. Toe boards shall be at least 3 ½ inches (8.9 cm) in height from top edge to floor level, and be capable of withstanding a force of 50 pounds (222 N) applied in any direction.

- 5.10.4 Stair Railings

- a. Shall be capable of withstanding a force of at least 200 pounds (890 N) applied in any direction.
 - i. Shall not be more than 36 inches (0.91 m) nor less than 32 inches (0.81 m) in height from the upper top rail surface to the tread surface in line with the leading edge of the tread.
 - ii. Railings and midrails shall be provided at any stairway having four or more risers, as follows;
 - A. Stairways less than 44 inches (1.12 m) wide, at least one railing
 - B. More than 44 inches 91.12 m) but less than 88 inches (2.24 m) wide, a stair rail or handrail on each side.
 - C. If more than 88 inches (2.24 m) wide, an additional intermediate handrail.
- b. Railings shall be maintained free of sharp edges and in good repair.

5.11 Fixed Ladders

- 5.11.1 Definitions

- a. Cage – a barrier enclosing or nearly enclosing a ladder's climbing space and fastened to one or both of the ladder's side rails to another structure.
- b. Fixed Ladder – a ladder permanently attached to a structure, building or piece of equipment.
- c. Ladder Safety System – A system attached to a fixed ladder designed to eliminate or reduce the possibility of a worker falling off the ladder. A ladder safety system usually consists of a carrier, safety sleeve, lanyard, connectors, and body harness. Cages and wells are not considered ladder safety systems.
- d. Well – a permanent complete enclosure around a fixed ladder, which is attached to the walls of the well.

- e. Defects – ladders with broken, split or missing rungs, steps or rails, broken welds or connections, corrosion or other defect which may affect safe use shall be removed from service. Repairs shall provide strength at least equivalent to that of the original ladder.
- f. Ladder Specifications
 - i. Refer to Engineering PIP *STE05501 – Fixed Ladders Design Guide* and *STF05501 – Fixed Ladder Fabrication Details*
 - ii. Refer to Phosphates Business Unit Program: *EHSS-Phos Program Fall Protection* for fixed ladder requirements

5.12 Employee Exits

- 5.12.1 Employee exits shall be clearly marked
- 5.12.2 If an employee exit is not visible from employee's workstations, directional signs indicating routes to the exit shall be posted.
- 5.12.3 Exits shall be readily accessible and sufficient in number to provide employees with a convenient means of escape in emergencies. A clear passage to the exit shall be maintained.
- 5.12.4 The minimum width of any employee exit shall be 28 inches (71.12 cm)

5.13 Illumination

- 5.13.1 All working and walking areas shall be illuminated.
- 5.13.2 Illumination in active work areas shall be illuminated with an average minimum light intensity of 5 foot-candles.
- 5.13.3 The illumination in other work areas shall be of an average minimum light intensity of 1 foot-candle.
- 5.13.4 Where occasional work tasks require more light, supplemental lighting shall be used.

5.14 Sanitation

- 5.14.1 Washing and Toilet facilities
 - a. Washing and toilet facilities sufficient for the sanitary requirements of employees.
 - i. Running water, including hot and cold or tepid water at a minimum of one accessible location.
 - ii. Soap shall be provided
 - iii. Individual hand towels or air blowers shall be provided
 - iv. Fixed or Portable toilets in separate compartments with latch equipped doors.
 - v. Separate toilet facilities shall be provided for female and male employees except when toilet rooms will be occupied by only one person at a time,
 - b. Washing and toilet facilities shall be regularly cleaned and maintained in good order
- 5.14.2 Drinking Water
 - a. Potable drinking water shall be accessible to employees at all times.
- 5.14.3 Eating Areas
 - a. Consumption of food or beverages in areas where hazardous materials are being stored or handled shall be prohibited

5.15 Signs and marking

- 5.15.1 General
 - a. Signs required by this part shall be clearly worded and legible, and shall contain a key word or legend indicating the reason for the sign.
 - i. Key words are such words as Danger, Warning, Caution



- ii. Legends are more specific such as High Voltage, Close Clearance, Pedestrian Crossing
- b. Specific Signage
 - i. Every marine terminal shall have conspicuously posted signs as follows:
 - A. Location of first aid facilities
 - B. Location of telephones
 - C. Telephone numbers of emergency services
 - D. Location of firefighting and emergency equipment and fire exits

5.16 Line Handling

- 5.16.1 In order to provide safe access for handling lines while mooring and un-mooring vessels, cargo vehicles or material shall not be stowed or placed where they obstruct the work surface to be used.
- 5.16.2 Employees handling wire rope mooring lines will be required to wear gloves.
- 5.16.3 Employees shall stay on inshore side when handling mooring lines so not to get tangled in heaving line.
- 5.16.4 Either a supervisor or experienced shipping employee shall be in charge of each line-handling group.
- 5.16.5 Each line-handling group shall have a radio for communication between them and the shipping supervisor.
- 5.16.6 Employees shall stand clear of all lines being thrown or winched from the ship or when lines are being tightened.
- 5.16.7 At least 2 employees are required when handling ship's lines.

5.17 Gangways

- 5.17.1 Gangways shall not be less than 20 inches in width, of adequate strength, maintained in safe repair and safely secured to vessel when in use.
- 5.17.2 Handrails with a minimum height of approximately 33 inches and equipped with midrails shall be installed on both sides of all gangways.
- 5.17.3 Rails shall be of pipe, chain, wire, rope or materials of equivalent strength and shall be kept taut. Portable stanchions supporting railings shall be supported or secured to prevent accidental dislodgment.
- 5.17.4 Gangway shall be kept properly trimmed.
- 5.17.5 Where the gangway overhangs the water so that there is danger of employees falling between the ship and the dock, a net, handrail or suitable protection shall be provided.



- 5.17.6 If the foot of a gangway is more than one foot away from the edge of the apron, the space between them shall be bridged by a walkway equipped with handrails on both sides with a minimum height of approximately 33 inches and equipped with midrails.
- 5.17.7 Gangways shall be kept clear of supporting bridles and other obstructions, to provide unobstructed passage. If, because of design, the gangway bridle cannot be moved to provide unobstructed passage, then the hazard shall be properly marked to alert employees of the danger.
- 5.17.8 Obstructions shall not be laid on or across the gangway.
- 5.17.9 Handrails and walking surfaces of gangways shall be maintained in a safe condition to prevent employees from slipping or falling.
- 5.17.10 Access to a vessel by any means other than a gangway must be reviewed and approved by dock supervision and Safety Superintendent prior to use.
- 5.17.11 Gangway lifting bridles shall be inspected prior to each use.
- 5.18 Working on Vessels or Fertilizer Barges
- 5.19 Employees shall not be allowed in Holds of Vessels or Barges without the issuance of a Confined Space Entry Permit.
 - 5.19.1 A Confined Space can be reclassified as a Non-Permit Space if the space contains no actual or potential atmospheric hazards, if all other hazards are recognized and a process to protect personnel from those hazards is approved by the site supervisor.
 - 5.19.2 The holds of vessels and open top barges may be reclassified as a Non-Permit Space if certified through historical testing that in routine fertilizer use, no atmospheric hazards are present.
 - 5.19.3 Re-Classified barge(s) routinely used in hauling similar cargo must be tested and determined free of atmospheric hazards and the certification made available to all employees for review. Testing must be done annually.
 - 5.19.4 The reclassification is valid only as long as hazards are eliminated.
 - 5.19.5 If hazards are reintroduced into a space, the space becomes a Permit Confined Space again.
- 5.20 Hatches around which employees must work that are not protected to a height of 24 inches by coamings shall be guarded by railings at a height of 42 inches or employees shall be protected by fall protection.
 - 5.20.1 Rails shall be of pipe, chain, wire, rope or materials of equivalent strength and shall be kept taut.



- 5.20.2 Portable stanchions supporting railings shall be supported or secured to prevent accidental dislodgment.
- 5.20.3 Employees are not permitted to walk on tarpaulin or any of the rigging that fastens tarpaulin to vessel hatches.
- 5.21 Direct communication shall be provided between the discharge or shipboard control end of loading spouts and chutes and the point in the terminal from which the flow of cargo is controlled.
- 5.22 Hatch beams, covers and pontoons shall be stored in a stable condition that will prevent them from falling against an employee.
- 5.23 The officer in charge of the vessel shall be notified before bringing aboard internal combustion or electric powered tools, equipment or vehicles.
- 5.24 The officer in charge of the vessel shall be notified before using the ship's electric power for the operation of any electric tools or equipment.
- 5.25 Hot Work
 - 5.25.1 All hot work shall be performed in accordance with Mosaic's Welding/Cutting and Hot Work Program.
 - 5.25.2 No hot work of any type will be allowed while ships are taking on fuel or being actively unloaded.
- 5.26 Prohibited Operations
 - 5.26.1 Spray painting and abrasive blasting operations shall not be conducted in the vicinity of cargo handling operations.
 - 5.26.2 Welding and burning operations shall not be conducted in the vicinity of cargo transfer operations.
- 5.27 Vehicles driven on docks
 - 5.27.1 Vehicle Daily Prior-to-Use Inspection shall be required of all vehicles prior to being driven on docks. (See Vehicle and Roadways Program Appendix B for [vehicle inspection form](#) and [Heavy Mobile Equipment Appendix A – Daily-Prior-To-Use Checklist](#).)
 - 5.27.2 Drivers shall observe all traffic and safety rules.
 - 5.27.3 Vehicles shall be equipped with front lights, a horn, and a high visibility flashing light
 - 5.27.4 Vehicles shall not be driven on catwalks, pedestrian bridges, elevators or truck dumps.
 - 5.27.5 Hands and feet shall be kept inside all open cab vehicles at all times.
 - 5.27.6 Seat belts shall be worn in all vehicles that come factory equipped with seat belts.



6. SHIPLOADER/UNLOADER AND HOIST INSPECTIONS

6.1 Shiploaders

- 6.1.1 Daily prior-to-use inspection – Appendix A - Operator Pre-Use Check of Shiploader/Unloader.
- 6.1.2 Monthly Inspection. – 30 Day Shiploader/Unloader PM.
- 6.1.3 Annual Inspection – To be certified by a vendor qualified to provide Marine Terminals inspections.

6.2 Shiploader/Unloader Service Hoists:

- 6.2.1 Daily prior-to-use inspection - [Daily Prior-to-Use Overhead Cranes Inspections](#).
- 6.2.2 Monthly Inspection – In accordance with the Overhead Cranes and Powered Hoists Inspections.
- 6.2.3 Annual Inspection – To be certified by a vendor qualified to provide Marine Terminals inspections.
- 6.2.4 Quadrennial Load Test - To be certified by a vendor qualified to provide Marine Terminals inspections.

- 6.3 When certified equipment is out of service for 6 months or more beyond the certification inspection due date, an examination equivalent to an initial certification, including unit proof load test, shall be performed before the equipment re-enters service.

7. DOCUMENTATION

- 7.1 All inspection scheduling, except for Daily prior-to-use inspections, shall reside in SAP.
- 7.2 Copies of Daily prior-to-use inspections shall be maintained in a filing system by Operations and retained for a period of 30 days.
- 7.3 Copies of Monthly Inspections shall be maintained in a filing system by Maintenance and retained for a period of 1 year.
- 7.4 Copies of Annual Inspections shall be maintained in a filing system by Maintenance and retained for a period of 5 years.
- 7.5 Copies of Quadrennial Load Tests shall be maintained in a filing system by Maintenance and retained for the life of the asset.

8. PROGRAM REVIEW

- 8.1 This program and the attached appendices shall be reviewed in the document management system every seven (7) years for accuracy and completeness by the Safety and Marine Terminal's Personnel.



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9. APPENDICES

9.1 Appendix A - Operator Pre-Use Check of Shiploader.

10. REFERENCES

10.1 OSHA

10.1.1 29 CFR 1917, Safety and Health Regulations for Marine Terminals

10.1.2 29 CFR 1918, Safety and Health Regulations for Longshoring

10.1.3 29 CFR 1918, Gear Certification

10.1.4 29 CFR 1910.28(b)(9)

11. REVISION LOG

Revision Log				
Rev. No.	Requested By	Approved By	Revised By	Rev. Date
0	Initial Issue (information from orig. Mar. Terminals ESM prepared by task Team and approved by SAP, Nov., 2000)	R. Collins, R. Kobosky	MT Implementation Team	1/9/03
1	R. Collins	R. Collins	R. Collins, C. Rogers	1/23/04
1	Reformat for ISO		D. Allen	9/29/2011
2	Safety Department		Gerald Lasseigne	3/2/2012
3	Mike Neal	Mike Neal	Gerald Lasseigne	8/20/12
4	Mike Neal	Mike Neal	Gerald Lasseigne	9/12/12
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