



Container Procedure

Operations Procedures

Document #: PRO-029	Title: Operations Procedures Container Procedure	Version # 2.0
-------------------------------	---------------------------------------------------------------	-------------------------

Reviewed By: H&S Committee	Date Reviewed: 08 July 2021
Approved By: H&S Committee	Date Approved: 08 July 2021
Issue Date: 20 July 2021	

Table of Contents

1.0	<i>Purpose</i>	1
2.0	<i>Overview</i>	1
3.0	<i>Legislation and Literature</i>	1
4.0	<i>Personal Protective Equipment (PPE)</i>	1
5.0	<i>General Safety Requirements</i>	2
6.0	<i>Procedure - Discharge 53ft Containers with Gantry Crane – Under Deck</i>	2
6.1	Preparation	2
6.2	Container Discharge from Vessel with Gantry Crane – Under Deck	2
6.3	Safety Precautions – Discharge from Vessel	3
7.0	<i>Procedure – Empty Containers Receiving from Vessel</i>	4
7.1	Preparation	4
7.2	Stockpiling	4
7.3	Handling Empty Containers - Receiving from Vessel	4
7.4	Checker Duties	5
8.0	<i>Procedure – Full Containers Receiving from Vessel</i>	5
7.1	Preparation	5
7.2	Stockpiling	5
7.3	Handling Empty Containers - Receiving from Vessel	6
7.4	Checker Duties	7
9.0	<i>Procedure – Container Delivery to Truck</i>	7
8.1	Preparation	7
8.2	Handling Containers – Delivery to Truck	7
8.3	Checker Duties	8
10.0	<i>Hazards</i>	9
11.0	<i>Appendices</i>	9
12.0	<i>Revision Record</i>	12

1.0 Purpose

This document provides a procedure for container discharge from vessels, container handling and delivery to truck, with the intention to minimize the risk of injury and product damage.

2.0 Overview

Intermodal freight containers are reusable containers designed to be moved from one mode of transport to another without unloading and reloading their cargo. Specialized shipping containers include high cube containers, pallet wides, open tops, side loaders, double door and temperature controlled containers. ISO Standard container lengths are 8ft, 10ft, 20ft and 40ft, however the USA and Canada also use longer units of 45ft, 48ft and 53ft. The 53ft container is 9'6" in height and represents the largest size a standardized truck is authorized to carry on roadways. ISO containers have castings with openings for twist lock fasteners at each of the eight corners, to allow for gripping of the box from above, below or the side.

Containers can be transported by vessel either under deck or on deck.

3.0 Legislation and Literature

Part XIV of the Canadian Occupational Safety and Health (COSH) Regulations addresses Materials Handling, which requires operators of motorized equipment to be protected from falling objects (section 14.4), restricts non-authorized workers from a materials handling area (section 14.38), and most importantly, requires that, "...all materials...must be stored in a manner so that there is no risk to the health and safety of any employee" (section 14.50 (f)). Of course, COSH regulations, Part XIX, (Hazard Prevention Programs) require employers to implement and monitor a program to prevent hazards.

4.0 Personal Protective Equipment (PPE)

Below outlines the minimum required PPE for Squamish Terminals:

- Safety Footwear in Accordance with Industry Standard (CSA Approved 6" Boots)
- High Visibility Apparel (Compliant with CSA Standard Z96-15 High-Visibility Safety Apparel)

In addition all workers on vessels, working under the swing of the boom, changing liners on rail cars and working around reachstacker or under lifted forks must wear:

- CSA Approved Hard Hat (CSA Type 2)

Specific tasks or jobs may require additional PPE including, but not limited to:

- Hearing Protection
- Eye Protection
- Task appropriate gloves

5.0 General Safety Requirements

- Foreman discusses container discharge operational plan with crew to ensure Longshore understand operation, safety and PPE. Tool box talk to ensure all workers are aware of hazards and understand the procedure.
- All workers must wear all required Personal Protective Equipment
- If fall hazard exists, workers must use proper fall protection
- All drivers must wear seatbelts while driving machinery and trucks
- No use of electronic devices while on site (lunchroom only)
- No smoking on site, smoking in designated smoking shelter only
- Drugs or alcohol strictly prohibited
- Ensure required / effective communication at all times (i.e. radio, hand signals, eye contact, etc.)
- Safe hatch entrance practices to be adhered to.
- Environmental hazards to be identified, eliminated and/or controlled
- Equipment that is not operating properly must be reported immediately
- Watch for moving machinery
- When working with partners, be aware of what the others are doing
- Always maintain clean working area
- NEVER STAND IN THE BIGHT

6.0 Procedure - Discharge 53ft Containers with Gantry Crane – Under Deck

6.1 Preparation

Ensure all equipment is operational and ready, including:

- Appropriate and rated stevedoring gear (HK Cutters, wrenches, pry bars, sledge hammers)
- Container frame needed for the gantry crane
- Protection Equipment (PPE) – minimum requirement includes safety vests, steel toed boots, gloves and hard hats. (Hard hats needed while working under the swing of the boom).
- Fall Protection if needed
- Cone stacker bins

6.2 Container Discharge from Vessel with Gantry Crane – Under Deck



- 1) For Hold Entry, follow safe work practices, if in doubt talk to Foreman
- 2) The hold men access the hold to remove the container lashing, when accessing the hold, portable ladders must be secured properly
- 3) If fall hazard exists, workers must use proper fall protection (working less than 1.8m to the leading edge, fall potential greater than 2.4m high)
- 4) Due to overhead hazards, while the holdmen are unlashing on top of the cargo, all work performed down in the cargo hold must be ceased, ensure communication is established between workers and foremen while unlashing
- 5) Hold men remove all lashing materials from the top of the cargo before commencing discharge
- 6) Gantry crane operator ensures there are no workers in the cargo hold before operating the crane
- 7) The spreader is lowered on top of the container, it locks the four corners (corner castings) by a twist lock mechanism
- 8) The container is lifted and moved out of the hatch
- 9) Before taking the load out, the gantry operator must ensure that the dock is clear (no workers, containers or machinery)
- 10) Hold men must move to a safe location, so the load and/or frame does not pass over head and no one is in the bight
- 11) Sling men / Checkers / Lift trucks must remain clear of the landing area and maintain communication with the foremen and gantry operator
- 12) Gantry operator lowers the container to a comfortable height for cone stacker removal while ensuring a safe distance from the bull rail
- 13) Sling men remove the cone stackers manually and collect them in the designated bin
- 14) Sling men move to a safe area before the container is lowered to the ground
- 15) Safe practices to be followed when lifting lashing gear, bins etc.

6.3 Safety Precautions – Discharge from Vessel

- Cargo unlashing operation must be assessed visually and through communication between foremen and all workers
- Accessing cargo for unlashing shall be done in the safest way possible
- If using portable ladders, they must be properly secured
- If a fall hazard exists, fall protection must be used for any worker (working less than 1.8m to the leading edge, greater than 2.4m high)
- When unlashing, workers should be aware of hazards associated with stored energy (wires springing back, pinch points, crushing injuries, overhead and falling hazards)
- When unlashing containers, take safe position. Watch for lashing wire springing back when cutting
- All workers maintain visual awareness of and safe distance from moving machinery at all times
- Set up Save-all net or alternate barrier to prevent workers falling into water.
- Ensure proper lifting appliances and rigging practices are used at all times

7.0 Procedure – Empty Containers Receiving from Vessel

7.1 Preparation

Ensure all equipment is operational and ready, including:

- Reachstacker
- Protection Equipment (PPE) – minimum requirement includes safety vests, steel toed boots, gloves and hard hats. (Hard hats needed while working under the swing of the boom)

Organize materials and documentation, including:

- Various Forms (Check Sheets, Damage Reports, Summaries)
- Vessel Line up (distributed from Traffic)

7.2 Stockpiling

Each commodity has its own safe stockpiling requirements to be reviewed at time of stockpiling. SQT recommends keeping the pile as low as possible to a maximum of three (3) high, (if on gravel maximum two (2) high) completing a risk assessment reviewing weather conditions, ground/slope conditions, and space before stacking.

Containers should be stacked in an east – west direction on the terminal to allow for wind conditions.

The height that the container can be lifted by the Reachstacker is based on the weight of the container and the reach. Containers of different lengths will be stockpiled in different piles. In winter, consider the extra weight of heavy snow. Also, container piles should not be built upon snow or ice covered surfaces as the pile might slip or shift as the snow or ice melts.

Containers will be stepped down, to one (1) high at the face.

Worker safety

- Workers on foot should maintain a 10 ft. distance from the front or back of the container when machinery is in the area.
- When stockpiling adjacent to a safety walkway, container piles should start a minimum of 6 ft. from the safety walkway.
- Foremen should be notified of any instability in the pile, and the necessary safety precautions should be taken

7.3 Handling Empty Containers - Receiving from Vessel

1. Reachstacker driver lifts head above container, the spreader is lowered on top of the container, it locks the four corners (corner castings) by a twist lock mechanism
2. The Reachstacker driver lifts the container, and moves it to the assigned storage area on site.
3. At the assigned site, the Reachstacker driver lowers the head, setting the container down on the ground and releases the spreader;
4. When loading more than one container high, the next container must be lowered carefully on top of the previous one, ensuring that they are evenly stacked with no overhangs and properly aligned.

CAUTION:

- Before stacking, review weather conditions, ground/slope conditions, and space to determine height of stacking
- Always stand to side of the stack; no one should be standing in front or behind the containers while they are being stacked
- Maximum three (3) high on tarmac
- Maximum two (2) high on gravel
- Stack east to west formation
- Containers must be stepped down to one (1) high at face



7.4 Checker Duties

If a Checker is utilized, the Checker will perform the following duties for their gang/crew:

- Counts & Records containers
- Records Storage Location
- Record Any Damage
- Report Any Damage (to Foreman proactively during shift to prevent further damage from occurring)
- Submit Check Sheet
- Foreman to record daily production on Vessel Loading Summary Sheet

Types of damage the Checker should look for includes, but is not limited to the following:

- Holes, dents, twists
- Damaged doors

8.0 Procedure – Full Containers Receiving from Vessel

7.1 Preparation

Ensure all equipment is operational and ready, including:

- Reachstacker
- Protection Equipment (PPE) – minimum requirement includes safety vests, steel toed boots, gloves and hard hats. (Hard hats needed while working under the swing of the boom)

Organize materials and documentation, including:

- Various Forms (Check Sheets, Damage Reports, Summaries)
- Vessel Line up (distributed from Traffic)

7.2 Stockpiling

Each commodity has its own safe stockpiling requirements to be reviewed at time of stockpiling.

Verify weights of each container to determine suitable machine for handling.

SQT recommends keeping the pile as low as possible to a maximum of three (3) high, (if on gravel maximum two (2) high) completing a risk assessment reviewing weather conditions, ground/slope conditions, and space before stacking.

Containers should be stacked in an east – west direction on the terminal to allow for wind conditions.

The height that the container can be lifted by the Reachstacker is based on the weight of the container and the reach. Containers of different lengths will be stockpiled in different piles. In winter, consider the extra weight of heavy snow. Also, container piles should not be built upon snow or ice covered surfaces as the pile might slip or shift as the snow or ice melts.

Containers will be stepped down, to one (1) high at the face.

Worker safety

- Workers on foot should maintain a 10 ft. distance from the front or back of the container when machinery is in the area.
- When stockpiling adjacent to a safety walkway, container piles should start a minimum of 6 ft. from the safety walkway.
- Foremen should be notified of any instability in the pile, and the necessary safety precautions should be taken

7.3 Handling Empty Containers - Receiving from Vessel

- 1) If using Reachstacker, Reachstacker driver lifts head above container, the spreader is lowered on top of the container, it locks the four corners (corner castings) by a twist lock mechanism
- 2) The Reachstacker driver lifts the container, and moves it to the assigned storage area on site.
- 3) If containers are landed to trailer, use rubber mats on trailer to prevent container slipping, trailer transports container to the assigned storage site
- 4) If using Reachstacker, at the assigned site, the Reachstacker driver lowers the head, setting the container down on the ground and releases the spreader;
- 5) If using trailer, as the assigned site Reachstacker lifts container from trailer to storage location,
- 6) When loading more than one container high, the next container must be lowered carefully on top of the previous one, ensuring that they are evenly stacked with no overhangs and properly aligned.

CAUTION:

- Before stacking, review weather conditions, ground/slope conditions, and space to determine height of stacking
- Always stand to side of the stack; no one should be standing in front or behind the containers while they are being stacked
- Maximum three (3) high on tarmac
- Maximum two (2) high on gravel
- Stack east to west formation
- Containers must be stepped down to one (1) high at face



7.4 Checker Duties

If a Checker is utilized, the Checker will perform the following duties for their gang/crew:

- Counts & Records containers
- Records weight of containers
- Records Storage Location

- Record Any Damage
- Report Any Damage (to Foreman proactively during shift to prevent further damage from occurring)
- Submit Check Sheet
- Foreman to record daily production on Vessel Loading Summary Sheet

Types of damage the Checker should look for includes, but is not limited to the following:

- Holes, dents, twists
- Damaged doors

9.0 Procedure – Container Delivery to Truck



8.1 Preparation

Ensure all equipment is operational and ready, including:

- Reachstacker
- Personal Protection Equipment (PPE) – minimum requirement includes safety vests, steel toed boots and gloves. Hard Hat required when working under the lifted Reachstacker

Organize materials and documentation, including:

- Various forms (Checker Sheets, Damage Reports, Summaries)

8.2 Handling Containers – Delivery to Truck

All containers are transported off site by truck. The procedures below outlined how Squamish Terminals delivers containers from site to truck.

- 1) Management provides Foreman with location of start (a “section”).
- 2) Crew is dispatched to section where the foreman will discuss operational plan with crew to ensure Longshore understand operation, safety and PPE.
- 3) Reachstacker driver lifts head above container, the spreader is lowered on top of the container, it locks the four corners (corner castings) by a twist lock mechanism
- 4) Reachstacker Driver lifts a container from the pile and moves to truck location on site.
- 5) The Reachstacker driver lifts the container above the trailer, lowers the head and sets the container onto the trailer
- 6) Reachstacker driver releases the spreader and backs away
- 7) Truck driver is responsible for securing the container to the trailer.

Caution:

- Truck driver must not be securing the container while the Reachstacker is operating in the vicinity
- The Foreman, Labourer, Checker and Truck Driver must not stand at the side of the truck while it's being loaded.
- If direction has to be given to the Reachstacker Operator it must be done from a safe position.

8.3 Checker Duties

If a Checker is utilized, the Checker performs the following duties for each truck:

- Counts & Records containers, records container #
- Record Any Damage
- Report Any Damage (to Foreman proactively during shift to prevent further damage from occurring)
- Submit Check Sheet (to Foreman at end of shift)
- Checker records container # , truck # and other pertinent details on Delivery Receipt and submits to Foreman at end of shift

10.0 Hazards

As outlined in the Squamish Terminals (SQT) Health and Safety Policy, SQT is committed to providing a safe place of work for all employees, visitors and contractors. SQT is committed to the development, implementations and maintenance of a hazard prevention program (HPP) and methodology for managing hazards related to all activities at SQT.

As such, a Hazard and Risk Analysis has been completed for the Container Procedure. Hazards are detailed below:

- Slips, Trips, Falls on slippery / uneven surfaces
- Pedestrians exposure to being struck by site traffic
- Site vehicles / materials handling equipment striking other vehicles or stationary obstacles / equipment
- Accessing hold – fall from ladder
- Unlashing – stored energy in lashing cables - strike
- Poor ergonomics while unlashing – overexertion, musculoskeletal injuries
- Poor ergonomics while removing stacker cones – overexertion, musculoskeletal injuries
- Falling objects (equipment, cargo, debris, broken equipment, tools) – risk of being struck or crushed
- Overhead hazards – hook, frame, slings, cargo, equipment, gear
- Falling container - risk of being struck or crushed
- Working under raised Reachstacker – crushing injuries, overhead hazards
- Materials handling equipment - unstable load – tipping/rolling – whiplash, jarring, crushing injuries to driver
- Materials handling equipment - unstable load – tipping/rolling – crushing injuries to pedestrians
- Pinch Points
- Sharp edges / slivers / cuts / jiggers
- Exposure to elements (wind, sunburn, heat index, cold, dust)

11.0 Appendices

- A. Site Map
- B. Photos

Appendix A – Sample Site Map



Appendix B – Photos



Under deck stow



Lashing to tank top



Bridge fitting securing
position



Cable lashing connected by
Turn Buckle

12.0 Revision Record

Document	Rev	Date	Originator	Details of Change
PRO-029	1.0	2019-11-26	SQT	Original draft
PRO-029	2.0	2021-07-20	SQT	Added section 8 full containers receiving from vessel, updated map to current version, updated that containers should be stacked to max 3 high, included weight of each container must be verified, added rubber matting to be used if landing to trailer