

**PROPOSALS TO INTRODUCE SOLUTIONS TO
MINIMIZE EXISTING OVERHEAD COSTS IN
CSLOG (EAST) STORING YARD AND
INTRODUCE JIT INVENTORY SYSTEM**

GROUP PROJECT

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DECLARATION

This research paper contains no material which has been accepted for the award of any other degree or diploma in any university or equaling institution, and that to the best of our knowledge and belief, contains no material previously submitted or written by any other person, except where due reference is made in the text of this dissertation.

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CONTENT

Introduction	1
An Overview of Existing Problem.....	4
Methodology - Focal Point of the Study.....	8
Just In Time (JIT) Concept.....	14
Application of Just In Time (JIT) Concept to CSLOG(E) SY	17
Recommendations.....	19
Conclusion.....	21

LIST OF TABLES

Table 2.1: Value of the Stock in CSLOG(E) SY.....	5
Table 2.2: Total Non Moving Items in CSLOG(E) SY.....	7
Table 3.1: Stock in Hand at Dvora Stores.....	8
Table 3.2: Details of Routine Services of MTU Engines.....	9
Table 3.3: Value of Non-Moving Items in Dvora Stores.....	10

LIST OF FIGURE

Figure 3.1: Annualized Non-Moving Spares in Dvora Stores.....	11
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ABSTRACT

The purpose of this paper is to provide a comprehensive review about the inventory operations in CSLOG (E) Storing yard and to find viable solutions for unnecessary overheads associated. Also it is studies as how to initiate Just in Time (JIT) inventory management system to Dvora Stores as a pilot project. In this context the team carried out the study on Dvora Stores and found out that the store is required to be eliminated many deficiencies in the process. Therefore the team recommended affecting complete process re-engineering in order to eliminate the existing problems in inventory operation. Also it is identified that the JIT could be introduced to routine spares requirement which is aligned with JIT conformities.

CHAPTER 1

INTRODUCTION

Background of the Study

1.1 The Sri Lanka Navy is functioning under seven naval commands. Out of all seven naval commands, the Eastern Naval command is the largest in terms of following elements;

- a. Sea and land area
- b. Number of naval personnel
- c. Number of ships and crafts

1.2 All logistics requirements of the entire eastern naval command are managed by the Commodore Superintendent of Logistics Department (East) - CSLOG (E). In order to provide required logistics support, CSLOG (E) maintains storing yard where purchased items are stored until they are drawn by the user departments. The CSLOG (East) Storing Yard (**CSLOG (E) SY**) functions mainly under two categories of stores such as;

- a. Spare Parts Distribution Centers (SPDC)
- b. Non Spare Parts Distribution Centers.(NON SPDC)

Spare Parts Distribution Center

1.3 Spare Parts Distribution Center is the main store where spare parts of all ships and crafts are stored. This consists of different categories of stores as indicated below;

- a. SPDC I - OBMs and spares for Ex. Abheetha, Hovercraft, SLNS Samudura and SLNS Sayura
- b. SPDC II (E)- Engineering Spares for Fast Gun Boats
SPDC II (L)- Electrical Spares for Fast Gun Boats
- c. SPDC III - Spares for Landing Craft, Water Jets and Generators
- d. SPDC IV - Motor Transport Spare Parts Store
- e. SPDC V - Spare parts for SLNS Shakthi
- f. SPDC VI - Deutz Spare Parts

- g. Central Filter Stores
- h. Central Electronic Stores
- j. Central Lubricant Store.
- k. Dvora stores - MTU Spare Parts

Non Spare parts Distribution Center

1.4 All store items except spare parts for ships and craft are stored here. This section consists of following stores;

- a. General Store
- b. Gas Store
- c. Paint, Oil and Lubricants Store
- d. Metal Article Store
- e. Stationery Store
- f. Building Material Store
- g. Electrical Store

1.5 Both SPDC and Non SPDC stores maintain inventories of very high value at present and following drawbacks observed.

- a. Manual operation of all stores functions
- b. Holding higher volume of stores amounting to Rs. 3740 million as at 10th Aug 15
- c. Total non moving items amounts to Rs. 752million as at 10th Aug 15
- d. Extremely poor infrastructure facilities required by a proper warehouse
- e. Poor knowledge on staff about the technical spares
- f. Most of stores are situated in higher elevated locations (In upstairs).

1.6 Due to the drawbacks highlighted above, the inventory operations in the SPDC section has become extremely cumbersome and a highly cost ineffective affair.

Objective of the Study

1.7 The objective of this study is to find out solutions to minimize existing overhead costs in CSLOG (E) Storing Yard and introduce Just in Time (JIT) inventory management techniques.

Problem statement

1.8 The existing inventory controlling procedure of CSLOG (E) SY does not show expected optimum level of performance.

Hypothesis

1.9 The level performance can be improved if the hidden inventory carrying costs are eliminated.

1.10 The level of performance can be improved if the deficiencies in existing inventory controlling processes are combated.

Limitation of the Study

1.11 The team identified that limitation of the time is the major constraint of this study. The complexity of the problems embedded with each store is such that, it is required an in depth study for each store.

1.12 The existing common problems in stores are being discussed at chapter two and owing to the said complexity, the team decided to select store, Dvora Stores (MTU Spares) which has become more vulnerable in terms of maintaining the stocks and find out solutions for objectives indicated above.

1.13 The lack of cooperation from the technical departments is another limitation to carry out the proper study. The process is commenced with placing the order and the support from them to uncover the exact reasons of process deficiencies is paramount important.

CHAPTER 2

AN OVERVIEW ON EXISTING PROBLEM

2.1 The study team understood that all the stores under CSLOG SY (E) are functioning with conventional store management procedures. Although the stores are adopted certain industry best practices such as maintaining minimum stock levels, identifying maximum stock levels, re-order levels and economic order quantities the study team understood that it does not provide a substance to the function due to inefficiencies in the total process. The absence of proper mechanism to follow these principles always bring in, adverse results either having over stocks or no stocks. The over stocks situations are inviting for another disastrous consequences where it leads to accumulate non moving stock.

2.2 Also all stores are functioning in the buildings built by Royal Navy era, where it was a small scale organization and the buildings also could have met the expectation. However these building are not providing the expected results for present day's Navy due to number of reasons such as;

- a. Limitation of space
- b. Difficult to move heavy items to upstairs stores
- c. Dilapidated condition of the buildings
- d. Lack of opportunity to expand

2.3 The primary task of the stores is only to meet the area requirement but not functioning as a proper warehouse suit to modern day requirements. All the stores are not having adequate space and most of stores have scattered items on the floor due to said reason. The rain water also seeping through the roof during rain and the dilapidated condition of the roof does not provide the value to stores as they carry very valuable and important items. The body language of the employees is suggesting that they do not have the belongingness and they execute the task in hand as they are assigned to do but not with instinct. The negative feelings together with unfavorable working environment do not provide a better working environment. The study team came to understand that the proposals have already been submitted to higher authority to shift the existing CSLOG (E) SY time to time but the same has not been materialized yet due to various reasons. In turn the necessity of transforming this storing yard to

suit the modern day requirement is yet a dream even though it has run this complex for more than 5 decades.

2.4 The total value of the items in storing yard is exceeding Rs. 3740 million as at 10th August 2015 (see table 2.1) and the necessity to have a safer storing yard is paramount important. Therefore the study team strongly believes that the working environment is the major barricade carry forward the existing problems before addressing many more other process related problems as discussed in subsequent paragraphs.

SR NO	STORE	LEDGER ITEMS	VALUE OF STOCK Rs.
1	Stationary	19	40,000,000.00
2	General	1432	397,289,553.00
3	Gas & Mettle	463	510,113,928.00
4	Electrical	426	23,427,455.43
5	Water works	1127	60,000,000.00
6	Paint	63	32,000,000.00
7	Motor Spare parts	1242	5,311,419.75
8	SPDC I	1838	32,886,717.78
9	SPDC II (E)	3127	126,087,105.50
10	SPDC II (L)	725	37,040,000.00
11	SPDC III	4957	228,000,000.00
12	SPDC V	607	22,581,000.00
13	SPDC VI	7221	883,300,000.00
14	Filter Stores	933	78,360,000.00
15	Oil	80	85,500,000.00
16	Central Electronic	1542	165,964,600.00
17	Dvora Stores	4692	1,015,377,249.40
Total			3,743,239,028.86

Table 2.1 – Value of the stock in CSLOG (E) SY

Source: Commodore Superintend of Logistics (East)

2.5 The study team identified that CSLOG SY (E) is having number of stores to provide service to the area as mentioned in the introduction. These stores are receiving stocks through local purchases and NHQ RL. The stores except Oil & Paint, Stationary and permanent items are having exorbitant amount of non moving items in which some of the non moving items are having the age exactly similar to age of the particular stores. Also we have identified that, all these non moving items are ordered by either Engineering Department or Electrical Department. But when it comes to take necessary actions, all these parties are not willing to take the responsibility as the most of the Board of Inquiries have been concluded with very unrealistic recommendations such as handing over such non moving items to Metal Article Store for scrap instead of making concerned authorities responsible for such accumulation of stocks. These recommendations do not address to the core problem where the difference between salvage value (scrap value) and real cost of the item is having a significant difference making a huge loss to Navy.

2.6 However, the team attempted to discover the underlying reasons with the help of respective technical departments but most of them were reluctant to be volunteer to provide details as expected which are a major limitation as explained in the introduction. The value of total non moving items as at 10th August 2015 is reported as Rs. 752 million as shown in table 2.2 Therefore, the magnitude of the catastrophe is very much clear and immediate attention is required to resolve the matter. On other hand the working capital tied up with non moving items for such a longer time period could have utilized for a productive purpose and the upward trend of the movement of this problem is increasing escalating the catastrophe.

SR NO	STORE	LEDGER ITEMS	NONMOVING ITEMS		
			NUMBER	VALUE Rs.	DURATION
1	Stationary	19	10285		2 years & 7 months
2	General	1432		127,688.50	10 years & 2 months
3	Gas & Mettle	463	129	600,000.00	40 years
4	Electrical	426	139	8,112,511.93	2 years above
5	Water works	1127	311	-	37 years
6	Paint	63		75,800.00	9 years
7	Motor Spare parts	1242		8,133,247.65	14 years
8	SPDC I	1838	466	2,003,296.95	
9	SPDC II (E)	3127		126,087,105.50	
10	SPDC II (L)	725		11,999,524.48	
11	SPDC III	4957		156,156,091.37	
12	SPDC V	607		0.00	
13	SPDC VI	7221		129,760,000.00	5 years
14	Filter Stores	933		2,980,000.00	6 years
15	Oil	80		609,448.55	5 years
16	Central Electronic	1542	821	73,064,108.88	5 years
17	Dvora Stores	4692	2653	232,729,209.79	7 years & less
Total				752,438,033.60	

Table 2.2 Total non moving items in CSLOG (E) SY

Source: Commodore Superintend of Logistics (East)

CHAPTER 3

METHODOLOGY - FOCAL POINT OF THE STUDY

Dvora Stores (MTU Spares)

3.1 The study team identified that, Dvora Stores which facilitates spare parts for MTU engines as the most vulnerable store compare with other all storeses in CSLOG SY (E). This store is currently having stock worth Rs. 1015 million (see table 3.1). The value of the stock in this store alone is representing 27% out of the total value of the entire storing yard ie: 3740 million (see table2.1).

CATOGERY	NO OF ITEMS IN THE STOCK	TOTAL VALUE Rs.
Engineering	3616	893,387,605.30
Electrical	1076	121,989,644.09
TOTAL		1,015,377,249.40

Table 3.1 Stock in Hand at Dvora stores - as at 10th August 2015
Source: Commodore Superintend of Logistics (East)

3.2 The study team carried out the study under following dimensions in order to assess the performance of the store.

- a. Existing process in the store
- b. Value of the total stock
- c. Annual contribution
- d. Value of the non moving items
- e. Extent the use of computer aided data base
- f. Knowledge of the staff
- g. Customer's perspective on the store
- h. Measurement taken to minimize the problems

3.3 The study carried out to uncover the information for above mentioned assessing points by way of developing questions indicated below.

- a. Do they follow ideal purchasing process?
- b. Does the existing purchasing process support to effective utilization of scared financial provisions?
- c. Do they consider about the inventory holding cost?
- d. Do they consider about inventory redundancy cost?
- e. Do they consider the overhead costs?
- f. Does the staff attached has sufficient technical knowledge to perform the job
- g. Do they have a proper post purchase auditing procedure to detect the errors?

a. Do they follow ideal purchasing process?

i. The study team identified that the majority of items are coming through NHQ RL procedure as these items should get down from the manufacturer in German. The items are ordered by technical department for two reasons ie; for routine repairs and for breaking down repairs.

(1.)**For routine maintenance.** The routine maintenance for MTU engines are being subject to carry out routine service and relevant details are shown at table 3.2

Sr No	Description	@ every 3000 Hrs (W 5 Routine)	@ every 6000 Hrs (W 5 Routine)
1	Time interval	After 3000 Hrs	After 3000 Hrs
2	Number of different items	225 x 2	300 x 2
3	Total cost	Rs. 6.2 million	Rs. 8.8 million

Table 3.2 Details of routine services of MTU Engines

Source: Commodore Superintend of Logistics (East)

(2.) **For general repairing requirements.** The items are ordered by respective technical Department (Engineering or Electrical) as the breakdown is reported.

ii. However it is noted that the store is having non moving items worth Rs. 232 million as at 10th August 2015. The annualized description on non moving items is shown at table 3.3 and the trend of the movement is continuing (see figure 3.1). Therefore it is demonstrate the error exists in current ordering process. The study team revealed that causes of the problem of accumulation of non moving items occurred mainly due to following reasons.

- (1.) The most of instances items have been ordered while the required items are available in the stock.
- (2.) The items ordered for routine services (WS and W5) are not withdrawn as a package. The remained parts are hidden due to absence of having proper monitoring system at the store.
- (3.) Items are ordered due to unpredictable lead time as safety precautions by the technical Departments. However the requirement may not be exists as the item reach to store.

YEAY	ENGINEERING ITEMS Rs.	ELECTRICAL ITEMS Rs.	TOTAL Rs.
2008	74,510,363.48	28,470,902.84	102,981,266.32
2009	20,415,507.98	2,892,884.34	23,308,392.32
2010	8,902,334.85	1,223,949.76	10,126,284.61
2011	3,778,842.93	2,165,297.95	5,944,140.88
2012	8,772,646.56	6,057,636.91	14,830,283.47
2013	18,166,510.45	3,241,511.04	21,408,021.49
2014	14,530,528.71	3,686,417.34	18,216,946.05
2015	27,793,713.38	8,120,161.27	35,913,874.65

Total

Rs. 232,729,209.79

Table 3.3 Values of Non Moving Items in Dvora Stores

Source: Commodore Superintend of Logistics (East)

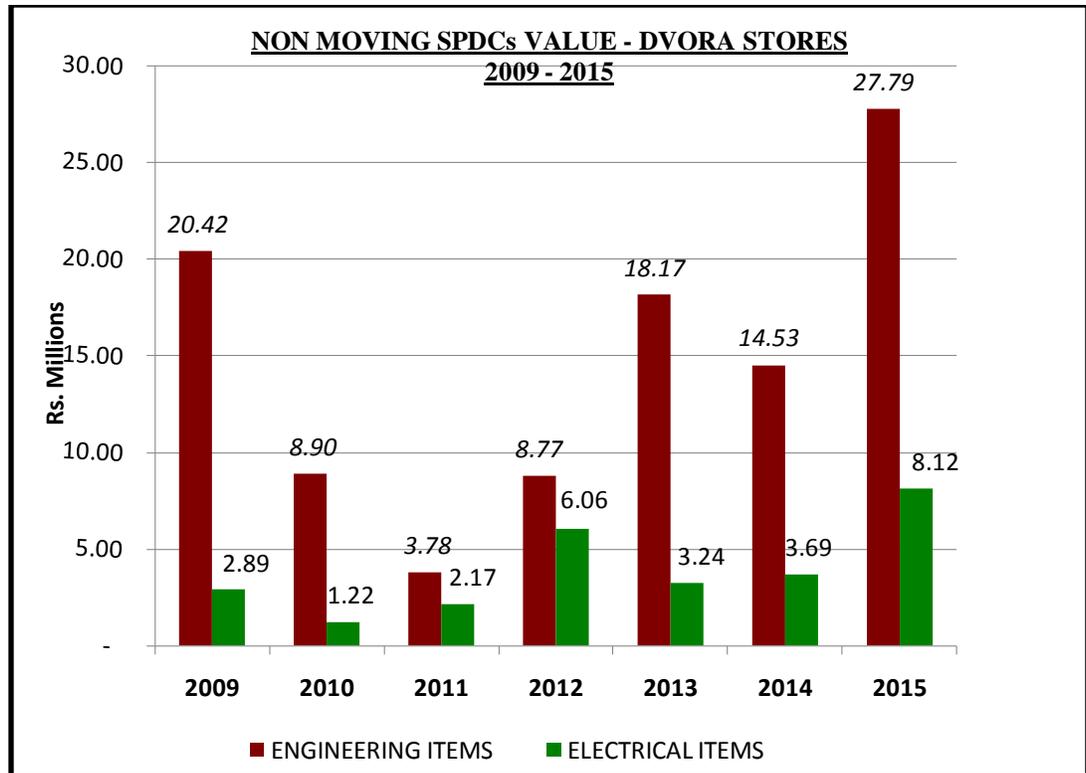


Figure 3.1 Annualized Non Moving Spares in Dvora Stores

Source: Commodore Superintendent of Logistics (East)

iii. The availability of the items also can be viewed by the end user prior ordering the items on ILMS. However the team was able to identify that most of the requisitions have been made without considering the availability of the stock which has led to aggravate the problem of accumulation of non moving items. Therefore the existing ordering process should be reviewed.

b. Does existing purchasing process support effective utilization of limited financial provisions?

The purchasing process led by improper ordering process does not support effective utilization of limited financial provisions. The amount of working capital tied up in the non moving items is indicates that, the authority has not considered to plan the purchasing process according to the requirement. The purchasing has done without any rationality where the liquid cash or the working capital which are tied up in the non moving items could have been used for some other purpose which are necessarily should have been utilized. The opportunity cost of

losing to utilize the money tied up in non moving items amounts to Rs 232.7 Million. This clearly demonstrates the irresponsible way of purchasing and negligence in handling public money.

c. Do they consider about the inventory holding cost?

The inventory holding cost is also another important fact. The space utilized to store the non moving items could have been utilized for some other purpose if those items are issued. But the manpower, electricity and other administrative expenses to maintain such items are in vein.

d. Do they consider about inventory redundancy cost?

This is the biggest problem of maintaining non moving items. These items are purchased for a special reason where the spare parts can only be utilized by Sri Lanka Navy. No other organization is having these kind of machineries to utilize the spare parts which is the salvage value would only be restricted to material value of the item. However in some instances the salvage value may be zero as no one is willing to purchase such item due to remote in secondary utilization. Therefore the redundancy cost of such non moving items are very much high.

e. Do they consider the overhead costs?

The over head costs such as transport, electricity, water, salary, security, are charging on all these stocks. The most vulnerable problem of the storing yard is the cost incurred to maintain a storing yard in an old building which does not support to carry out such an important operation. The most of stores are older than 100 years which had built to cater for smaller fleet. It is sad to see the way of laying down the stocks at the stores due to non availability of adequate space. The bin racks are also in dilapidated condition as the buildings and the most the racks are not consolidated with the items marked to be stored. Therefore the overhead cost incur in these stores could have been minimized with new concepts such as electronic warehouse concepts which are developed with information technology.

f. Does the staff have a sufficient technical knowledge to perform the job?

The study team understood that the knowledge of the staff attached to store is far below than expected. They do not possess basic knowledge about the different kind of spares parts which is a mandatory skill to be possessed. The staff should possess minimum knowledge on the different parts in the engine where that will enhance efficiency of the job. The absence of this knowledge leads to create number of problems such as inability to double check the items being ordered by end user, losing the opportunity to advise end-user about availability of stock when ordering and regarding non moving items. The existing staff in the store is now similar to people living in the boarding place, where they come and go and no interest about the affairs in respective place. Therefore the opportunity to enhance the productivity in store will never come realistic. Therefore it is a high time to re-think about our training with practical perspective rather than sticking in to conventional training concepts such as class room teaching. These staff should be provided with the basic technical knowledge and required to negotiate with relevant manufacturer on this matter to obtain training berths for logistics officers and sailors.

g. Do they have a proper post purchase auditing procedure to detect the errors?

The store has no proper post purchase auditing procedure to detect the information such as identifying the persons responsible for particular purchasing, the purpose of purchasing and reason for not withdrawing items once reach them to store. If these details could obtain the problems of non moving items would have minimized as the store is able to alarm relevant end-user.

CHAPTER 4

JUST IN TIME (JIT) CONCEPT

Introduction to the proposal

4.1 Just in Time is a Japanese management philosophy applied in manufacturing organizations which involves having the right items of the right quality and quantity in the right place and the right time. It has been widely reported that the proper use of JIT manufacturing has resulted in increases in quality, productivity and efficiency, improved communication and decreases in costs and wastes. Potential of gaining these benefits has made many organizations questions and consider this approach to manufacturing. For these reasons, IT has become a very popular subject currently being investigated by many worldwide organizations. Just In Time management involves the application of old management ideas; however, their adaptation to modern manufacturing firm is a relatively new practice. Presently many firms are studying and applying the JIT approach in response to an ever more competitive environment. Following are some key elements of JIT.

- a. JIT exceeds the concept of inventory reduction; it is an all-encompassing philosophy geared to eliminate waste, anything that does not add value.
- b. A broad JIT view – or lean production/lean systems - is one that encompasses the entire organization.
- c. JIT originated in Japan at Toyota Motor Co, fueled by a need to survive the devastation post WWII.
- d. JIT gained worldwide prominence in the 1970s often termed “Lean Production” or “Lean Systems”.
- e. Broad view that entire organization has the same goal - to serve customers.
- f. JIT is built on simplicity - simpler is better.
- g. Continuous improvement.

- h. Visibility – all waste must be visible to be identified and eliminated.
- j. Flexibility - to adapt to changes in environment.

Necessary Tools for JIT Implementation

4.2 A JIT production system, as explained above, aims at minimizing work-in-process and Finished-goods inventories, reducing lead-time, and increasing product quality. In order to achieve these by implementing a JIT manufacturing system, the following aspects and steps should be put into consideration.

a. Getting the Commitment of Top and Middle Managers

The involvement of Top management is an essential requirement in implementing JIT philosophy in an organization .Implementing JIT requires strategic decisions in the organization as it requires a fairly large amount of financial provisions and transformation of the existing process. Implementation of JIT will be obstructed by other employees in the organization due to the resistance to change. Therefore commitment of top management is required to ensure the organization wide commitment for JIT implementation.

b. Establishing Long-Lasting, Reliable Relationships With Few Suppliers

Implementation of JIT requires an strategic alliances with suppliers unlike the conventional relationship that is maintained with supplier at present. It is required to short list few qualified suppliers with whom the organization can establish a reliable long term partnership. Following factors have to be considered when selecting suppliers for JIT implementation.

- a. the supplier's ability to provide high levels of quality;
- b. the supplier's ability make frequent deliveries of small lots;
- c. the supplier's capability for continuous improvement;
- d. the supplier financial strength;
- e. price

c. Standard Work Concepts

4.3 Standardization of works performed in the warehouse is a mandatory requirement in JIT implementation. All processes of the warehouse must be standardized with best industry practices that are essential in JIT operations. Once the procedure is standardized, there will be no variation in the process. Therefore, a work procedure must define every detail as clearly as possible. Otherwise, each operator will perform the task in a way he likes. Also, if the work procedure is made clear, the worker will make high-quality parts with less variation.

d. Creating a Clean, Orderly Work Environment

4.4 An orderly arranged working environment with clean atmosphere is another pre requisite in JIT implementation. Because in a JIT environment organizations endeavor to minimize waste and the environment must be conducive identify any waste taking place in order to effect necessary remedial measures.

f. Flexible Facilities and Multi- Skilled Workers

4.5 The flexibility of facilities and skills of the workers play an important role in JIT implementation. The workers must be multi skilled in performing duties such as forecasting requirements, inventory maintenance, receipts and issues, storing procedures of various inventory items. The conventional work facilities and conventional worker skills will not ensure any JIT environment.

CHAPTER 5

APPLICATION OF JUST IN TIME (JIT) CONCEPT TO CSLOG (E) SY

Background and Motivation

5.1 As discussed in above chapters, Just In time is philosophy introduced to enhance the efficiency of the production in order to achieve product excellence and competitive advantage in business operations. Similarly this concept can be applied in to warehouse operations in order to enhance the efficiency in warehouse operations. The storing yard at CSLOG (E) is identified as a place where a huge amount of spare parts has been accumulated over the years amounting millions and lying in the inventory without any usage. Further there has not been any comprehensive involvement of the top management to resolve these issues which has severe negative consequences in managing public finance. Therefore, positive involvement of top management in resolving these issues is extremely essential.

5.2 The kind of relationship that they have maintained with the supplier seems to be on very ad-hoc basis and no attempt has been taken to involve suppliers to resolve these matters. The work procedure or method of operations in the storing yard is at a very primitive level and no standardization in work process or operations.

5.3 Though the inventories carry spare parts worth of billions, there are no properly arranged warehouses and condition of the warehouse is not very conducive and worker friendly. Especially the Dvora stores have been established the first floor of the two story building. This requires the workers to carry spare parts from the receiving bay to the stores by person and whenever they are issued, the party receiving spare parts will have to carry them by person to the necessary workshop. All warehouses have been built during the rule of British's in the country and no satisfactory level of renovations taken place. Water leaks through the roof during rainy days.

5.4 The available facilities in the warehouses and regulations governing the operations of the warehouses are not very flexible and always backed by rigid government financial regulations and various other operational orders and instructions. Further available workforce has very limited knowledge on inventory management and their knowledge on technical inventories, their operations,

and best industry practices are at a very poor standard. Further they are appointed for a particular warehouse for very shorter period (maximum of two years) and they are not multi skilled.

5.5 Therefore, in order to overcome all draw backs highlighted above, implementation of JIT is considered the an appropriate initiative to improve efficiency of the storing yard.

CHAPTER 6

RECOMMENDATIONS

6.1 The study team found out that, the Dvora Stores is one of the most important stores for CSLOG(E) SY Because Dvora fleet has become the identity of our navy owing to the invaluable service contributed for last three decades until year 2009. Therefore the importance of having a proper store to facilitate the services and breakdown repairs is out of the debate.

6.2 However the process inefficiency of the stores has created a huge cost to SL Navy by now where the non moving items are accumulated as Rs. 232 million. Therefore this matter should be addressed immediately and the study team proposes following with regard to ‘non-moving’ items.

- a. To negotiate with the principle supplier to return the goods and exchange necessary future requirement for the value agreed.
- b. To explore opportunity to sell the items to other sister navies in the region.
- c. To appoint a top level independent board to inquire the matter and take necessary bold action against responsible persons for negligence of duty assigned.

6.3 The study team recommends taking complete process re-engineering on Dvora Stores on following way.

a. Introducing JIT for routine services (W6 and W5)

The JIT concept is mostly aligned with the manufacturing industries where the required items are supplied by pre-selected suppliers once the production is finalized. The aim of the JIT is to eliminate the costs related to stock maintaining thereby reduce working capital being tied up on inventory. Therefore the concept JIT can only be applied for the area of routine maintenance as the package for the service is predetermined and the dates required to attend the service also can be predicted. Since the important information such as date and the value can be estimated, required funds also can be allocated at the beginning of the year ensuring uninterrupted supply. The manufacturer should inform in this respect where it will open opportunity to enhance the current relationship than ever. Since they are using new IT related solutions SL Navy also can link in to their system to place the instead of soliciting local agent.

This will lead to save the money and also enhance the better relationship with principle supplier.

b. To maintain a liquid cash reserve worth Rs. 2 million for a quarter to purchase the breakdown spare parts requirement.

The end-user is only permitted to raise order after determining the exact item required to attend the repair and the purchasing Department has the ability to purchase the exact item from the manufacturer by the next available mean either by sea or air depend on the urgency. The maximum lead time will be two weeks and the availability of the liquid cash would permit purchasing department to carry out the job more effectively. This will ensure following.

- a. The exact item required to attend the repair will reach to the store.
- b. The utilization of the purchased item will be guaranteed and the responsible person can be traced.
- c. The opportunity to fall the item in to non moving would be zero.
- d. The effective utilization of scarce public money is ensured.

6.4 Therefore the proposed action could be considered to apply for the other stores as well after carrying out an in depth study on each store prior shifting the storing yard in to new buildings as highlighted in paragraph 2.2 in order to transform the existing conventional warehousing practices to suit the future electronic navy.

6.5 Re-locating of Dvora Stores. It is a necessity to re-locate the Dvora stores from its higher elevated location to ground floor of the same building where the Dvora workshop is nearby.

6.6 A cleaned and orderly working environment for Dvora Stores. The environment of the Dvora Stores needs to be uplifted with the clean and tidy working environment in order to increase the efficiency of the stores.

6.7 Imparting technical knowledge to the staff The staff employed in the Dvora Stores must be given adequate knowledge about the technical inventories and their characteristics in order to get them acquainted with the required technical knowledge.

CHAPTER 7

CONCLUSION

7.1 The study team was able to undertake a comprehensive study in CSLOG (E) Storing Yard for a period of 2 weeks in order to identify the possible drawbacks related to the overhead costs of the stores. The team carried out in depth study at Dvora Stores which represent 27% out of the entire CSLOG (E) Storing Yard. There are several drawbacks being identified at the stores and the problem of non moving items worth Rs. 232 million was significance among them. Therefore the team came up with proposals to streamline the stores due to the importance of functioning the store for SL Navy considering the service being provided to Dvora fleet. The material handling in the stores should be streamlined and the team proposed two viable solutions in relation to spare parts required for routine services and breakdown spare parts. That is to introduce JIT system for former and maintain a liquid cash reserve to combat the urgent spare parts for latter. These solutions would make a significant difference in the stores in addition to the other associated uplifting arrangements proposed in the areas of staff technical knowledge and the infrastructure facilities.

7.2 The following benefits can be achieved by successfully adopting the aforesaid recommendations.

- a. The level performance can be improved and the hidden inventory carrying costs would be able to eliminate.
- b. The deficiencies in existing inventory controlling processes will be eradicated; thereby the efficiency in the processes could be improved.
- c. The efficiency of the staff could be improved under a healthy working environment.
- d. The limited public funds could be utilized effectively and will be able to improve the productivity in the organization.
- e. This will lead Sri Lanka Navy to adopt new trends in industry best practices and gives opportunity to upgrade the standards in warehousing.
- f. The recognition of the organization will be improved and it will help to maintain a healthy relationship with other stakeholders such as suppliers, sister forces etc.