

Inventory Management Systems of Anwar Jute Spinning Mills Ltd. in Bangladesh

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Requirements for the Degree of
Masters in Procurement and Supply Management

Submitted to:

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CERTIFICATE FROM SUPERVISOR

This is to certify that Md. Nurul Huda, MPSM Batch # 4, ID-13282001 has prepared the dissertation entitled “**Inventory Management Systems of Anwar Jute Spinning Mills Limited in Bangladesh**” under my supervision. I do hereby approve the content of this dissertation. This is for the partial fulfillment of the requirement for the degree of Masters in Procurement and Supply Management (MPSM) at the *BRAC* Institute of Governance and Development (*BIGD*) in *BRAC* University.

Date

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Chapter 1 Introduction

1.1 Background of the Study

Industries play a main role in the economic development of every country. This is why industrialization has been adopted as a vital instrument of economic development in many developing countries. Realizing this, Government of Peoples Republic of Bangladesh has facilitated the jute Yarn Company by providing necessary loans and incentive. So, that the company can run their business smoothly. Although the jute yarns business is potential in our country. That is why their jute yarn manufacturing company producing jute yarn and exporting them in various country of the world and making contribution to the national economy of Bangladesh.

Inventory management system has two main concerns. One relates to the level of customer service, that is, to have the right goods, in sufficient quantities, in the right place, and at the right time. The other relates to the cost of ordering and carrying inventories. As a hundred percent export oriented manufacturing company, Anwar Jute Spinning Mills Limited places a great importance in valuation and management of inventories.

The management is feeling that their huge amount of obsolescent stock is held up, so the management wants to know whether they can reduce it through inventory management systems (IMS). The study was carried to know how inventory management systems help in proper maintenance of obsolescent stock. So the title of this study is "Inventory Management Systems of Anwar Jute Spinning Mills Ltd. in Bangladesh.

1.2 Objectives of the Study

This report examines the procurement and inventory management systems policies practiced in Anwar Jute Spinning Mills Ltd. (AJSML). The information about the operational policy has been taken from the entrepreneur, executives, accountants, and other employees of the company. The objectives of the study are to find out what are used in a manufacturing company, how they are using them, what are the suitable policies for the manufacturing company, how a company can formulate a suitable policy for its business, how capable they are in pursuing suitable policies, how they are dealing with these policies, what kinds of people are needed for formulating suitable policies, the company who are practicing accurate policies are in what position, the company who are failed to set up accurate policies for their business is what position & what aspects of a policy maker need to scrutinize & evaluate of its particular operational policy.

The objectives are summarized as follows:

- To analyze the efficiency of Inventory Management of Anwar Jute Spinning Mills Ltd.
- To identify optimum level of inventory which minimizes the cost.
- To identify the safety stock level for various components.
- To classify the various components based on its value and movements.
- To identify inventory requirement of the company for the next year
- To get an overall idea about the existing operational, and marketing policy of Anwar Jute Spinning Mills Ltd. (AJSML);
- Evaluate the particular existing operational policy;
- To determine the limitations or problems (if any) of the operational policy;
- To recommend necessary steps to overcome such limitations

1.3 Rationale of the Study

Inventory consists of usable but idle resources. The resources may be of any type- human, materials, machines, etc. For example, if a company purchases a machine or appoints an expert in anticipation of the requirement of their services in future, these resources work as inventory. Generally, inventory of men or machines is not carried and managements hire machines or consult experts whenever required, as an economical alternative. When the resource involved is material or goods, it is referred as the stock or simply as 'Inventory'. Inventory is the stock kept for future use to synchronize the inflow and outflow of goods in a transaction. AJSML follows the requirements of Inventory Management.

1.4 Scope of the Study

Inventory Management of Manufacturing public limited company is a broad area. Within the time period of one month allotted for dissertation, it is virtually impossible to cover all aspects of Inventory Management. So, the scope of my report is limited only to the compliance of those as followed by AJSML. In preparing the report, I review and analyze the information published in the annual budget report for the year 2015. Any change in Inventory policies in respect of providing information after this period is beyond the scope of my report.

Limitations of the Study:

1. All the comments made, conclusions reached and suggestions for possible improvement provided are purely based on my level of understanding, knowledge and my way of interpreting a particular statement.
2. AJSML follows a policy of not disclosing all the information needed to prepare my report for obvious reason.
3. Because of the lack of information, I have to make some assumptions that may cause few errors or personal mistakes in the report.
4. The report is mainly based on the information provided in the annual budget report of AJSML for the year 2015

Chapter 2 Company Profile

2.1 Background of the Company

Anwar Jute Spinning Mills Ltd. was established in 1997, Anwar remains as a fully export oriented organization. Current product range of Anwar consists of high grade jute yarn ranging from grist count 8 lbs to 28 lbs of 16667 M. tones per annum, with a vision to attain a production level of 18000 M. tones per annum in jute yarn only by the year 2015. Unique innovations at Anwar has enabled us to process natural jute yarn into bleached, dyed, coated, water repellent, fire retardant, wrought resistant, and more diversification's, their distinctive multi system finishing process provides the flexibility to their buyers with the option of packing their spools in weight ranging from 500gm in mini-spools, balls, and corollas spools to 40 kg in jumbo spools with wooden, paper or plastic centers, and finally packed in cartons, trusses, or pallets.

Mainly their customer s, their suppliers, and personnel engrave their successful endeavor in jute. It is the close cooperation among them all that has enabled the development & production of individualized technical and industrial natural jute yarn for numerous applications. In accordance with specific demands of their valued customers, the deliver natural jute yarn.

2.2 Policy

Policy means to take some strategic steps to run or operate the whole process of a company accurately.

Operational Policy:When the company takes a clear cart, specific and strategic steps to operate their total operations then it is called operational policy.

Procurement Policy:Procurement Policy refers to the policy which is used by the company while purchasing their raw materials, consumable items and so on. Purchase policy basically formulated by considering two thinks. One is credit purchase another is cash purchase. When a company by their required raw me trials in cash, then they follow cash purchase policy. In cash purchase, the company / purchase is more

powerful. Because they purchase in cash. On the other hand, when the company purchase their requires raw materials in credit, then they follow the credit purchase policy. In credit purchase, supplies are more powerful.

When the authority formulates the purchase policy, they must consider whether the company buys their required raw materials cash or credit more.

Anwar Jute Spinning Mills Ltd. follows both types policy to buy their required raw materials.

Sales Policy:The specific and strategic steps taken by the company for selling their products is called sales policy. They also need to consider cash sales or credit sales, while the company formulates the sales policy for their total sales process. As Anwar Jute Spinning Mills Ltd. is fully export oriented company, they always follow export sales policy for their product. Anwar Jute Spinning Mills Ltd. mainly sales their jute yarn to foreign firms on letter of credit (L/C) when any export is occurred, to banks on behalf of both parties deal the total payment as this bank are the guaranter of both parties.

2.3 Anwar Group of Industries

While the trading history of the Group and family started from 1834, the Industrial history of Anwar Group of Industries (AGI) stretches back almost nine decades, when Late Rahim Buskh set up an ivory button & comb manufacturing plant. In the early forties, they had the privilege of being the 1st Bengalis to setup and operate a textile unit named **Anwar Silk Mills Ltd.** It has been a great honor for the Group to be a part of the history of industrialization in this country. The Group has diversified into most of the important industrial and business sectors playing its part in the economic growth of Bangladesh. Anwar Group foresight and innovativeness has the distinction of being the first electrical cable, polyester fabrics, corrugated pipes and super enamel copper wire manufacturer in the country. Anwar Group of Industries also has become one of the largest corporate Business conglomerates of the Country. They had never to look back since.

Anwar Group is now one of the selected leading this country on the road to prosperity through industrialization. They are also honored to have been the promoters of the first private commercial bank (The City Bank Ltd) of Bangladesh.

2.4 Jute: (Golden fibre of Bangladesh)

Jute is an indigenous crop plant used from time immemorial for various domestic, households, and farmyard uses. Similar to that of cottons principal chemical constituent components, Jute is also the second most important natural fiber in the world, next only to cotton. Also known as the “**Golden Fiber**,” other important characteristics of jute includes its silky luster, gold-like color, high tensile strength and low extensibility, Bangladesh has a distinct agro ecological comparative advantage in production of jute. With increasing environmental awareness, a co-friendly and biodegradable jute products are gaining popularity globally for effective retardation of ecological degradation due to the green house effect.

Over centuries, jute has developed from simple origins to an efficient raw material for industrial and technical fabrics and products. Our end product Jute Yarn, is used in widespread areas of fabric manufacturing for the automotive industry, base cloth for floor coverings, fabrics for natural fiber reinforced composites, Upholstery and home furnishing, construction, agriculture, horticulture, soil saver for erosion control, Packaging and many more.

Their commitment:

01. To their clients: Quality care and service
02. To their staff: Fulfilling, safe & rewarding work environment.
03. To the society: To keep pollution free environment
04. To Government: Bring glory for country.

2.5 Their Mission

The mission of Anwar Jute Spinning Mills Ltd. is to be the market leader by satisfying the needs of jute yarn and yarn related products to manufacturer with supplying a high quality jute yarn at a reasonable price.

Their vision

Anwar Jute Spinning Mills Ltd. has been working as a development associate in building up the homeland for one country. Now at the outset of the twenty-first century, Anwar Jute Spinning Mills Ltd. is over more prepared for heeding the challenging demands of the new millennium. Highly qualified management team, modern management techniques and R&D have empowered the unit to be the forerunner in economic progress of the country. Anwar Jute Spinning Mills Ltd. shall be at the forefront to herald the millennium on the horizon.

Values

Anwar Jute Spinning Mills Ltd. has built their strength on more than a century of experience. The cornerstone of the company's success is sharing knowledge to create relevant solutions- shaping the best thinking to reflect the ideas of a new age. Their corporate strategy emphasizes speed, efficiency, flexibility and innovation in every facet of the company's operation-from product development to manufacturing, and from procurement to distribution, Anwar Group strives to achieve the ultimate goal of satisfying its customers. Honesty, integrity and respect for people are their core values and are the basis on which they do business. Through a nation-wide commitment to advancing this objective, Anwar Group and its many partners who share this commitment, have succeeded in creating a national & international network that comprises of many subsidiaries and affiliates. They are paving the path of their journey into a new millennium for the next generation.

The Objects for which the company is established are all or any of the following and in constructing the following sub-clauses the scope of no one of such sub-clauses shall be deemed to the limited of affected by the scope of any other sub-clauses.

2.6 Objectives of the Company

- (01) Uphold the interest of the client paramount.
- (02) Provide visible & consistent quality service.
- (03) Ensure assessable, specialized and effective care.
- (04) Promote an environment of learning and research & development
- (05) Embrace a culture of continuous improvement and innovation
- (06) Provide a safe work environment
- (07) Comply with the applicable WTO Legislation and export requirement
- (08) Reduce, reuse and recycle their waste and resources
- (09) Foster a culture of WTO awareness and risk Management.
- (10) To form erect construct, establish, set-up, develop, promote, build, jute yarn mills, jute mills specialized jute mills, jute processes, jute twine mills, cotton mills, textile mills, specialized textile mills, jute tape mills, rayon mills, silk mills, woolen mills, fibrous mills, synthetic mills, newsprint mills, rice mills, flour mills, crushing mills, hard board mills and factories as may be allowed by the Govt. From time to time, and to do and carry on the business of spinners, weavers, manufacturers, dealers, brokers, shippers, importers, and exporters of jute yarn jute, jute goods, hessian, sacking bags, twine, carpet backing, blankets, jute cuttings, jute rejections, jute sticks, mesta, rayon, linen, silk, yarn, cloth, wool, synthetic fibres and all other fibrous materials.
- (11) To carry on in Bangladesh and close where as may be hereafter determined by the company or any of the business of spinners, weavers manufacturers, balers and processors of jute, jute cuttings, jute cultivation thereof, and the business of buyers, sellers exporters and importers dealers in jute, jute outings, jute sections hemp, cotton, flax and any other fibrous materials and of good of paring necking and other business that may be necessary or expedient, and to purchase and raw materials and manufactured articles;

(12) To carry on all or any of the business of spanners doubles, weavers and manufacturers of south sacking, bags, twice and other good and fabrics from jute, flax, hemp and other fibrous materials, also the business of yarn yarn merchants, bleachers, and dyers and makers of vitriol bleaching and dyeing materials and to purchase, comb, prepare, spin, days and deal in jute, flax hemp and other fibrous materials, and to buy, sell and deal in jute flax, hemp, cloth sacking bags, twine, synthetic yarn, rayon yarn and other goods and fabrics;

(13) To sell, export or otherwise deal with jute, raw or manufactured and its by-products in any market whether in Bangladesh or in any part of the world.

(14) To purchase, import or otherwise deal with and any raw materials and machinery from any market in Bangladesh or any part of the world.

(15) To purchase, take or in exchange or allotment or hire or otherwise acquire, erect, maintain, equip, reconstruct, repair, renovate, or adopt movable or immovable property including building, residential bungalows, labor lines, quarters, offices, paces of workshop, schools, dispensaries, reservation rooms, canteen, clubs, warehouses, godowns structures, creations, workshops mills, foundries, places for manufacturing, plant, machinery spindles, looms presses, engines, tools, electric and telephone installations, accessories implements, appliances, apparatus, articles and other things found necessary or convenient for the purpose of the company and for the welfare of the employees of the company and also to expand the business of the company by purchasing, acquiring, getting transferred, adding to enlarging of all or any of the buildings, mills, factories, premises, places being the property of the company or on all or any of the lands for the time being the property of the company or in possession of the company and by expanding from time to time such sum or sums of money as may be necessary or expedient for improving adding to altering, repairing and maintaining the buildings, structures, machinery, plant and property for the time being of the company and to sell or mortgage or let out on hire all or any portion of the same as may be thought desirable.

2.7 Global export network

Anwar Jute Spinning Mills Ltd. is a fully export oriented company. They have a global export network. . The countries where the company exports their products are – Australia, Belgium, China, France, Germany, Iran, Italy, Japan, Korea, Netherlands, Turkey, Saudi Arabia, Spain, and Switzerland.

Polices Practices in Anwar Jute Spinning Mills Ltd. are as follows:

2.8 Procurement of Raw Materials

Anwar Jute Spinning mills Ltd. mainly purchases two types of materials, such as:

- 1) Raw Jute and
- 2) Consumable Items.

Raw Jute Purchases:

Anwar Jute Spinning mills Ltd. have no raw jute plants of their own. They purchase their necessary raw jute from farmer through dealers, whole seller and their cash purchaser. They need about 72000 M. Tons raw jute per annum. 80% of total requirements are bought during the jute season. There are two seasons of jute purchasing in Bangladesh. The cultivable land of Bangladesh is not equally fertile in everywhere. In the low land area jute is planted basically in the month of April –May and harvest in July-August. Then the paikers and whole seller collect raw jute from farmers and store them for resell. On the other hand, the high land area such as the Northern side of Bangladesh plant jute in the month of August-September and harvest them in the month of November-December. The dealer, paiker and the whole seller buy raw jute from farmer and store them and sell them all over the country through their distribution channel. Anwar Jute Spinning mills Ltd. also buy their raw materials from these paiker and dealer.

Procurement

Jutes are produced al-most all over Bangladesh in the period of July to September generally in the low land. But it can also be produced in the high land in Bangladesh. Approximately 10,00,000MT jute's are produced in every year in Bangladesh. This jute's are used in production of different types of jute products.

From jute Anwar Jute Spinning mills Ltd. makes yarn for making clothes. Chat. Ropes, Bags and other jute related items. They also have a sister concern named Hossain Dyeing and printing mills ltd. Anwar Jute Spinning mills Ltd. colored their Yarn from their sister concern Hossain dyeing mills ltd. They have interred company transaction. Both the company work for one each another to save expenditure and production cost. Anwar Jute Spinning Mills Ltd. is situated at MeghnaGhat, Gozaria, Munshigonj. This location is selected because it has a good communication linkage both by the river and highway.

Anwar Jute Spinning Mills Ltd. generally collects raw jute from various districts in Bangladesh. These are Faridpure, Pabna, Munshigonj, Mymonsingh, sirajgonj, Rangpur, Gazipur, Jamalpur etc.

In these places the company has many dealers. They deliver 80% of the total collection of raw jute and whole seller and the rest of the 20% is collected through the purchasers of the company. Anwar Jute Spinning Mills Ltd. purchase raw jute from these dealers. Payment mode of which may be in cash or credit base. Dealers are responsible for delivery of raw jute to the MeghnaGhat. They generally deliver goods through the inland navigation.

Prices of the raw jute are fixed by the bargain purchase option. This totally depends on the current market price of raw jute. This total process is completely done by the direct observation of group Managing Director.

When the paikers send the raw jute to the factory, then the specialist and engineers check weight, grade, select, measure moisture etc. If they find any wrong then they inform it to the head office. If they found excess moisture then they deduct it from total quantity. Authority of Anwar Jute Spinning Mills Ltd. is remains on only the Managing Director Mr. HossainKhaled Syfullah . All the dealings made from head office according to the direction of Managing Director.

2.9 Payment policy

Sometimes the company pay advance to the paiker and the whole seller. The company also pays against bill within the agreement date. If the scarcity of raw jute supply is found then the company looks after carefully on the supplier. The company then pay advance to the paiker and the whole seller and also give more emphasis on the paiker and the whole seller. Company then gives special commission to the supplier. To fulfill the demand of raw jute the company takes necessary steps so that the production process should be continued. Otherwise the production process will be remaining stand still. If the production remains stop then the company will meet in loss. So no company wants to think that their production will stop for a single moment. By hook or cook the companies try to collect their required raw jute's.

Chapter 3 Literature Review

3.1 Introduction

Anwar Jute Spinning Ltd is the flagship of the Anwar Group of Industries, uses the most advanced and high-tech equipment from the world's leading manufacturers which are coupled with the best skilled technological support-expatriate staff and local experts trained at the suppliers' plant for the manufacturing and marketing of high quality Jute Yarn.

3.2 Objective of Inventory Management

The objective of inventory management is to achieve required levels of production while keeping inventory costs within reasonable bounds.

a) Overall Objectives:

- To utilize the full capacity of the factory, production is running for twenty-four hours a day and 350 days a year that minimizes overhead. So stock should be such that the factory will never close down due to lack of raw materials. On the other hand, over stock is not expected, as it will affect the working capital.
- A series of processes are required to produce Jute Yarn. It is not possible to start the next phase before completing the previous one. In case of mechanical disturbance of one machine, the next one will stop if sufficient WIP materials are not in the stock.
- The company is hundred percent export-oriented. So, in time delivery is very important. Otherwise, the buyers will cancel export contract. So, Jute Yarn should be stored to meet the customer's requirement.
- The company used to go to production under particular order. Usually buyers require different types of quality Jute Yarn. So in case of stocking raw materials, it must be considered that no particular material will be in the store for a long time.

b) Specific Objectives:

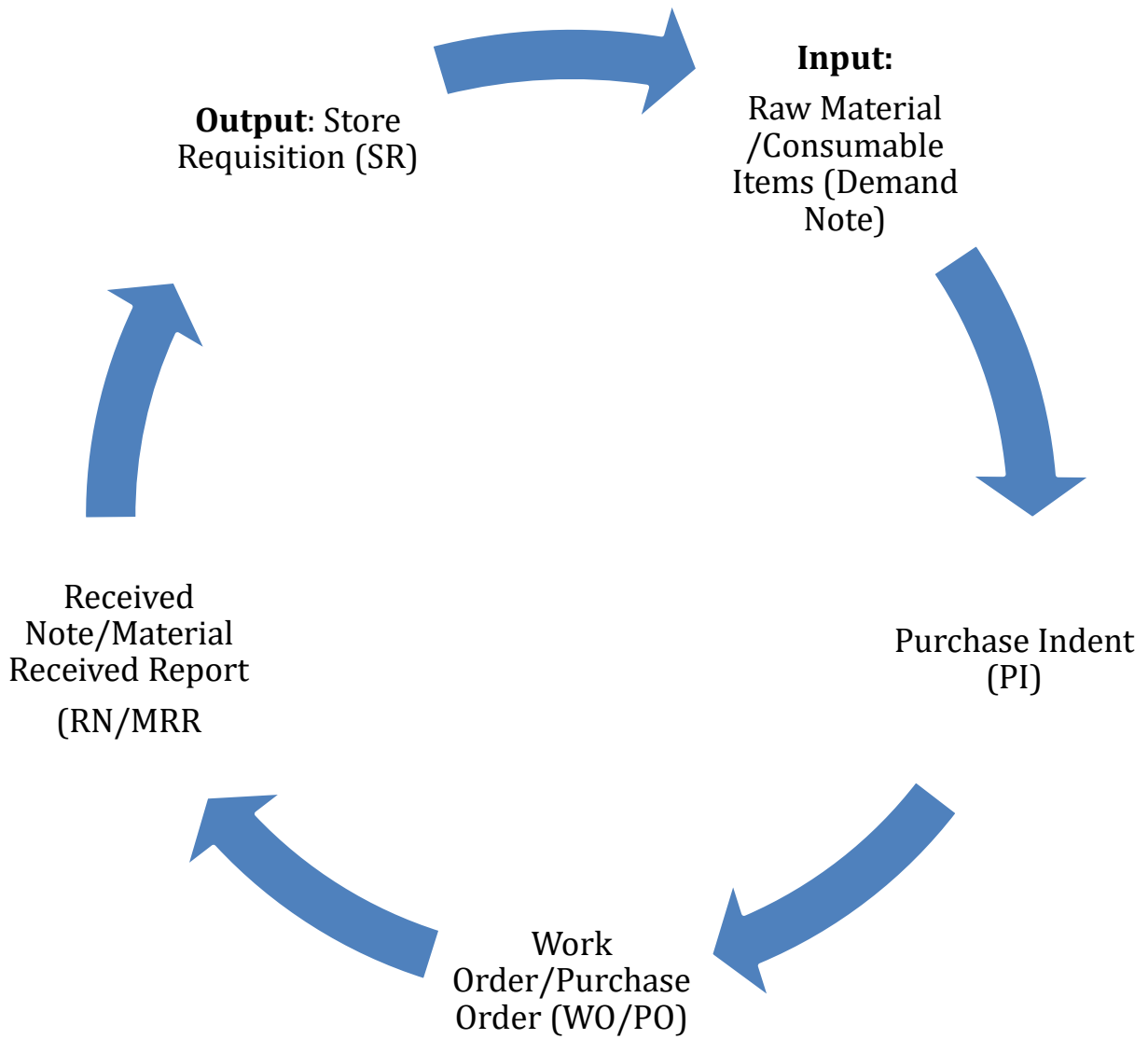
- Explaining the Inventory Management System and AJSML
- To identify the efficiency of recording system
- To give a brief overview of AJSML
- To analyze the inventory management and forecast & recommend the future policy
- To know about the procedures Inventory Management System
- Determining the drawbacks of the existing system
- To understand the flow of documents of each inventory in AJSML
- To provide some recommendations on the basis of my findings
-

3.3 Key Function

The key functions of the AJSML inventory management system are:

- To ensure material is available i.e. maintain appropriate level of inventory in the warehouse;
- Receipts, custody, and issue of materials;
- To recording the recording of all the stock movements;
- To minimize investment in inventory;
- Co-ordinate with management, maintenance, production, marketing and finance departments and other departments in the company for meeting their requirements for materials and spares;
- Assist in devising Management Report.

Figures: Inventory Management Systems of AJSML



3.4 Types of Inventory in AJSML

- Raw Jute
- Consumable Items
- Jute Batching Oil (JBO)
- Chemical Items
- Finished goods
- Work in Process
- Packing Materials

Raw Material: The raw-materials inventory contains items that are purchased by the firm from others and are converted into finished goods through the manufacturing (production) process. They are important input of the final product.

Work-in-Process: The Work in Process inventory consists of items currently being used in the production process. They are normally partially or semi-finished goods that are at various stages of production of multi-stage production process.

Finished Goods: Finished goods represent final or completed products, which are available for sale. The inventory of such goods consists of items that have been produced but are yet to be sold.

3.5 Sources of Raw Material & Packing Materials:

- Sources of Raw Material are classified into two Groups:
- Local Purchase
- Import

Local Purchase: when any specific material need for production then purchase department purchase the material from locally. For local purchase, department seek for appropriate seller. In local purchase few condition are considered such as

- Quality of the Material
- Rate of the Material

- Lead time
- Previous record of the supplier

3.6 The process of Local Purchase:

3.6.1 Processing Purchase Order

The procedure begins with need recognition. The respective department identifies its need, gets approval of the departmental head and with the approval an authorized person sends purchase requisition to purchase department to initiate purchase. In case of property, plant and equipment acquisition, before sending purchase requisition, a budget has to be prepared by the user department. If the departmental head or higher authorities, whichever is required, approve the proposed budget a purchase requisition is sent to supply chain department. And in case of raw or packing materials, the planning department determines the quantity and timing of raw materials. This department informs the purchase department when to buy materials.

When the supply chain department got the requisition than it make purchase order (PO). After receiving the purchase order, supplier has been selected. The supplier may be local or international. If the terms and conditions are in favor of both AJSML and the selected supplier, an order for the purchase is than issued by the supply chain department.

3.6.2 Receiving Material, Goods and Services

Generally the goods and services are received by the user department who issue the purchase requisition or in some cases by the authorized department. Materials are received by Store Department in the factory than QC approved by user department. After receiving materials, goods and services is QC ok than an MRR prepare in store department.

Again at AJSML there are some authorized departments for inspection. For example, computer or IT related products are inspected by IT department, furniture are by HR

department. If the received goods, material and services are not according to purchase requisition AJSML may

- Refuse the order
- Reorder the item
- Received on condition

Before taking any action, there is a discussion between AJSML and the supplier. After re-communication it has been decided whether the payment to the supplier will be made or not.

3.6.3 Factory sends MRR (Material Receiving Report)

After receiving material factory send MRR to & supply chain department and accounts department for reconciliation. In this MRR amount of quantity, receiving date, amount to use quality testing are mention. Respective department entry this MRR in excel sheet for reconciliation.

3.6.4 Supplier bill submit

In this mean time of sending MRR supplier submit their bill in to supply chain department. They approve the figure and send this bill to accounts department. Then accounts department check the approve amount, rate from purchase order, amount from MRR. If any discrepancy identify at this stage then it's reported to supply chain department.

Voucher Entry:

After checking purchase order and MRR, respective person entry this information in to journal vouchers. Where supplier name, description of product, approve amount are mentioned. Every journal voucher stapling with photocopy of bill and original bill. Then these journal vouchers approve with proper authority and main bill send for payment.

3.7 Necessary documents for Payment of bill: There have some necessary documents that is mandatory for payments and its supply correctly by supplier

- Original bill
- Photocopy of bill (copy not negotiable)
- Vat Challan
- Delivery challan

3.8 Material Receiving Report

The following Value taken from MRR to Prepared MRR valuation report:

- Material Quantity
- Ordered material
- Received material
- Received date & signature
- Amount for quality test

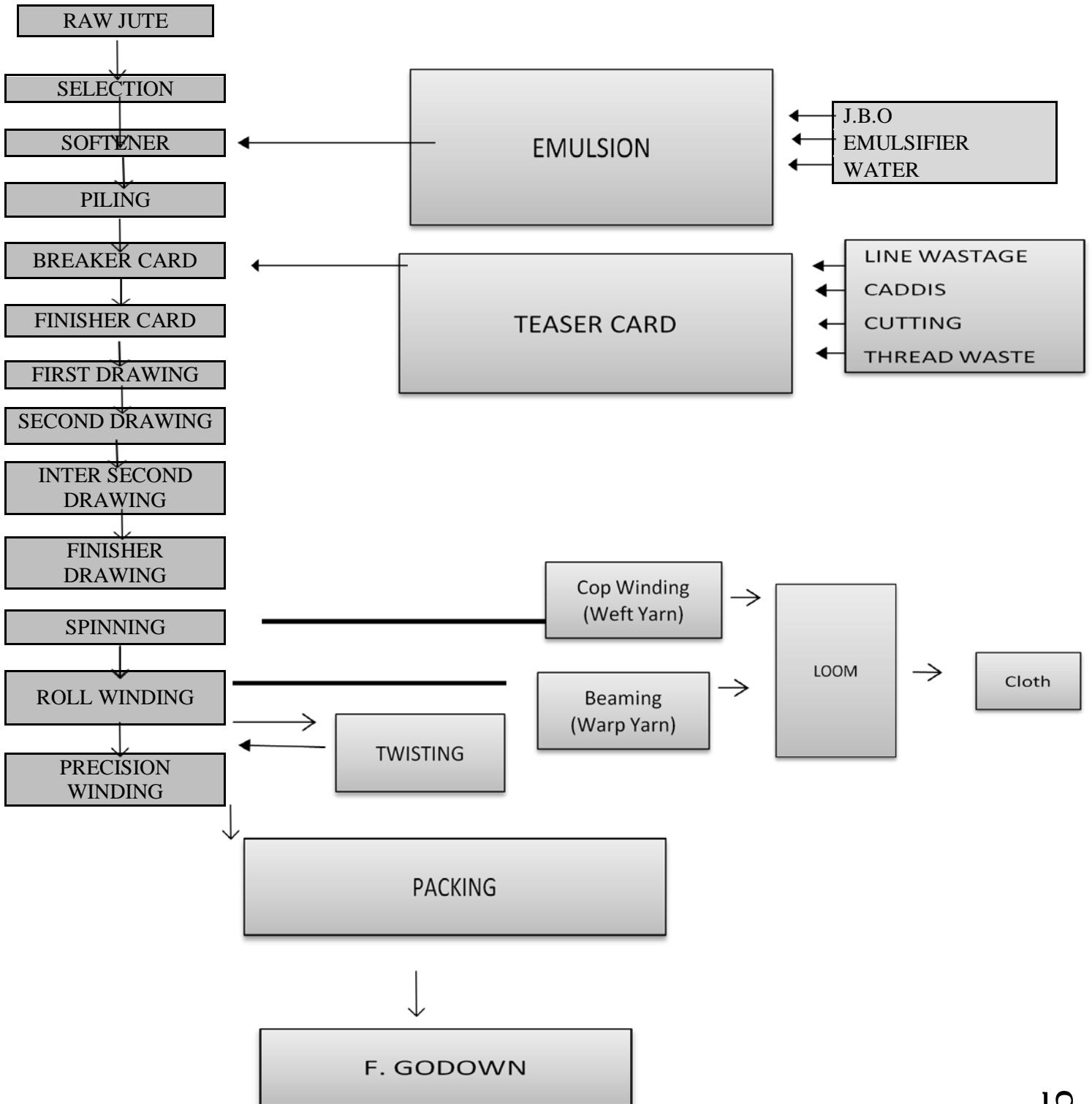
SupplierList:Some Listed Raw/Packing Material Supplier's name mentions as follows (Vat Payer):

- ❖ M/S Abdur Rashid
- ❖ A B M KamruzzamanTutul
- ❖ Padma Oil Company
- ❖ Karnaphuli Industries Ltd.
- ❖ Moon Packaging & Accessories Co.
- ❖ Paper Cone Industries
- ❖ M/S S. A. Enterprise
- ❖ M. Ali & Co.
- ❖ M Hossain& Sons
- ❖ M/S Sohag Electric
- ❖ Kishoregonj Paper & Stationery
- ❖ A. M. Trading Company
- ❖ HNS Automobiles
- ❖ Ali Enterprise

Anwar Jute Spinning Mills Ltd

Sikkirgaon, Gazaria, Munshiganj

PROCESS FLOW CHART FOR JUTE YARN



3.10 Raw Jute

There is lots of jute produced in Bangladesh. Actually, Anwar Jute Spinning Mills Limited has been receiving raw jute from two regions. Varieties type of raw jute procured from different region which are given below:

A. Hard Jute :-

- Faridpur
- Gopalganj
- Shariatpur
- Madaripur

B. Jat Jute :-

- Dhaka
 - Munshigonj
 - Narayangonj
 - Naesingdi
 - Manikgonj
 - Gazipur
- Comilla
 - Brahmanbaria
 - Chandpur
- Noakhali
- Sylhet
- Chittagong
- Kurigram
- Mymensingh
 - Netrokona
 - Tangail

C. District (D) Jute :-

- Pabna

D. S.D Jute :-

- Jessore
- Barisal
- Khulna
- Kushtia
- Rajshahi
 - Nawgaon

- Natore

E. Northern Jute :-

- Dinajpur
- Rangpur
 - Lalmonirhat
 - Nilphamari
- Bogra
 - Joypurhat
 - Gabtali

3.11 Raw Jute Classification

Raw jute in the form of bundles is processed in jute mills to produce jute yarn. Raw jute measures in the way of eye process method. Such as Colour, Strength, Length, Roots, Fineness, Lust etc. Raw jute is classified in the following:

Bangla Tossa Clean (BTC):

Uniform colour, golden/red. Tossa of finest texture, Very strong and very good luster. Completely free from any defects. Clean cut and well hackled.

Bangla Tossa (BTD) = X-1:

Uniform Colour, Light golden to reddish. Tossa of fine texture, strong and good luster. Free from any blemish completely. Clean cut and well hackled.

Bangla Tossa (BTD) = X-2:

Light to medium grey/cop perish grey/reddish excluding dark grey. Clean sound fibre of good texture and average luster. Free from any blemish. Clean cut and well hackled.

Bangla Tossa (BTD) = X-3:

Average strength, occasional bark and soft speck out free from runner, mixed colour. Croppy and gummy tops permissible slightly. Rough cut and hackled.

Bangla Tossa-E (BTE):

Any colour, any strength but free from perished fibre. Free from unfretted jute and stick but bark and hard center permissible. Rough cut and hackled.

Bangla Tossa SMR:

Any Colour, any strength but runner barks and specks allowed croppy and gummy tops with hard centered jute permissible. Maximum proportion of cutting by weight 30% would mostly correspond to Bangla Tossa-E.

Hard Jute :

Hard Jute categories are four grades. These are:

- i. Bangla Tossa Clean (BTC)
- ii. Bangla Tossa (BTD) = X-1
- iii. Bangla Tossa (BTD) = X-2
- iv. Bangla Tossa (BTD) = X-3
- v. Bangla Tossa -E
- vi. Bangla Tossa-SMR

❖ **Jat Jute :**

Jat Jute categories are four grades. These are:

- i. Bangla Tossa Clean (BTC)
- ii. Bangla Tossa (BTD) = X-1
- iii. Bangla Tossa (BTD) = X-2
- iv. Bangla Tossa (BTD) = X-3
- v. Bangla Tossa -E
- vi. Bangla Tossa-SMR

Raw Jute Go-down:-

Jute go-down is seven which two kacha& five paka. Anwar Jute Spinning Mill go-down capacity two lac ten thousand Mon.

Chapter 4 Research Methods

4.1. Research

Research is a process in which the researcher wishes to find out the end result for a given problem and thus the solution helps in future course of action. The research has been defined as “A careful investigation or enquiry especially through search for new facts in branch of knowledge.”

4.1.1 Research Design

The research design used in this project is Analytical in nature the procedure using, which research has to use facts or information already available, and analyze these to make a critical evaluation of the performance.

4.2 Data sourcing

The data and information for this report have been collected from both the primary and secondary sources.

- Primary source:
 1. Data are collected through personal interviews and discussion with Finance-Executive.
 2. Data are collected through personal interviews and discussion with Material Planning –Assistant Manager.
- Secondary Source:
 1. The data are collected from the annual reports maintained by the company for the past six years viz., 2009-2014
 2. Dare are collected from the company’s website.
 3. Books and journals pertaining to the topic.

4.3 Data collection:

- Jute Department
- Production Department
- Mechanical Department
- Finance & Accounts Department
- Administration & Human Resources Department
- Supply Chain Department

4.4 Tools used in the Analysis:

- Economic Order Quantity
- Safety Stock
- ABC Analysis
- FSN Analysis
- Linear Regression method
- Inventory turnover ratios

Chapter 5 Analysis & Interpretation

The research will adopt a systematic approach in ensuring that the data collected is accurate. The process will involve; data collection, data immersion, data reduction, categorization, processing and finally data evaluation (Creswell 203).

5.1 Economic Order Quantity (EOQ)

Economic Order Quantity is the inventory management technique for determining optimum order quantity which is the one that minimizes the total of its order and carrying costs.

Table 5.1.1 Economic Order Quantity

SL. No.	Components	Demand Per Year	Re-Order Cost/Order	Carrying Cost/Unit /Year	EOQ	No. of units Ordered	No. of order per year
1	Axle Spindle 4-3/4" AD	1890	45	2	291.63	157.50	6.48
2	Ball Bearing E-15	1112	210	2	483.23	92.67	2.30
3	Ball Bearing 810	760	310	2	166.55	63.33	1.57
4	Ball Bearing LT-15	73	3800	2	224.5	6.08	0.04
5	Ball Bearing RLS-07	84	600	2	224.5	7	0.37
6	Ball Bearing RLS-09K	60	920	2	234.95	5	0.26
7	Ball Bearing 6203	344	170	2	241.83	28.67	1.42
8	Ball Bearing 6205	355	260	2	303.81	29.58	1.17
9	Belooning Spring 3/4X3-3/4	12000	12	2	379.47	1000	31.62
10	C I Boss with Rubberizing 4-3/4" AD	2300	110	2	502.99	191.67	4.57
11	Card Pin 0.060X11/16"	310000	9	2	1670.33	25833.33	185.59
12	Card Pin 0.092X1"	601000	10	2	2451.53	50,083.33	245.15
13	Card Pin 0.058X11/16"	240000	11	2	1624.81	20,000	147.71
14	Ceramic Runner 3/4X3/4"	1470	12	2	132.81	122.50	11.07
15	Faller Bar 18/19 Pin 1 st Drg. Sq. Hd. 4 Gill	726	640	2	681.64	60.5	1.07
16	Faller Bar 26/27 Pin 4-Gill (Sq. Head) 2 nd Drg	392	680	2	516.29	32.67	0.76
17	Faller Bar For Mono Head Sq. Head 55/56 Pin	12	14910	2	422.99	1	0.03
18	Felt Blob	19000	5	2	308.22	1583.33	61.64
19	Gill Pin 0.072X1-3/8"	662000	10	2	2572.94	55,166.67	257.29
20	Gill Pin 0.072X1-3/8"	446000	11	2	2214.95	37,166.67	201.36
21	Lap Guide Clip	335	13	2	65.99	27.92	5.08
22	Lenix Belt 7'-6"X5.5"	32	900	2	169.7	2.67	0.19

23	Needle Bearing 4900	640	265	2	411.825	53.33	1.55
24	Nylon Delivery Construct-2 Hole 4-3/4" SD	2750	6	2	128.45	229.17	21.41
25	Oilet Bush 1/2X5/8X5/8"	2500	8	2	141.42	208.33	17.68
26	Roller Bearing (for Secoloyel Ring Twist)	299	1090	2	570.88	24.92	0.52
27	Spindle for Sac. R. Twist O/D 5/8"	410	1620	2	814.98	34.17	0.50
28	Steel Tension Disc	2150	5	2	103.68	179.17	20.74
29	V-Belt A-33	537	150	2	283.81	44.75	1.89
30	V Belt A-82	355	350	2	352.49	29.58	1.01

In the above table the EOQ & the no. of orders purchased per year for various components are calculated. The calculated EOQ is compared with the no. of units of each components purchased in the organization. It is found that, there is a variation in the EOQ & no. of unit purchased. It is understood that the company is not following EOQ for purchasing the materials & therefore the inventory management is not satisfactory.

5.2 Safety Stock

Safety stocks are the minimum additional inventory which serves as a safety margin to meet an unanticipated increase in usage resulting from an unusually high demand and an uncontrollable late receipt of incoming inventory.

SL. No.	Components	Max. Lead Time	Normal Lead Time	Demand	Safety Stock
1	Axle Spindle 4-3/4" AD	0.27	0.166	1890	196.56
2	Ball Bearing E-15	0.27	0.166	1112	115.648
3	Ball Bearing 810	0.27	0.166	760	79.04
4	Ball Bearing LT-15	0.27	0.166	73	7.592
5	Ball Bearing RLS-07	0.27	0.166	84	8.736
6	Ball Bearing RLS-09K	0.27	0.166	60	6.24
7	Ball Bearing 6203	0.27	0.166	344	35.776
8	Ball Bearing 6205	0.27	0.166	355	36.92
9	Belooning Spring 3/4X3-3/4	0.27	0.166	12000	1248
10	C I Boss with Rubberizing 4-3/4" AD	0.27	0.166	2300	239.2
11	Card Pin 0.060X11/16"	0.27	0.166	310000	32240
12	Card Pin 0.092X1"	0.27	0.166	601000	62504
13	Card Pin 0.058X11/16"	0.27	0.166	240000	24960
14	Ceramic Runner 3/4X3/4"	0.27	0.166	1470	152.88
15	Faller Bar 18/19 Pin 1 st Drg. Sq. Hd. 4 Gill	0.27	0.166	726	75.504
16	Faller Bar 26/27 Pin 4-Gill (Sq. Head) 2 nd Drg	0.27	0.166	392	40.768
17	Faller Bar For Mono Head Sq. Head 55/56	0.27	0.166	12	1.248

	Pin				
18	Felt Blob	0.27	0.166	19000	1976
19	Gill Pin 0.072X1-3/8"	0.27	0.166	662000	68848
20	Gill Pin 0.072X1-3/8"	0.27	0.166	446000	46384
21	Lap Guide Clip	0.27	0.166	335	34.84
22	Lenix Belt 7'-6"X5.5"	0.27	0.166	32	3.328
23	Needle Bearing 4900	0.27	0.166	640	66.56
24	Nylon Delivery Construct-2 Hole 4-3/4" SD	0.27	0.166	2750	286
25	Oilet Bush 1/2X5/8X5/8"	0.27	0.166	2500	260
26	Roller Bearing (for Secoloyel Ring Twist)	0.27	0.166	299	31.096
27	Spindle for Sac. R. Twist O/D 5/8"	0.27	0.166	410	42.64
28	Steel Tension Disc	0.27	0.166	2150	223.6
29	V-Belt A-33	0.27	0.166	537	55.848
30	V Belt A-82	0.27	0.166	355	36.92

In the above table, safety stocks for the various components calculated are shown. Actual demand is given for each component for a period 1 year and the lead-time is calculated at a maximum of 100 days & normal of 60 days and these were converted into per annum. So, from calculation of safety stock. We can able to determine how much the company can hold the inventory in reserve stock per annum.

5.2 ABC Analysis

The ABC system is widely used classification technique to identify various items of inventory for purposes of inventory control. On the basis of unit cost involved, the various items are classified into 3 categories:

- 1) A, Consisting of items with the large investment,
- 2) C, with relatively small investments but fairly large number of items and
- 3) B, which stands mid-way between category A & C.

Category A needs the most rigorous control, C requires minimum attention and B deserves less attention than A but more than C.

A Class (High Value)
Ball Bearing RMS-14
Bloster for Ring Twist Sceolowell
Faller Bar 11/12 Pin 6 Gill
JukyPully 2X4"
Lifter Bracket 4-3/4 AD
Pressing Roller Reem 4-1/2X8-1/2"

Top Rail L/R.H (MS) 1st Section Chain Link Type
V Belt 3v-1180 (Japan)
Gun Metal Bar 1-1/2"
Super Enamel Wire # 18
Super Enamel Wire # 19
Super Enamel Wire # 20
Super Enamel Wire # 21
Super Enamel Wire # 22
Super Enamel Wire # 23
Super Enamel Wire # 35
Sliver Can Plate-Bottom 28X40"
Film (Wrapping Film)
Roller Bearing (For Secoloyel Ring Twist)
Spindle for Sac. R. Twist O/D 3/4" Pitch 6-1/2
Spindle fro Sac. R. Twist O/D 5/8" Pitch 6-1/2
Spark Plug (P:346-5123)-CAT

B Class (Moderate Value)

Bearing Socket-1306K
Brass Conductor 2-5/8X1-5/8
Felt Bob Clip
C I Stop Motion Weight Lever L/H 4-3/4 SD
C I Stop Motion Weight Lever R/H 4-3/4 SD
Gun Metal Bush 1-3/4X2-1/4X2-3/4 (Half Round)
Helical Pinion 21TX8DP
M S Chain Sprocket 18TX5/8"X1"
Right Angles 12"
Tension Pulley 4-1/4" AD
Gauge Meter
Hammer 2-1/2 Lbs
Hand Top 1/2" BSW
Yarn Guide Curls

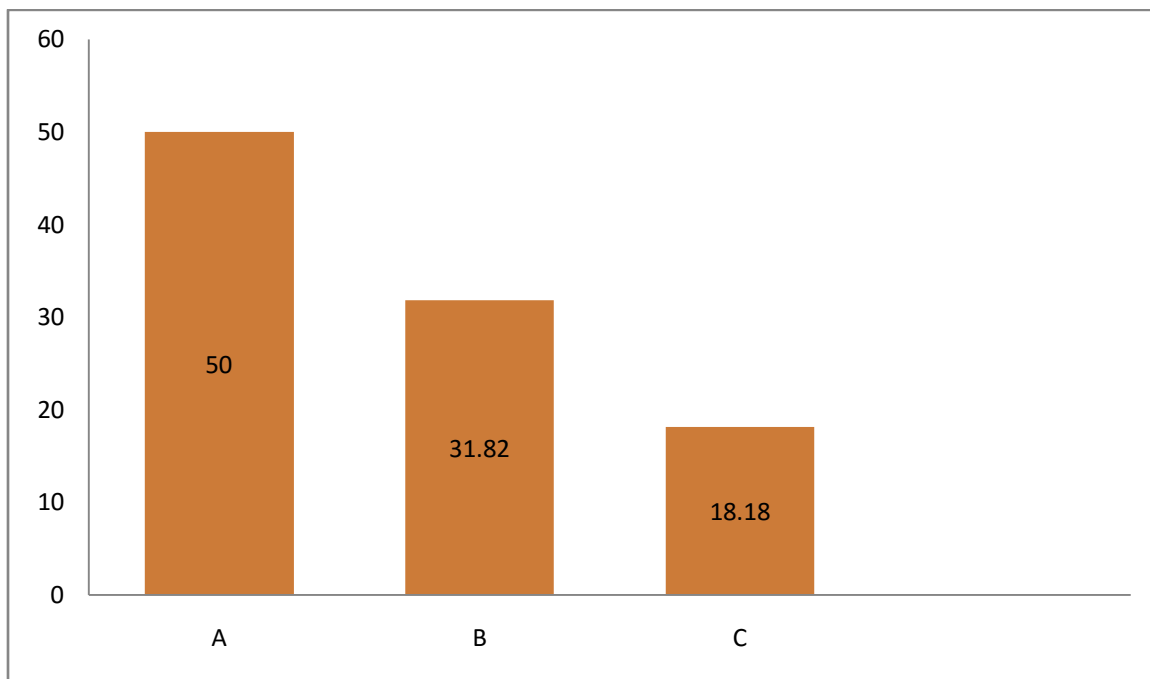
C Class (Low Value)

Ampere Tube No: 01
Card Pin 0.092X1"
Card Pin 0.071X1-3/8"
Ring Travaller Medium
Gill Pin 0.072X1-5/8"
G I Screw 1/4X1/2
PVC Socket 3/4"
Nylon Clip

Categories	Total No. Items in Classes	Percentage
A	22	50
B	14	31.82
C	8	18.18
Total	44	100

The above table shows the classification of various components as A, B & C classes using ABC analysis techniques based on unit value. From the classification A classes are those whose unit value is more than Tk. 100 and constitutes 50% of total components. B Classes are those whose unit value is between Tk. 25-100 constitutes 31.82% of total components and C Classes are those whose unit value is less than Tk. 25 constitutes 18.18% of total components. It is good that the company maintains its inventories based on its value using controlling techniques.

Chart 5.3 ABC Analysis



5.3 FSN Analysis

All the items in the inventory are not required at the same frequency. Some are required regularly, some occasionally and some very rarely.

FSN classifies items into Fast moving, Slow moving and Non-moving.

Fast Moving Items

Axle Spindle 4-3/4" AD
Ball Bearing E-15
Ball Bearing 810
Ball Bearing 6203
Ball Bearing 6205
Needle Bearing 4900
Paper Spool 10X2-3/4X1-3/4X1-1/8
Ring Travellers Medium
Belooning Spring 3/4X3-3/4
Faller Bar 18/19 Pin 4 Gill Sq. Head 1stDrg
Faller Bar 26/27 Pin 4 Gill Sq. Head 2ndDrg
Ceramic Runner 3/4X3/4
Lenix Belt 7'-6"X5.5"
Nylon Delivery Contract 2 Hole 4-3/4 SD
Power Grip Belt 300L
Oilet Bush 1/2"X5/8X5/8"
V Belt A-33
Shuttle Guide Key
V Belt A-82
V Belt C-66
Steel Tension Disc

Slow Moving Items

1st Stripper Staves (SF) 5X47X010.X1-3/16" for T/C
1st Worker Staves (SF) 5X47X103X1-1/2" for T/C
Aluminum Arm L/R.H for Roll Former
Auto Conducts 3rdDrg
Ball Bearing LT-21 with Socket
Ball Bearing 6209
Ball Bearing 6210
Bevel Pinion (MS) 20TX8DP with Boss B-7/8"
C I Bevel Pinion 21TX6DPX1-5/8"
Drawing Roller 5-1/2" SD L/H Thread 80 Spindle M/C
Faller Block R/H,L/H Top & Bottom for 2nd Mackie
Five Star Pinion (2ndDrg.)
Releve Valve/Pin/Bush
V Belt CC-254

Non-Moving Items

Arm Stude
Ball Bearing 1209 K (Double)
Ball Bearing 6001
Ball Bearing 606

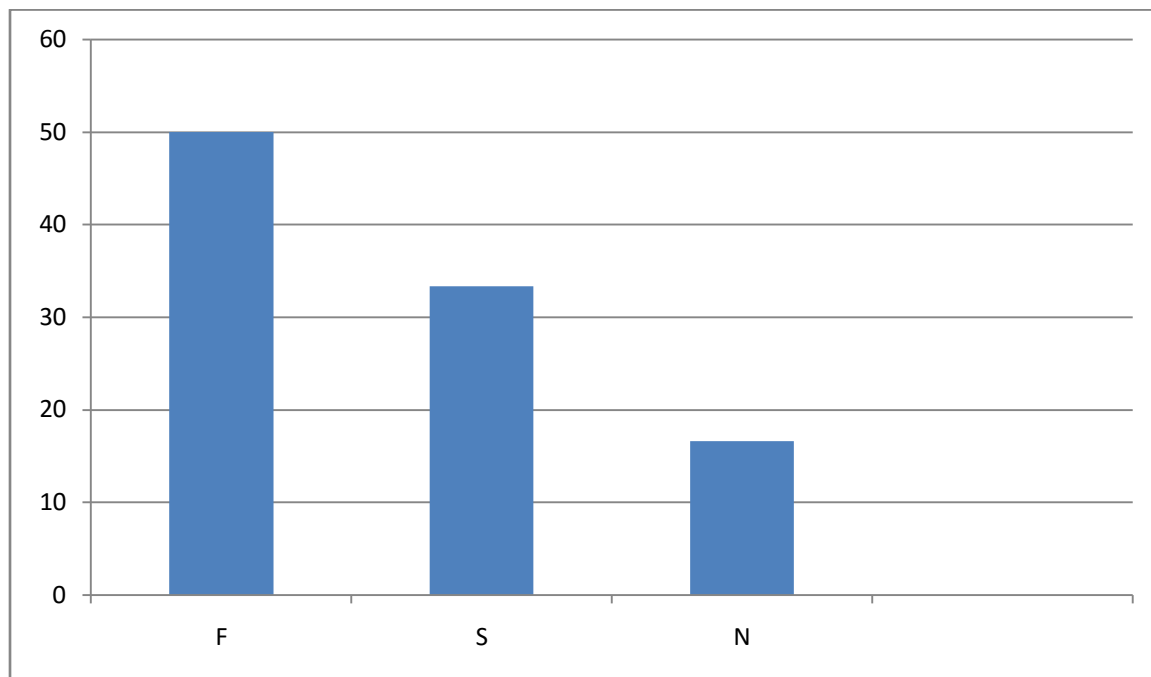
Ball Bearing 62003
Bobbin Rail Plate 4-3/4 AD (Half Round)
C I Fork 4-3/4 AD (Tension Pully)

5.4.1 FSN Analysis

Categories	Total No. Items in Classes	Percentage
F	21	50
S	14	33.33
N	7	16.67
Total	42	100

In the above table shows the classification of various components as FSN items using FSN analysis techniques based on movements. From the classification F items are those which moves fastly and constitutes 50% of total components. S items are those which move slowly constitutes 33.33% of total components and N items are those which doesn't move (Non-moving items) constitutes 16.67% of total components. According to data given, there is no Non-moving item. It is not good as the company maintains low percentage in moving items.

Chart 5.4.1 FSN Analysis



5.4 Inventories Turnover Ratio

This ratio is calculated to consider the adequacy of the quantum of capital and its justification for investing in inventory. A firm must have reasonable stock in comparison to sales. It is the ratio of net sales and the average inventory. This ratio helps the financial manager to evaluate inventory policy. This ratio reveals the number of times finished stock is turned over during a given accounting period.

The formula for the ratio is: Net Sales/Avg. Inventory

Table 5.5.1 Inventories Turnover Ratio & Velocity

Year	Net Sales (Tk.)	Avg. Inventory (Tk.)	Ratio	Velocity (in Days)
2010	12,30,05,134	8,42,09,371	1.46:1	250
2011	16,06,43,669	8,92,28,407	1.80:1	203
2012	11,73,30,581	14,52,26,925	0.80: 1	456
2013	55,53,74,571	18,98,23,381	2.92: 1	125
2014	79,11,78,220	17,40,71,613	4.5: 1	81

In the above table shows in inventory turnover ratio for the past years. The ratio is showing increasing trend from 1.46 4.5 in the year 2010 to 2014. Except in the year 2012 which shows only 0.80 times.

Whereas in the velocity of inventories shows less in 2014 as compared to 2010 which is 81 day in 2014 and 250 days in 2010 except in the year 2012 which is 456 days. This shows that the inventories are easily converted into sales within the shortest period i.e. the company was able to sell Tk. 4.5 by investing Taka one in the stock in 2014.

Chapter 6 Findings, Conclusions, Suggestions & Recommendations

6.1 Findings of the Study

- ❖ It is found that, there is a variation in the EOQ & no. of unit purchased. It is understood that the company is not following EOQ for purchasing the materials. So, the inventory management system is not satisfactory.
- ❖ From calculation of safety stock, we can able to determine how much the company can hold the inventory in reserve stock per annum.
- ❖ From the classification A classes are those whose unit value is more than Tk. 100 and constitutes 50% of total components. B Classes are those whose unit value is between Tk. 25-100 constitutes 31.82% of total components and C Classes are those whose unit value is less than Tk. 25 constitutes 18.18% of total components. It is good that the company maintains its inventories based on its value using controlling techniques
- ❖ From the classification F items are those which moves fastly and constitutes 50% of total components. S items are those which move slowly constitutes 33.33% of total components and N items are that which doesn't move (Non-moving items) constitutes 16.67 of total components. According to data given, there is no Non-moving item. It is not good as the company maintains low percentage in moving items. It is not good as the company maintains low percentage in fast moving items in compared to Slowing moving inventories based on movements using controlling techniques.
- ❖ In the above table shows in inventory turnover ratio for the past years. The ratio is showing increasing trend from 1.46 4.5 in the year 2010 to 2014. Except in the year 2012 which shows only 0.80 times. Whereas in the velocity of inventories shows less in 2014 as compared to 2010 which is 81 day in 2014 and 250 days in 2010 except in the year 2012 which is 456 days. This shows that the inventories are easily converted into sales within the shortest period i.e. the company was able to sell Tk. 4.5 by investing Taka one in the stock in 2014.

6.2 Suggestions and Recommendations

- According to EOQ, as the company does not follow not follow EOQ for its purchasing, the company can be adjusted to order materials. This will reduce the cost & help to enhance the profit of the company.
- The company is required to maintain safety stock for its components in order to avoid stock-out conditions & help in continuous production flow.
- Under ABC analysis, the management must have more control on A than B&C, because A class constitutes more (50%) of higher values. There should be tight control exercised on stock levels, to avoid deterioration. This is done through maintaining low safety stock, continuous check on schedules & ordered frequently in inventories, in order to avoid over investment of working capital.
- The company must not go to the Non-moving items as far as possible, because there will be unnecessary blocking of working capital. This would hinder the other activities of the organization.
- The inventory turnover ratio indicates whether investment in inventory is within proper limit or not. It also measures how quickly inventory is sold. It requires maintaining a high turnover ratio than lower ratio. A high ratio implies that goods inventory management systems and it also reflects efficient business activities.

6.3 Conclusions

A better inventory management system will surely be helpful in solving the problems the company is facing with respect to inventory and will pave way for reducing the huge investment or blocking of money in inventory. From the analysis we can conclude that the company can follow the Economic Order Quantity (EOQ) for optimum purchase and it can maintain safety stock for its components in order to avoid stock-out conditions & help in continuous production flow. This would reduce the cost and enhance the profit. Also there should be tight control exercised on stock levels based on ABC analysis of maintain high

percentage in fast moving items in inventories as per on FSN analysis for efficient running of the inventory. Since the inventory Turnover ratio shows the increasing trend, there will be more demand for the products in the future periods. If they could properly implement and follow the norms and techniques of inventory management systems, they can enhance the profit with minimum cost.

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