

# Controlling System of Material Inventory

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**Abstract.** This Research purposes to determine the application system controlling about inventory especially in the store or warehouse. The analytical method used is descriptive method with data from the company are weekly report of weld and factory consumable and with the interview process. The analysis technique used was to evaluate the activity of inventory control, implementation of inventory control and procedures should preferably be performed company. The results showed that in the store does not undergo inventory control activities such as conducting document authorization system, the division of task and the others. Based on the result of study it can be concluded that the existing inventory control especially in the store or warehouse did not go well and properly.

**Keywords:** controlling system of material inventory, shipyard

## Introduction

The development of the business world led to a lot of intense competition among the companies one with another company, this led to the company's leaders are trying to maintain the viability of its business. One way that's done is probably optimize management resources. Supplies liquid assets smoothly in the form of goods or supplies the most valuable within a company to support the activities of the production process, then the company tagline keep and manage inventory with a good supply of internal control. Control inventory available liquid is a problem often encountered by a single company. Supplies of goods required for the production process, if it is not available then it will cause losses because the company can't produce, then from that inventory should be managed with company engaged in the manufacture or repair of shipping. The company operates since 2001, the company continuously improve the quality and quantity of production. A whole range of products that will be used for the manufacture or repair of the vessel came from supplies of the raw materials is quite a lot of different types and variants, one of the raw materials contained in the material is the filter. The filter has a type of fruit water Filter serves to filter and remove dust from the air to enter and circulate clean air to the

engine, the fuel filter serves to filter out impurities in the fuel and the fuel flow to the engine in order to clean the combustion process is perfect and does not damage the injection system, and oil filter serves to filter out impurities in the oil and clean oil flow to the engine. Over the last three decades the company produces and fix ships from various countries, to meet the demand for the manufacture or repair of ship much-needed supplies are always available with guaranteed quality. The inventory in the warehouse tagline guarded to prevent obsolete, because if out of date can cause could no longer be used for production. Inventory at the company being sued should always follow the quality standards applicable within the country and abroad, when companies are unable to follow the quality standards that apply, then the company will lose the trust of customers who would buy the ship as well as customers who will repair the ship, and will result in the lack of profitability for the company. Some of the problems frequently encountered on the occurrence of Indonesia are stock filter material wear and tear, this is caused by the use of filter material stock for production boats with one other ship takes a long time and storage supplies are inadequate, as well as filter materials in the purchase planning of a project not yet again and start work efficiently, besides that it's a problem that exists in inventory control is the

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mismatch between the filter material specifications ordered by the filter materials it comes from the supplier, this is caused by the filter material is not supplied with the filter specifications materials needed for production. The problems facing sample company is also the existence of a discrepancy with the task and start responsibility caused by no separation of functions between the receipt of the material by removing the material and the absence of the head of the warehouse is in charge of coordinating every activity that is in the warehouse. The issue contained in the controlling function also there reception stuff was authorized to all existing employees in the warehouse to authorize the document, so it can potentially come the conspiracy, fraud, and the loss of existing inventory in the warehouse. From the explanation above, the problem needed a proper inventory control and effective compliance with the conditions of these companies, so as not to interfere with the company's production process in maintaining the existing supplies and affect the profits of the company.

## Literature Review

### *Inventory Management*

Inventory management is the ability of an enterprise to regulate and manage a company's every need good raw materials, semi-finished, and finished goods to be available both in a stable condition and fluctuates (Fahmi, 2012). To realize the preparation done in a good and stable the company should apply the concept of inventory management a realistic and acceptable to the various parties. In the amount of inventories, every company has a different number, and the number was adjusted to the conditions and the desired inventory management concepts company.

### *Purpose of the Inventory*

It is very important for companies to segment your inventory based on its use. According to Pardede (2007) there are some supplies that can be used in determining the purpose of its use, namely:

- a. Inventory cycle (cycle inventory)

Part inventory varies with the number of change orders.

- b. Safety supplies (buffer stock)

The supplies are meant to cope with the uncertainty of the request, the waiting period, and a quote.

- c. Supplies just in case (anticipation inventory)

The inventory who was held with the intent to be guarded to a request or offer that rippled up and down.

- d. Supplies in route (pipeline inventory)

Materials that are in transit or movement of the start point and end point on a transportation system or propagation of the material.

### *The advantage of having a quite Inventory*

The manufacturing industry is one of the industries that rely on the concept of inventory management in maintaining its activity in a stable and controlled. For manufacturing industry of the availability of supplies should always be observed, because this condition very influential towards the provision of supplies of raw materials and smooth industries. According to Fahmi (2012) there are several advantages to have sufficient supplies, namely:

- a. the existence of the opportunity to sell goods
- b. allow discounts
- c. reservation fee can be reduced
- d. ensure the smooth production process.

## Research Methods

The type of data used is the primary data collected through the questionnaire. The questionnaires in this study were: Subjective Workload Assessment Technique (SWAT) [6], Maslach Burnout Inventory (MBI) [14] and Performance Questionnaire Design by Patterson [10]. The questionnaire was distributed to 163 manufacturing companies in Batam randomly selected with each company given 50 questionnaires. Calculation of sample using slovin formula (from 276 population, got to 163 sample).

### *Inventory Control*

Inventory control realized through several record-keeping and inventory report containing information such as the use of inventory, inventory balances, and maximum and minimum level of inventory. The point of ordering a restart level (reorder point) supplies are used as consideration for ordering or producing additional items to avoid conditions that do not have inventory.

The purpose of inventory control is minimized inventory costs total, important decisions are made is a measure of the amount of any booking purchase called Economic Order Quantity (EOQ) (Krisniasji,

2005). Inventory control methods include methods for the handling or storage of classified and identified properly so that it can be placed appropriately and allows for the reporting and verification.

According to its purpose, the internal control system, there is some element of the subject matter. As for the internal control elements in the calculation of the physical inventory (Mulyadi, 2001):

a. Organization

Organizational structure is a framework (the framework) Division of functional responsibility to the organizational units that are set up to carry out the main activities of the Organization, to ensure accuracy and reliability of the data resulting from the calculation of the physical inventory, activities of the Committee which was formed to carry out such activities should consist of three groups namely: card holder, physical counter calculation, and checker.

b. record-keeping procedure and authorization system

System authorization and record-keeping procedures that provide sufficient protection against wealth, income and debt costs the company. Logging into the physical counting of the results list should be based upon the source documents (calculation of the physical cards) who have examined his righteousness by physical counting of the card holder.

c. a healthy practice in carrying out the duties and functions of each organizational unit in ways that are generally taken by the company in creating a healthy practices are:

1. Calculation of the physical Cards printed and numbered in order of their use is accounted for by the cardholder's physical calculation function

2. Quantity and other setup data listed in section 3 and section 2 calculation of the physical card is matched by the cardholder's physical calculation functions before the data listed in the 2nd part of the physical calculation cards are recorded in a physical counting of the results list.

3. The equipment and methods used to measure and calculate the inventory should be guaranteed thoroughness.

### *Type of Inventory*

There are various types of supplies. Each type has special characteristics and the way manage are also different. According to its kind, inventories can be distinguished (Rangkuti, 2004):

a. raw material inventory, i.e. intangible goods supplies of crude. These supplies can be obtained from

natural sources or purchased from the supplier or made by the company for use in the production process.

b. the preparation of assembly components (purchased), namely inventory goods that consist of components acquired from other companies, which can be assembled directly into the product.

c. Inventories of goods in process (work in process), the supply of goods which are the output of each part in the production process or have been processed into a form, but still need to be further processed into finished goods.

d. Preparation of material helpers or helper (supplies), the supply of goods that are needed in the production process, but not a part or components of finished goods.

### *Internal Control System*

The system of internal control is a process that is run by the board of commissioners, management and other personnel that are designed to provide sufficient confidence about the achievement of three objectives i.e. constraints of financial reporting, compliance with laws and regulations, the effectiveness and efficiency of operations (Mulyadi, 2002).

According to the objective to internal control are grouped into three namely (Romney, 2004):

a. Preventive Control

Preventive control act as instructions to prevent problems before the problem actually occurs.

b. Detective Control

Detective control aims to provide guidance such after the problem where problems occur.

c. Corrective Control

Corrective control aims to solve problems that are found by the detective control. Identifying the problem causes the material mixed in storage, so the corrective control justifies the errors that happen with revising the material back into the field.

### *The object of supervision in the internal control*

According to internal control object is dividend into several objects of supervision as follows (Romney, 2004):

a. The General Supervision

General supervision is supervision which is designed to ensure that the environmental supervision organization managed to increase the steady effectiveness.

b. Supervision Application

Supervision of the application referred to the oversight to prevent, detect, and the mistakes that happened so that in the process.

#### *Internal Control Data Processing Cycle*

According to the place and the data processing cycle in the implementation of the internal control, divided into several parts (Romney, 2004):

##### a. Supervisory Input

Surveillance of the intended input control is designed to ensure that only legitimate, accurate data, as well as authorized are included. Party Supervisor for direct material store should do a review into the field with a way of communicating on data inputted a valid material.

##### b. Oversight Process

Oversight process is designed to ensure the supervision of all transaction requests accurately and completely, all the files and update quickly.

##### c. supervision of the Output

The intended output supervision is designed to guarantee that the output system is regulated properly.

#### *Internal Control Function*

Function that was formed to carry out the calculation of the physical inventory is generally temporary, usually shaped in Committee or committees, whose members are selected from employees who are not organized accounting records of inventory. Thus the function related to the physical inventory calculation system is (Mulyadi, 2001):

##### a. functions of Accounting

This function is responsible for diverting the quantity and cost of goods per-unit listed in the list of results calculation of physical conduct adjustment against a card based on the inventory data, the calculation result and make other needed documents.

##### b. the function of Warehouse

This function is responsible for performing operational adjustments to material in storage against the incoming materials or materials issued from the warehouse, this function is also obligated to do the Setup as well as the placement of material in storage, so that the material does not suffer damage and have authorization in receipt of material and material expenditures.

##### c. delivery functionality

This function is responsible for handing over the goods to the buyer on the basis of copies of delivery order is received from the sales function.

#### *Inventory control system procedure*

Network procedures that form the physical inventory counting system is (Mulyadi, 2001):

##### a. physical Calculation Procedure

In this procedure for each type of inventory in the warehouse is calculated by the counter and Checker independently that the results recorded in the calculation of the physical card. Wear and tear of supplies which affect the inventory and cost of goods sold, then to ensure the accuracy of the number of supplies that are reported in the financial statements, a trading company or manufacturing needs to perform calculations of physical inventories (physical inventory) that calculate inventory is physically, the company definitely do reevaluate against supplies mainly contained in the barn, this is done by the company with the aim to get the accuracy of the value of the company's inventory in the warehouse

##### b. Procedure Compilation

In this procedure the cardholder physically do a comparison calculation data recorded with the card calculation of physical as well as doing the recording funds listed into the calculation of the physical card

##### c. Adjustment Procedure

In this procedure the card parts inventory make adjustments against the inventory data is listed in the inventory cards based on the results of the calculation of the physical

d. procedure for the determination of the price of the staple supplies

In this procedure the card part inventory fill rates per unit of each type of inventory is listed in the list of physical calculations based on the information in the card supplies are concerned.

## **Results and Discussion**

### *Wear and Tear the Filter Material in the Warehouse Stock*

Stock material filter is a filter material stock used for the production of raw materials. Stock material is usually used to filter impurities are mixed with carbon, silting, and others. So it can be concluded that the function of the oil filter on the lubrication system is to filter dirt-dirt in the oil, before that oil lubricates the engine parts such as crankshaft, valve mechanism, and so on, in the parts that move and rub against the lubricated by oil that is dirty or there is dirt, then it can lead to these components will quickly become worn

out, moreover can cause damage. To produce a ship required 1-2 filter material, depending on the type of ship that will be in production. The problems of the stock filter material i.e. limit the use of stock material filter for production boats with one other ship that takes a long time giving rise to wear and tear on the filter material has to be used for production. In addition, storage of supplies are inadequate and planning in purchasing material filter, so there are supplies filters that result in a project have yet to work efficiently. The impact of the stock filter material wear and tear that is not can the passing production.

#### *Material Specification Filter Mismatch Occurred*

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#### *Duties and responsibilities of a mismatch*

Duties and responsibilities is something that must be done or something orders that have been determined to do, work that is the responsibility of the person, work that is charged, and should be run in accordance with their respective functions. Duties and responsibilities is a form of accountability for individual or organization. In addition to the status, role and functions according to the hierarchy, roles and responsibilities can also be defined as an occupation. Jobs charged, something that is required or prescribed for the command in order to do something in a certain position. The issue contained in the duties and

responsibilities of the discrepancy is the existence of duties and responsibilities. The existence of discrepancies there are duties and responsibilities on the part of the warehouse. At the warehouses, when the goods come from a supplier, who is in charge of checking the filter material is only part of the warehouse, purchasing section did not enter check the material to come. On the part of the warehouse is also no separation of functions between the receipt of the material by removing the material, so that part of the warehouse is also not able to focus on a single task anyway, namely for storage of materials as well as overseeing the existing material in the warehouse. Duties and responsibilities at the warehouse are not described in detail so that the employees do not understand the duties and responsibilities of a given company, and result in a weak and control authorization system. In additional part of the warehouse also has no head of warehouse in charge of coordinating every activity that is in the warehouse.

#### *Weak Authorization Documents System*

Authorization is the process to permit someone to do or something to verify if the person really have a right to access something. Authorization is often documented as signatories, marking signature or enter the authorization code over a document or a record of the transaction. Preferably, the management can give authorization on employees to handle routine transactions without special approval, or referred to as public authorization procedures (general authorization). The authorization is a management function that is directly related to the responsibility for achieving the goals of the company and is the starting point for drawing up supervision against supplies over those transactions that occur in the company. The problems found in the authorization system document namely weak system of authorization documents. These problems are caused by certain parties there is no appointment that could authorize so all existing employees in the warehouse to authorize the document relating to the receipt of the goods. The impact of the weak system of authorization documents i.e. can potentially cause the discrepancy amount nor the specification supplies because all employees are empowered to authorize the document.

#### *Solution of the Problem*

Based on the inventory control system problems that have been described, needs to be done in order to

control activity efforts inventory control system in accordance with the working procedures. Efforts to inventory control system solutions are:

a. the wear and tear on the filter material stock warehouse

In place of the existing inventory in storage sheds inadequate company should order in accordance with the amount needed for production, companies have to choose between buying in bulk but the condition of the goods quickly obsolete, or company purchase in accordance with required but the company had to order many times.

b. the mismatch between the filter material specifications requested by filter material coming from the supplier. When the company ordered the filter material must be accompanied by a clear material specifications, and not just a picture of the material, as well as when the company received the material specification, the specification should be so basic checks when the incoming material as well as material comes out of the warehouse.

c. the existence of discrepancies with the duties and responsibilities

On the part of the warehouse must be separated between the receiving and delivering the material. In additional part of the warehouse is also supposed to have the head of warehouse in charge of coordinating every activity that is in the warehouse.

d. existence of the weakness of the system of authorization documents

Authorization is important in limiting the activity of the transaction, so that in authorize should be granted to those authorities nor the elected or appointed the responsible party authorizes the incoming material as well as material out.

## Conclusion

As for the inferences that can be outlined are:

a. Inventories stored in warehouses in quite a long period of time and place of storage of supplies are inadequate cause the filter material in the warehouse stock becoming obsolete, as well as planning in purchasing material filter a project yet to work efficiently.

b. the occurrence of mismatch between material specification filter materials ordered coming from the supplier.

c. parts and functions related to the preparation did not yet have a separation of functions between the receipts of the material by removing the material, and

do not have the head shed that is in charge of coordinating every activity that is in the warehouse.

d. the absence of the designation of certain parties can authorize that all existing employees in the warehouse to authorize the document relating to the receipt of the goods.

The following suggestions can be given:

a. existing Inventory in the warehouse should correspond to the amount needed and do not accumulate in store so do not cause wear and tear on the filter material and storage of supplies that are in the warehouse must be adequate, as well as companies need to do planning in purchasing material filter so that production can work efficiently.

b. in ordering material filter, the company should include a clear material specifications, and not just in the form of an attachment picture material.

c. Part of the warehouse should have the head of warehouse in charge of coordinating every activity that exists on the part of the warehouse, the warehouse section additionally must separate between the receiving and delivering the material.

d. Authorization is important in limiting the activity of the transactions, so should authorize designated in the responsible party authorizes the incoming material as well as material out.

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