

ANALYSIS OF THE OPERATIONAL PERFORMANCE OF LOADING AND UNLOADING CONTAINERS AT OPERATING TERMINAL 3 PORT OF TANJUNG PRIOK

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Abstract : This study aims to determine the operational performance of receiving, loading, unloading, delivery of containers at IPC Container Terminal 3 at PT. (Persero) Pelabuhan Indonesia II. The method used was direct field observation and interviews. In the process of loading and unloading at IPC Container Terminal 3, there has been obstacles frequently encountered such as, the TOS system errors, human errors, natural factors, and equipment damage. Therefore, the authors describe solutions to these problems, including periodic checks on the TOS system, Preventive maintenance needs to be carried out periodically on loading and unloading equipment, conducting training to improve HR skills for loading and unloading personnel so that their performance can be improved. In addition, the equipment should be used optimally, so that the process of loading and unloading containers can be faster and more efficient.

Keywords : Performance, Container, Receiving, Loading, Unloading, Delivery, Terminal container, Procedure.

1. Introduction

Sea freight transportation plays an important role in the field of shipping goods because freight transportation by sea is very efficient. Almost all imported goods, exports, and other cargo in large quantities are transported by ship. This is used to fully support Indonesia's economic growth and trade as well as a transportation and trade route for both domestic and foreign trades.

The definition of a port, according to Fair, is "... The port is a place which regularly provides accommodations for the transfer of passengers and/or goods to and from water carriers" (Perindustrian, 2019). To deal with the rapid development of transportation and to support sea transportation facilities, a port is needed. Therefore, a port which is commonly known as Tanjung Priok Port was built. Tanjung Priok Port is one of the port branches under the management of PT. (Persero) Pelabuhan Indonesia II which was commonly known as PELINDO. It has now changed its name to IPC (Indonesian Port Corporation) since 2012 (Rahmayanti & Wicaksono, 2015).

Container is a package that is specially designed with a certain size. It can also be used repeatedly and used to store and transport the cargo in it (Wahyu Agung Prihartanto, 2014). The use of containers is currently felt to be very beneficial both in terms of shipping goods to the destination, and in terms of handling operations at the port (Palguno & Supangat, 2016). What is meant by productivity in the loading and unloading process is the loading and unloading speed for unloading and loading containers from and onto the ship (Rahmayanti & Tirtayadi, 2011).

The productivity of loading and unloading containers affects the length of time the ship spends in port, and greatly affects the efficiency of ship operations. The longer the ship is in the port, the higher the costs incurred and the more inefficient ship operation. The role of the container terminal is as a means of transporting goods. This includes services in providing access to loading and unloading transportation of containers from ship to land or vice versa and also as a place of service in container stacking. In the process of loading and unloading, there are many obstacles that frequently occur, for example, the TOS system experiencing errors, human error, natural factors, and equipment damage in terms of container loading and unloading productivity which can hinder the process of loading and unloading activities.

2. Method

The research location or study area and data collection were only within the scope of the IPC Container Terminal 3 at PT. (Persero) Pelabuhan Indonesia II Tanjung Priok Branch. This research used descriptive qualitative method to determine the factors inhibiting loading and unloading performance as well as the solution to improve loading and unloading services, especially containers at the IPC Container Terminal 3 of PT. (Persero) Pelabuhan Indonesia II Tanjung Priok Branch.

3. Discussion and Result

A. Procedures for Planning, Implementing and Controlling of Receiving, Loading, Unloading and Delivery.

In carrying out an operational activity, the process must refer to The system and procedures that have been established so that there are no mistakes in the operational process. In this case The author discussed the application of Receiving, Loading, Unloading and Delivery procedures at IPC Container Terminal 3.

1. Implementation of Receiving Procedures at the IPC Container Terminal 3 of PT. (Persero) Pelabuhan Indonesia II.

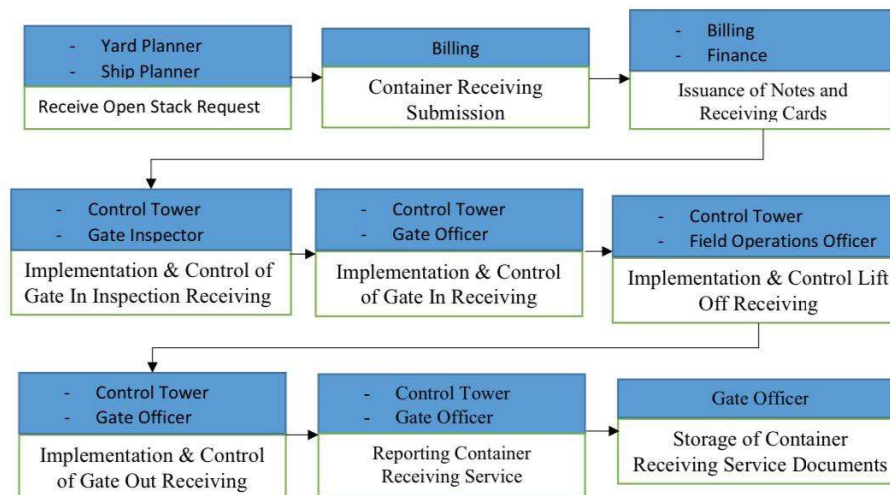


Figure 1. Receiving Procedure (Source: IPC)

Explanation :

- 1) Yard planners and ship planners receive Ship's particular & vessel profile, open stack application from shipping line. Then issue confirmation of open stack, vessel voyage detail (VVD), preferred area (PA) loading.
- 2) Billing receive Export Approval Note, Export Goods Declaration, Booking confirmation Letter Shipping Line, Shipping Instruction, release order. If the documents are complete and correct, the billing will issue a receiving receipt.

- 3) Billing and finance issues receiving notes and receiving cards after receiving receipts.
 - 4) Control tower and gate inspector receive the receiving card and then issue container inspection data, container damages data, container seal data, truck axle data, chassis type data.
 - 5) Control tower and gate officer receive the receiving card, container inspection data, container damages data, container seal data, truck axle data, chassis type data, container weight data after being weighed. Then issue the CMS (container movement slip) and job list.
 - 6) Control tower and field operations officers receive the CMS and job list. Then issue container placement data.
 - 7) Control tower and gate officer receive The container placement data. Then issue an EIR (Equipment Interchange Receipt).
 - 8) Control tower and gate officer receive gate in and gate out data, truck in and truck out data. Then issue a TRT (Turn Round Time) Truck Receiving report and a gate movement report.
 - 9) The gate officer keeps The container receiving service document after receive The receiving card. Then the data archive is stored neatly.
2. Implementation of Loading Procedures at the IPC Container Terminal 3 of PT. (Persero) Pelabuhan Indonesia II.

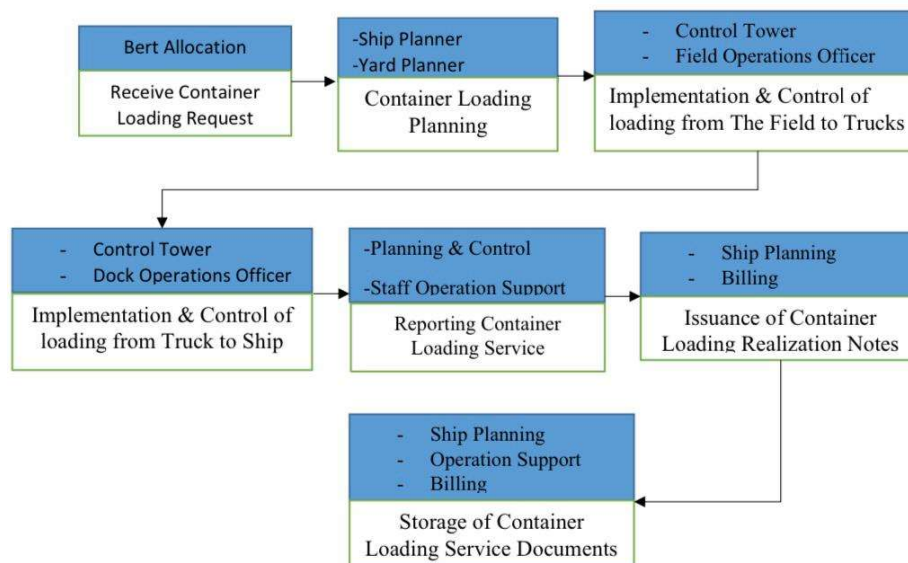


Figure 2. Loading Procedure (Source: IPC)

Explanation :

- 1) Berth allocation receive a letter of request for berthing, manifest container, notification of ship arrival, stowage instruction, CVIA (Container Identification Vessel Advice), loading list, special stowage. Then issue confirmation of loading request, (Ship Mooring Plan and Operation planning), BA Map.
- 2) Ship planner and yard planner receive confirmation of loading request, (Ship Mooring Plan and Operation planning), BA Map, (Tool Readiness Report) & (Personnel Readiness Report). Then Issue the loading profile, operation plan, loading bayplan, loading BAPLIE, and CWP (crane working program).
- 3) Control tower and field operations officers receive the job list. Then issue the container On Chassis data.
- 4) Control tower and dock operations officers receive the loading profile, loading bay plan, CWP (crane working program). Then issue container loading data.
- 5) Planning & control and operation support staff receive SOF (Statement of Fact), VOR (Vessel Operation Report). Then issue The pranota Loading Realization.
- 6) Ship planning and Billing receive pre note of Loading Realization. Then issue Container Loading Realization Notes.
- 7) Ship planning, operation Support, and Billing keeps The container loading service documents. Then the data archive is stored neatly.

3. Implementation of Unloading Procedures at the IPC Container Terminal 3 of PT. (Persero) Pelabuhan Indonesia II.

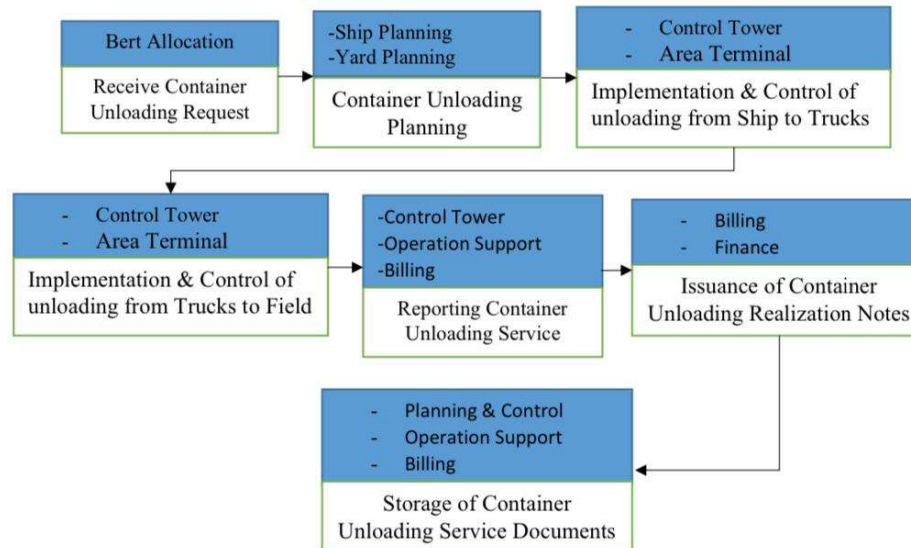


Figure 3. *Unloading Procedure (Source: IPC)*

Explanation :

- 1) Berth allocation receive ship's particular & vessel profile, a letter of request for docking/unloading, notification of ship arrival, CVIA, Manifest. Then issue confirmation of the unloading request via email, (Ship Mooring Plan and Operation planning), BA Map.
- 2) Ship planning and Yard planning receive CVIA, EDI Baplie, (Tool Readiness Report) & (Personnel Readiness Report), dangerous goods loading permit, application letter for truck losing, application letter trans shipment, special container list (DG, Reefer), Manifest, YOR (Yard Occupancy Ratio) data. Then issue The PA unloading, Discharge profile & Discharge List, CWP, operation plan, and bay plan for unloading.
- 3) Control Tower and Terminal Area receive The PA for unloading, Discharge profile & Discharge List, CWP, unloading bay plan, job order at the dock. Then issue The News, photo documentation, job orders in the field, confirmed discharge data in the system, and EIR.

- 4) Control Tower and Terminal Area receive job order data in the field. Then issue confirmed placement data on the system.
- 5) Control tower, operating support, and billing receive data on the realization of unloading. Then issue the statement of fact, pre note of unloading realization.
- 6) Billing and finance receive The pre note of unloading realization. Then issue Container Unloading Realization Notes.
- 7) Planning & Control, Operation Support, Billing keeps the container unloading service documents. Then The data archive is stored neatly.

4. Implementation of Delivery Procedures at the IPC Container Terminal 3 of PT. (Persero) Pelabuhan Indonesia II.

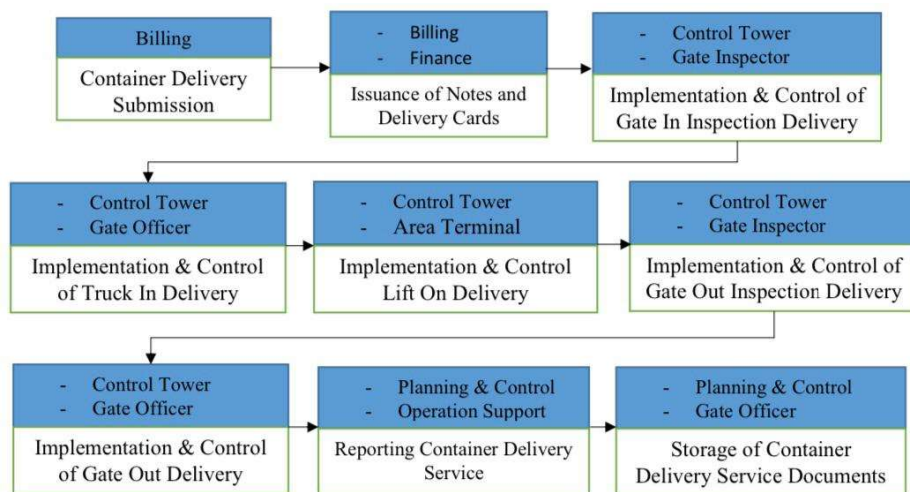


Figure 4. *Delivery Procedure (Source: IPC)*

Explanation :

- 1) Billing receives Delivery application Documents, and Valid Original DO. Then issue Pranota Delivery.
- 2) Billing and Finance receive pranota delivery. Then issue notes and delivery card.
- 3) Control Tower and Gate Inspector receive delivery documents. Then issue container inspection data, container number data, and Truck ID data.

- 4) Control Tower and Gate Officers receive delivery documents, inspection data. Then issue CMS, job list delivery.
- 5) Control Tower and Terminal Area receive CMS and Job list Delivery. Then The job list is confirmed.
- 6) Control Tower and Gate Inspector receive a confirmed Job list in the field on chassis in the system. Then issue container inspection data, seal container data, and damages container data.
- 7) Control tower and Gate Officer receive container inspection data, container seal and damages data. Then issue EIR.
- 8) Planning & Control, Operation support receive data gate in and gate out container delivery, data truck in and truck out. Then issue the TRT Truck Delivery Report, and Gate Movement Delivery Report.
- 9) Planning & Control, Gate Officers keeps delivery service documents after receiving a Delivery Card. Then the data archive is stored neatly.

B. Factors that hinder the process of loading/unloading at The IPC Container Terminal 3 of PT. (Persero) Pelabuhan Indonesia II.

In The implementation of loading and unloading activities at the port, several problems that hinder these activities occur. The author only limited The factors that hinder The loading and unloading of containers at The IPC Container Terminal 3. They are:

a. System TOS (Terminal Operating System) Error

The TOS system is to manage the planning of goods, tools, and all facilities used in all port activities efficiently and effectively. When TOS does not work normally, it can hinder the loading/unloading process at the container terminal.

b. The loading/unloading equipment is damaged

RTG (Rubber Tyred Gantry) container loading and unloading equipment is used in the stacking yard/CY. CC (Container Gantry Crane) Container loading and unloading equipment that is permanently installed on the edge

of the pier by using a rail. When there is damage to the loading/unloading equipment,, it can hinder the loading/unloading process at the container terminal.

c. Damaged/lost container seals

Containers damaged seals can hinder the container stacking process. Containers can only be received if the seals are in good condition/not damaged. If the container seals are damaged, the container must return to the CFS (Container Freight Station) to replace the seal and return it to the container terminal.

d. Human Error

Human Errors are still found such as work accidents, delays in container service, wrong printed documents, wrong data inspection, wrong placement in the field, incorrect delivery of unloaded containers, and trucks crashing into containers or terminal facilities. It is necessary to conduct trainings to improve skills for loading and unloading personnel.

e. Natural Factor

Natural factors include heavy rain and tidal conditions. Those conditions may hinder the performance of loading/unloading containers so that the services provided are not optimal.

Table 1. *Contingency Plan Auto Gate*

No	Activities	Issues	Solution
1	Inspection In	1) Wifi Signal Error 2) TOS system Down 3) Damaged Container	1) Inform EOS and post gate for repair process. 2) The inspection / recording is carried out manually, after the TOS is not down, input is carried out by the Post gate. 3) Inform the driver of the damaged container truck and head to the postgate to make a report on the damage to the container.
2	Enclosure	1) CMS can not be printed 2) Overweight 3) Weight Indicator Error	1) The post gate clerk informed the Eos team to resolve the issue. 2) The postgate officer coordinates with ship planning and SPV on

			duty whether it is accepted for further loading or not. 3) The post gate clerk informs the equipment team, and the equipment reports to the vendor
3	Inspection Out	1) Physical difference between container and E Ticket delivery	1) Postgate officer notifies truck driver to change ticket to billing
4	Gate Out	1) EIR cannot be printed	1) Postgate officer inform EOS for repair 2) The postgate officer informs the gate out officer to print the EIR on the PC
5	Barrier	1) Barrier can not open	1) Post Gate officer informs SPV on duty (super user), Super user opens the barrier manually
6	Others	1) The Post Gate queue is full 2) out of thermal paper 3) Electrical problem	1) The postgate officer informs the trafficman and security to direct the truck to the conditional parking area 2) postgate officer inform EOS to replace new thermal paper 3) Postgate officers and gate out officers turn on the generator

(Source: IPC)

4. Conclusion

The Operations at the IPC Container Terminal 3 are fully in accordance with the SOP (Standard Operating Procedure) that has been implemented and has been running effectively. Factors that hinder the Unloading/Loading Implementation Process is the damage to loading and unloading equipment, TOS system error, human error, and natural factors. Disruption of container loading and unloading activities will affect the length of time the ship spends in port and greatly affects the efficiency of ship operations. The suggestion for the future is to conduct preventive maintenance periodically on the loading and unloading equipment (RTG & CC), so that the performance of the equipment

becomes optimal, so that loading and unloading productivity container can be effectively done. Periodic checks on the TOS (Terminal Operating System) are carried out to ensure the system runs very well, because TOS has a very important role in facilitating the movement of goods in and out. In order to minimize the risk of Human Error during the process of loading and unloading containers at IPC Container Terminal 3 PT. (Persero) Pelabuhan Indonesia II., it is necessary to conduct trainings to improve HR skills for loading and unloading personnel.

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