



## INTERNATIONAL JOURNAL OF RESEARCH IN COMPUTER APPLICATION AND MANAGEMENT

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**CONTRIBUTIONS TO BOOKS**

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

**JOURNAL AND OTHER ARTICLES**

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

**CONFERENCE PAPERS**

- Garg Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

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- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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## A STUDY ON LEAN MANAGEMENT IN CHENNAI PORT

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### ABSTRACT

*In the present scenario of the fast moving world, every operational functions in any industry requires to be effective and efficient in order to sustain in the competitive world. When every body things about improving the efficiency through improving the effectiveness of the operation, the lean management concept things differently. Where the focus is placed on reducing or eliminating the unwanted activities involved in the process. The Chennai port trust has the problem of having more idle hours with reference to vessels. The cargo operations were affected due to the idle hours. Hence a study aimed to analyze the factors contributing to Idle time in Cargo Handling, to identify the port related factors which leads to cargo operations delay, to find out the non-port related factors which leads to cargo operations delay and to determine the idle hours of vessels at Chennai port was carried out.. Various statistical tools like Value Stream Mapping, pert analysis was used to identify the idle time happening in the cargo area. This paper summarizes the findings of the analysis and also the application of lean concept to reduce the lead time of the cargo handling process.*

### KEYWORDS

Chennai Port, Lean management, Value stream mapping

### INTRODUCTION

Lean management is the process of analyzing the flow of information and materials in an environment and continuously improving the process to achieve enhanced value for the enterprise. Lean management concepts were developed over the last five to six decades, primarily in Japan, particularly for the Toyota production system. These concepts met various tests for many years and passed the test of time very easily. Lean manufacturing revolutionaries the manufacturing process. It was not a fine tuning of the existing manufacturing processes. These manufacturing techniques are conceptually different from the traditional process. For an example, traditional manufacturing works based on inventory. But lean manufacturing questions the role of inventory and defines as a waste itself and also as the reflector of the imperfections a system has. The aim of Lean Management is the elimination of waste in every area of production including customer relations, product design, supplier networks, and factory management. Its goal is to incorporate less human effort, less inventory, less time to develop products, and less space to become highly responsive to customer demand while producing top quality products in the most efficient and economical manner possible. Essentially, a "waste" is anything that the customer is not willing to pay for. Typically the types of waste considered in a lean management system include, over production, waiting, work in progress, transportation, processing waste, excess motion, defected products, underutilization of employees etc. It reducing costs by eliminating waste in the overall production process, in operations within that process, and in the utilization of production labor. The focus is on making the entire process flow, not the improvement of one or more individual operations. All the tools in lean management aim to identify and remove wastes from the system continuously. There are four steps in implementing lean management.

1. Identifying the fact that there are wastes to be removed
2. Analyzing the wastes and finding the root causes for these wastes
3. Finding the solution for these root causes
4. Application of these solutions and achieving the objective

### INDIAN PORT

India has a long coastline, spanning 7600 kilometres, forming one of the biggest peninsulas in the world. It is serviced by 13 major ports (12 government and 1 corporate) and 187 notified minor and intermediate ports. The latest addition to major ports is Port Blair on June 2010, the 13th port in the country. Ports play a pivotal role in stimulating economic activity in their surroundings and hinterland through the promotion of seaborne trade. In India, they handle 95per cent of the country's international trade cargo by volume and 70 per cent by value. The sector is broadly categorized into major and non-major ports. Various types of Export & Import cargoes are handled at each Port for International Trade as well as Coastal Trade. The Export Cargoes are those cargoes which are loaded in a ship and go out of the Port and or to the country. The Import Cargoes are the incoming cargo from outside the country and are generally unloaded at the Port. Cargo is goods or produce transported, generally for commercial gain, by ship, aircraft, train, van or truck. In modern times, containers are used in most long-haul cargo transport. The volume of cargo handled at the Indian ports has witnessed 10.67% in the last five years. Total cargo handled at the 12 Major Ports is 423.34 million tonnes in 2005-06 against 383.7 million tonnes handled in 2004-05. Cargo handling is projected to grow at 7.7% until 2013-14. It takes an average of 21 days to clear import cargo in India compared to just three in Singapore. There are also 7 shipyards under the control of the central government of India, 2 shipyards controlled by state governments, and 19 privately owned shipyards. Chennai Port is the second largest port of India, behind the Mumbai Port. It is over 125 years old. It is a substantial reason for the economic growth of Tamil Nadu, especially for the manufacturing boom in South India. Its container traffic crossed 1 million TEUs for the first time in 2008. It is currently ranked the 91st largest container port and is expanding in the coming years. In 2009-10, the port handled 61.06 million tonnes of cargo against 57.49 million tonnes in 2008-09 marking an increase of 6.20 per cent and has set a target to handle 75 million tonnes in 2011-12 and 100 million tonnes in 2015-16.

### STATEMENT OF THE PROBLEM

The Chennai port trust has the problem of having more idle hours with reference to vessels. The cargo operations were affected due to the idle hours. The study was a necessity urging to find the factors contributing to idle time of cargo handling in Chennai port trust. The study was a timely document required for the Chennai port trust in order to know the idle hours in cargo handling is important for the port users. Hence, to reduce the idle hours and to improve the cargo handling in Chennai port trust,. Lean Management was applied to Chennai port trust.

**OBJECTIVE OF THE STUDY**

- To analyze the factors contributing to Idle time in Cargo Handling
- To identify the port related factors which lead to cargo operations delay.
- To find out the non-port related factors which leads to cargo operations delay.
- To determine the idle hours of vessels at Chennai port.

**SCOPE OF THE STUDY**

Following are the issues were this study cover broadly:

- Idle time types
- Idle time for ten vessels
  - General cargo vessels
  - Granite vessels
  - Steel vessels
  - Project cargo vessels
- Details of Idle time for vessel vise
- Total hours and idle time for the vessels

**RESEARCH DESIGN**

The researcher done this study based on *Analytical Research Design*. The researcher has used secondary data only. The secondary data collected from the administration report and Indian port authority profile. The statistical tools like Pert Analysis, Weighted Average Analysis, Percentage Analysis and Value Stream Mapping (VSM) were used for analysis.

**DATA ANALYSIS**

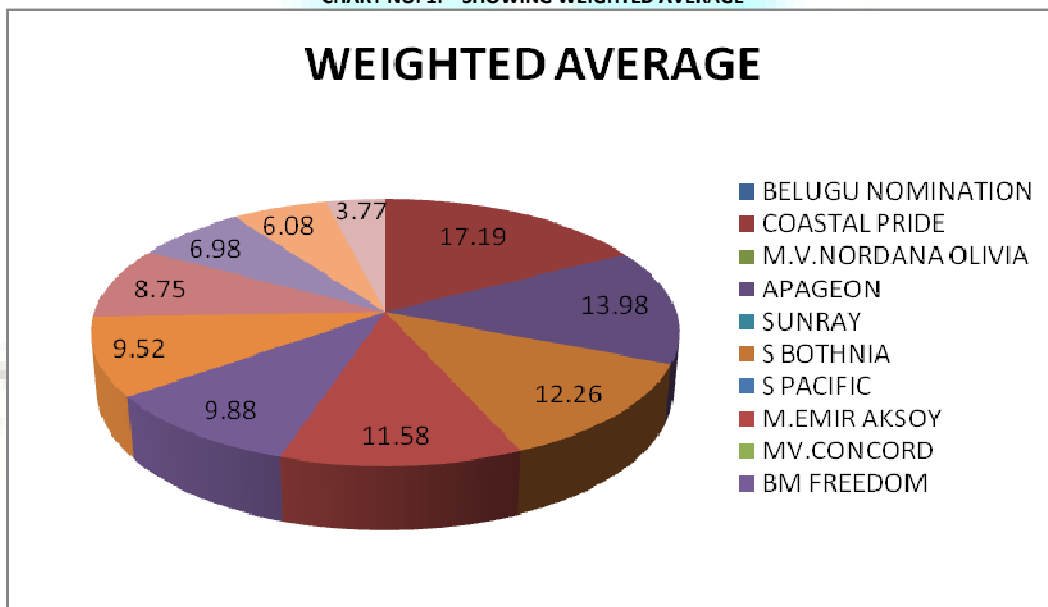
**TABLE NO. 1: SHOWING THE IDLE HOURS OF VARIOUS VESSEL**

VESSEL	TOTAL WORKING HOURS	EFFECTIVE HOURS	NON-WORKING HOURS
BELUGU NOMINATION	68.05	18.55	49.5
COASTAL PRIDE	178.25	138	40.25
M.V.NORDANA OLIVIA	175.5	140.2	35.3
APAGEON	101.15	68.15	33.35
SUNRAY	61.35	33.3	28.45
S BOTHNIA	72.35	45.35	27.4
S PACIFIC	46.3	21.1	25.2
M.EMIR AKSOY	86.5	66.4	20.1
MV.CONCORD	128	110.5	17.5
BM FREEDOM	39.4	27.35	12.05

Source: Primary data

The table explains working hours of 10 vessels of Chennai port. The M.V.Nordana Olivia vessel has maximum effective working hour (140.2), followed M.V. Concord with 110.5. The belgru has the maximum non effective hours ie 49.5, followed by Coastal Pride.

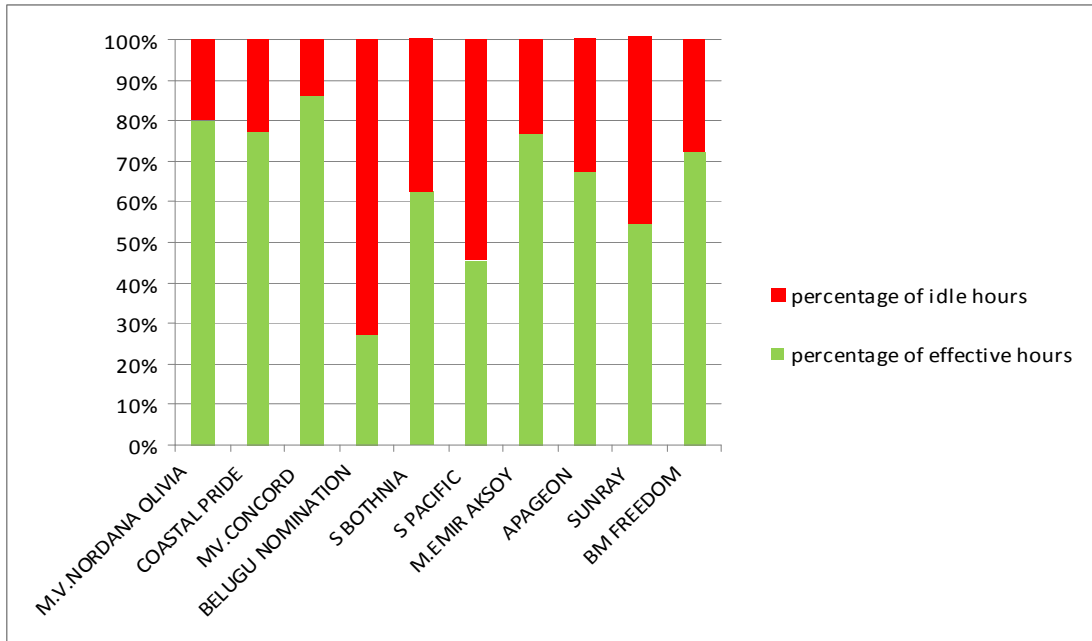
**CHART NO. 1: SHOWING WEIGHTED AVERAGE**



Source: Primary data

From the above graph it is inferred that Belugu nomination has more weightage of 17.19 where as BN freedom has the least of 3.77.

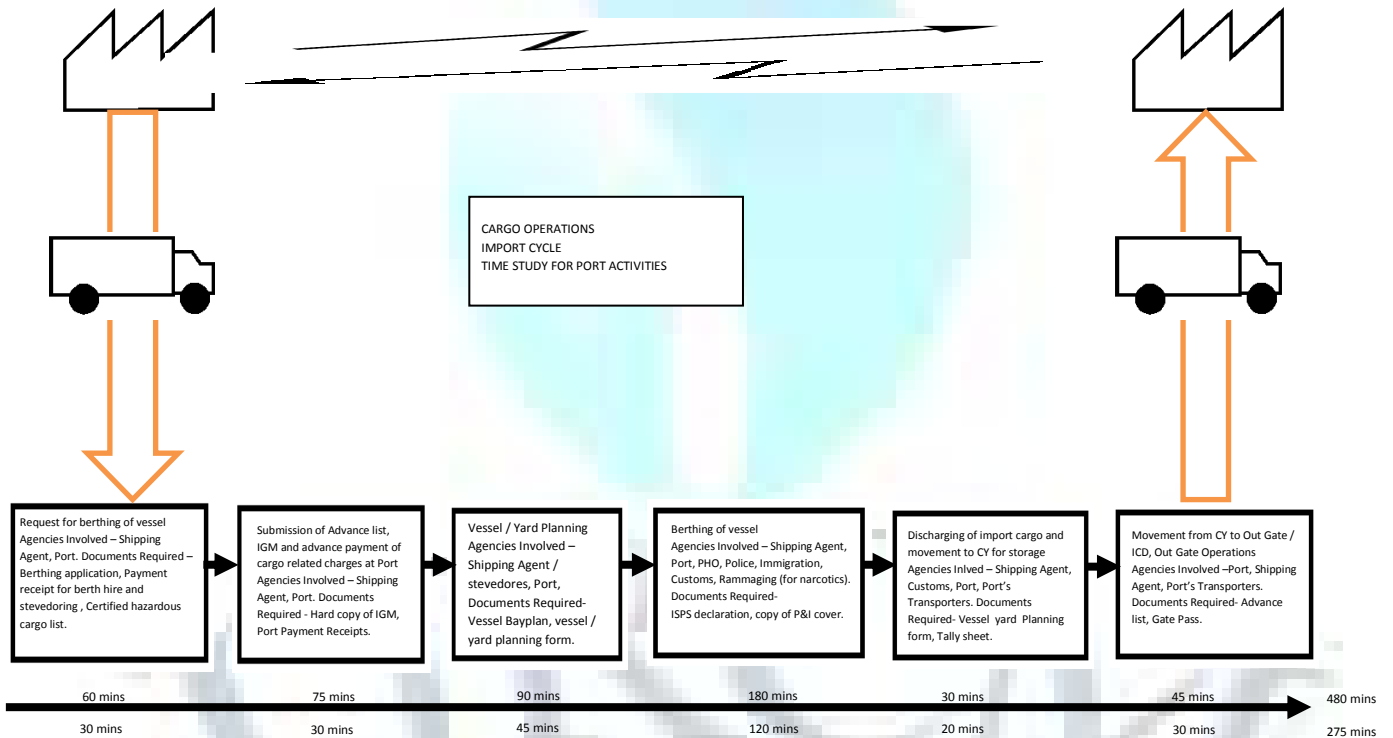
CHART NO. 2: SHOWING THE IDLE HOURS OF VARIOUS VESSEL



Source: Primary data

The above graph shows that the Belugu nomination Vessel has 73% of idle hours and M.V.Concord has 14% of idle hours.

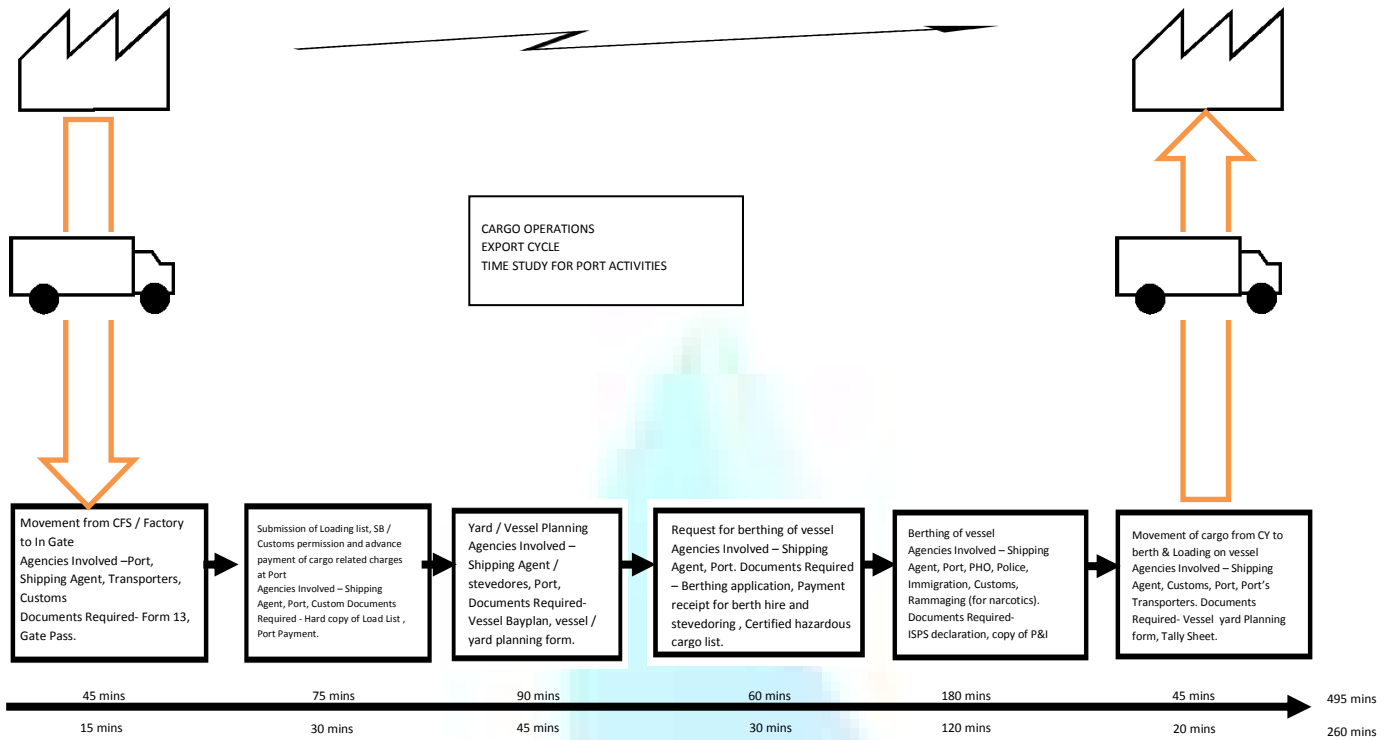
FIGURE 1: SHOWING VALUE STREAM MAPPING – IMPORT CARGO OPERATIONS



The above figure explains import process in 6 major steps. The time study of port activities for import cycle is explained very clearly for each step. The first step ie requesting for berthing of vessel & payment actually takes 60 mins in Chennai port which is 30 minus more than standard time. The second step which involves the payment of fees takes 75 minus, which is 30 minus greater than standard time. In third step the process like vessel / yard planning takes 90 minus, which is 40 minus more than standard time. The fourth step berthing activities takes 180 minus compared to standard time 120 minus. In the fifth step the major activities involved discharging of import cargo takes 30 minus, only 10 minus more than standard time. The last step basically out gate operation takes only 45 minus ie 15 minus more than standard time. It is inferred that the standard time for cargo operations of import cycle are 275 minutes, but 480 minutes is the actual time and the time difference 205 minutes is the non working time. Hence there is a lot of idle time in cargo operation of import cycle.



FIGURE 2: SHOWING VALUE STREAM MAPPING – EXPORT CARGO OPERATION



The above figure explains export process in 6 major steps. The time study of port activities for export cycle is explained very clearly for each step. The first step ie. movement of goods inside the gate, processing form 13, gate pass etc actually takes 45 mins in Chennai port which is 30 minus more than standard time. The second step which involves submission of documents takes 75 minus, which is 45 minus greater than standard time. In third step the process like vessel / yard planning takes 90 minus, which is 45 minus more than standard time. The fourth step the request for berthing of vessel activities takes 60 minus compared to standard time 30 minus. In the fifth step the major activities involved berthing of cargoes takes 180 minus which is 60 minus more than standard time. The last step movement of cargo inside vessel takes only 45 minus ie 25 minus more than standard time. From the above figure, it is inferred that the standard time for cargo operations of export cycle are 260 minutes, but actually it takes 495 minutes and the time difference is found to be 235 minutes, which is the non working time.

**FINDINGS**

- From the pert calculations it was inferred that the major factors contributing to idle time in cargo handling are as follows
  - Early Break up/ Late Reporting of DLB/Port Labour
  - Want of Pilot after completion
  - Others on Non-Port Account
  - For Want of Cargo
  - For Customs Formalities
  - For Unloading/Loading Instructions
  - Shed Congestion / Poor Clearance
  - Want of Wagons/Lorries/Trailers
  - Non-Readiness by Ship/Stoppages at Masters Agent / Shippers option
  - Holiday / Recess
  - For Sailing Instruction
  - Others
  - Breakdown of shore cargo handling equipment
  - Power failure
- From the pert calculations it was inferred that the port related factors contributing to idle time in cargo handling are as follows
  - Early Break up/ Late Reporting of DLB/Port Labour
  - Breakdown of shore cargo handling equipment
- From the pert calculations it was inferred that the non-port related factors contributing to idle time in cargo handling are as follows
  - Want of Pilot after completion
  - Others on Non-Port Account
  - For Want of Cargo
  - For Customs Formalities
  - For Unloading/Loading Instructions
  - Shed Congestion / Poor Clearance
  - Want of Wagons/Lorries/Trailers
  - Non-Readiness by Ship/Stoppages at Masters Agent / Shippers option
  - Holiday / Recess
  - For Sailing Instruction
  - Others
  - Power failure
- From the weighted average analysis it was inferred that
  - Belugu nomination is having the highest idle time i.e.17.19 followed by
  - Coastal Pride is having the second highest idle time i.e.13.98 followed by

- M.V.Nordana Olivia is having the third highest idle time i.e.12.26 followed by
  - Apageon is having the fourth highest idle time i.e. 11.58 followed by
  - Sunray is having the fifth highest idle time i.e. 9.88 followed by
  - S Bothnia is having the sixth highest idle time i.e.9.52 followed by
  - S Pacific is having the seventh highest idle time i.e.8.75 followed by
  - M.Emir Aksoy is having the eight highest idle time i.e.6.98 followed by
  - Mv.Concord is having the ninth highest idle time i.e.6.08 followed by
  - Bm Freedom is having the least idle time i.e.3.77.
- From the percentage analysis it was inferred that
- The percentage of idle hours for vessel M.V.Nordana Olivia is 20% which is 35.3hrs.
  - The percentage of idle hours for vessel coastal pride is 23% which is 40.25hrs.
  - The percentage of idle hours for vessel Mv Concord is 14% which is 17.5hrs.
  - The percentage of idle hours for vessel Belugu nomination is 73% which is 49.5hrs.
  - The percentage of idle hours for vessel s Bothnia is 37% which is 27.4hrs.
  - The percentage of idle hours for vessel s pacific is 54% which is 25.2hrs.
  - The percentage of idle hours for vessel M.Emir Aksoy is 23% which is 20.1hrs.
  - The percentage of idle hours for vessel Apageon is 33% which is 33.35hrs.
  - The percentage of idle hours for vessel Sunray is 46% which is 28.45hrs.
  - The percentage of idle hours for vessel Bm Freedom is 28% which is 12.05hrs.
- It was found that from the value stream mapping of importing cargo operations, time consumed is 480 minutes which is more than the standard time specified i.e. 275 mins. Hence, it was found that the idle time is 205 minutes.
- It was found that from the value stream mapping of exporting cargo operations, time consumed is 495 minutes which is more than the standard time specified i.e. 260 mins. Hence, it was found that the idle time is 235 minutes.

### SUGGESTIONS

- The late reporting of port labours can be reduced by collecting fines.
- The berthing charges for the vessels can be raised double if the pilot not available after the completion of the process.
- The machines and equipments of the port broke down frequently which reduces vessel and cargo handling rate. At present break down maintenance is followed in ports so it is recommended to follow preventive maintenance policy.
- Time duration of the procedures for customs clearance can be fixed a time margin so that the waiting time may be reduced.
- Upgraded equipments should be installed as soon as possible.
- The port should increase the storage capacity for cargo, which enables the trade to reduce the handling cost as well as idle time cargo.
- Heavy axle wagons and multi axle trucks to be introduced in the transportation sector. This will improve the Turn Round of trucks and enhance the carrying capacity of vehicles to facilitate expedition evacuation of cargo.
- In the servicing of vessel and handling of cargo especially loading and unloading from vessels, lack of state of art equipments affect the rate of handling thereby leading to high turn round time of vessels and high dwell time of cargo. It is therefore necessary to procure more sophisticated and efficient equipments to achieve enhanced efficiency in cargo handling.
- The Chennai port is efficient in import handling only, so they should improve their efficiency in export cargo handling also getting proper training through experience port officials.

### CONCLUSION

The study on lean management in the Chennai port trust has exactly doesn't find any lucid conclusion as the lean concept is based on continuous improvement. Even Toyota which is considered to be the pioneer in applying lean concepts for last four decades is also looking for improvement in all its operational areas. This study is aimed at giving an attempt to apply the core concept of Lean Management in Chennai port in handling the cargo operations which is nothing but reduction of waste activities which is not know in broad picture. The study aims at reduction of lead time between in cargo area, by reducing the idle time occurring in the cargo operations. As initial step in the study identify the entire process flow in the port area and identified the causes for the idle time. The identification of process of causes of idle time is done by wearing a Lean Spectacles, where activities are classified as Value Adding and non-Value adding. Thus each process is grouped under the above mentioned area. Thus Chennai port can improve its performance by reducing the non-working hours or the idle time in cargo operations by applying the lean concepts.

### REFERENCE

- Dr.Jeffery K.Liker and David Meier- The Toyota Way Field book- Tata McGraw Hill Publishing Co.Ltd, New Delhi.
- Dr.Panneerselvam- Production and operations management- Prentice Hall of India, New Delhi.
- Johnson, Newell and Vergin- Volume 25, Issue 2, Journal of Operations Management.
- Michael L.George – Lean six sigma for services- Tata McGraw Hill Publishing Co.Ltd, New Delhi.
- The handbook of maritime Economics & Business – costas TH.Grammenos

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- [www.leanmanufacturingconcepts.com](http://www.leanmanufacturingconcepts.com)
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