

Study on warehouse management in pump industries

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Objectives

- To understand the process of warehouse management involved in an organization.
- To know how the materials get in warded inside the organization and how the materials stored in an area.
- To identify how they issuing the materials and on what basis how they storing the materials in bin.
- To gather an information about how the assembly line issuing stock details to store and how they reducing stock from their account.
- To understand on what basis they are delivering materials to production team when they ask for requirement.

INTRODUCTION

Aqua pumps are one of the largest pump manufacturing industry in India. According to the 2018 Industrial Development Report by the United Nations, there is a significant rise in the individual income across the globe which is leading to a substantial demand influx of goods in various sectors. Consequently, the future will observe a rapid industrial development with a myriad of emerging manufacturing units belonging to a diverse range of industries. Therefore there will be resource reinforcement and renovation in existing one of production to get better quality of goods. Pumps are an indispensable part of manufacturing units which enable all the fluid flow operations. This industrial growth will be boon to pumps market which had a value of around \$80 billion in 2018 according to industry arc market analyst.

REVIEW OF LITERATURE

Shijun Yuan 2019, Discussion on Warehousing Management Problems and Countermeasures of Shazhou Turbine Pump Factory of Hunan Province Efficient and reasonable warehousing can help manufacturers speed up the flow of materials, reduce costs, and achieve effective production and management of resources to ensure smooth production. This paper analyzes the current situation of the warehousing business of Shazhou Turbine Pump Factory of Hunan Province, and further explores the specific reasons for the idle warehousing facilities. On this basis, this paper proposes improvement measures from the aspects of resources, personalized services, and personnel training.

Exploring the impact of RFID technology and the EPC network on mobile B2B ecommerce Samuel Fosso Wamba, Louis A. Lefebvre, ygal bendavid, E lisabeth Lefebvre The main objective of this article is to provide some insights into radio frequency identification (RFID) technology and the electronic product code (EPC) network and investigates their impacts on mobile B2B e Commerce. Through a business process approach, our results indicate that (i) this approach seems appropriate to capture the potential of the RFID–EPC network; (ii) the RFID–EPC network can improve the “shipping,” “receiving,” and “put-away” processes; (iii) these technologies can cancel, automate, or automatically trigger some business processes; (iv) they foster a higher level of information sharing/synchronization between supply chain members; and (v) they require to be integrated in a wider strategy.

Johannes Mapokgole, The Art of Managing Production Disruptions in Pump Industry through Visual Management .The current business environment in pump manufacturing companies is characterized by markets

facing fierce competition. Customer expectations as a result are becoming increasingly higher in terms of quality, cost and delivery dates. These expectations are even worse due to rapid development of new information and communication technologies which provide direct connections between companies and their clients. To achieve this, companies rely on a number of functions including production scheduling. Production scheduling strategies and disruptions management in pump industry are investigated, followed by a new-fangled concept suitable for addressing problems considered herein. Slot allocation process which starts by assigning slot number and/or confirmed order and ends when it is accepted into the queue by operations planning is presented.

Johnson Andrew, Warehouse design and management Warehouse design and operations have undergone major changes over the past decades. In particular, with the onset of e-commerce, the complexity of **warehouse** operations has increased multi-fold with the storage of large SKU assortment in small quantities, volatile demand patterns and primarily single-line customer orders. They have grown in size due to consolidation, new and fast identification and communication technologies have found their way into the **warehouse** and process automation technologies have progressed improving speed and operational efficiencies.

Ammouri mayasa, Concurrent manual-order-picking warehouse design: a simulation-based design of experiments approach the design of manual-order-picking warehouses is a combination of interdependent decisions with enormous possible varieties in design components. The strong interrelationship between these components, in addition to the dynamic and interconnected stochastic nature of the problem; necessitate the utilization of a simultaneous simulation-based approach. This study proposes a concurrent simulation-based design of experiments approach for the design of manual-order-picking warehouses. The proposed approach can investigate all possible warehousing design combinations with their stochastic nature and interactions; hence, widening the search for performance improvement. Furthermore, the presented approach captures the probabilistic nature of all the key warehouse functions of receiving, unloading, put away, storage, preparation and picking and shipping; and evaluates the performance of the studied designs using the cycle time for a stock keeping unit in the warehouse.

Power-load management reduces energy-dependent costs of multi-aisle mini-load automated storage and retrieval systems, For economic and ecological reasons, the interest in the energy demand of material-handling systems is rising. As a result, the operators of these systems increasingly pay attention to the energy demand and the costs resulting from it. The energy demand of automated warehouses, with multi-aisle automated storage and retrieval systems, is volatile with uncontrolled power-peaks. These power-peaks result in high energy and hardware costs. In this paper, the effect of a power-load management on the throughput of the material-handling systems is investigated. We assume that the peaks of energy consumption can be significantly reduced by delaying tasks, without having an impact on the throughput. The goal is to find out the interdependence between the electrical power-limits of the power-load management (mean power demand in a period and maximum power demand) and the throughput of the warehouse.

RESEARCH DESIGN:

Descriptive research is defined as a research method that describes the characteristics of the population or phenomenon that is being studied. In other words, descriptive research primarily focuses on describing the nature of a demographic segment, without focusing on “why” a certain phenomenon occurs. In general there are 3 main reason to conduct descriptive research they are

- 1) To identify the areas for further research.
- 2) To reduce the supplier waiting time in gate while entering inside the company.
- 3) To identify their storage capacity of storing the new materials in store.

NEED OF STUDY:

- Most of the process is done manually and there is a wide scope for semi-automation and full automation of process
- To understand the flow chart of ASRS Module in supply chain management.

- To identify how many suppliers are arriving daily for inward and outward material.
- To understand the material status in a system by means of ASRS module.
- To check the quantity of materials stock in an easier way.
- To avoid the shortage of material in a ledger by means of automated system.
- To avoid vehicle traffic at gate entry.
- Lack of mistake proofing system (ASRS) in the purchase department in order to avoid manual work in an organization.

OBJECTIVE OF STUDY

PRIMARY OBJECTIVE

To implement ASRS to avoid the lacking of material and identify which supplier is coming for an company ASRS is implemented.

SECONDARY OBJECTIVE

- To understand the Supply Chain Management Process followed in an organization.
- To understand the flow process to draw ASRS module involved in Supply Chain Management.
- To understand the technical terms in a Supply Chain Module.
- To gather information about all the departments in a purchasing category as well as in Aqua sub unit 1.
- To study the strategic and operational practices of various departments in the functional areas.
- To study a specific challenge in the department and provide suitable solutions for implementation.

SOURCES OF DATA

Data has been collected from supervisors as well as workers from various department in an organization with several information's for completing this project.

INSTRUMENTS FOR DATA COLLECTION

Data was collected by continuous observation of the manufacturing process with the help of the supervisor who guided me for the entire process. The data was also collected by interacting with the workers to identify the areas in which they faced difficulties.

PRIMARY DATA:

Primary data was collected from company by means of face to face interview

SECONDARY DATA:

Secondary data was collected from journals, articles as well as research papers.

TOOLS USED:

ASRS

Automated storage and retrieval system is most commonly used in manufacturing as well as in distribution facilities. These typically replace large areas of shelving to save floor space which improve safety and increase productivity .with varying technologies and applications it can be a bit of overwhelming researching ASRS system for first time .ASRS allows the users quickly and easily to retrieve items when needed .ASRS

technologies on market can handle different volumes, velocities of palletized as well as non-palletized inventory at variable speeds to accommodate varying throughput demand.

TIME DURATION:

Time given by the company to complete the project for summer internship is 60 days (1/7/2021 to 31/8/2021). Periodic visit to the company has been done to collect the data needed for the project and the project work has been carried out.

FINDINGS:

If new material comes inside in an organization the supplier will bring Delivery challan and ASN as well as tax invoice slip also there if amount is greater than 10000 so that store team will verify the sheet whether all components and quantity of material are correctly placed or not. After checking the details transport token will be generated for that component so that supplier will take that slip and went to security so that he will verify it and in pass will be generated for the component and finally the supplier will take all the sheets and went to store area where the verified tag will be generated and get signed with quality team like there is no rejection piece all the pieces get accepted .then they will take that slip and give to store department so that they will store the material in an proper bin space .store team will once again verify the pieces whether all are matching with sheet and they put tag for that bin .after that they will deliver the pieces to production team when they ask for requirement .assemble team will give the issue slip to store based on that requirements the store team will load the materials in bin so that stock get reduced from store and that will be added in production log area.so the store team will show the remaining pieces of quantity as stock in their dash board .before the sheet get in pass the store team will check in sheet whether the pieces are accepted or rejected quantity.it is accepted quantity and all the details are in an proper way they will get the duplicate copy for that material and verify all those thing and write as TR Received at back end of sheet. If the material goes for onsite checking the pieces are placed in an separate storage space where the QC team will come and check the piece till that hold piece not used for machining. If piece gets accepted then the QC team will put tag for those pieces and store team will place those pieces in a particular storage place. If piece get rejected they will call for supplier to check the problem if they able to solve those problem they sore team will allow them to do rework for those pieces the supplier will take those pieces to his working area and work for that problem .once all get solved they will bring those pieces to company and they will deliver it in an store. If there is any requirement of pieces need for assemble the production team will place all the items in ledger and they will send requisition slip to store so that store will arrange all those pieces and deliver it to the assembly line .in case any shortage of pieces in store they will call to purchase department to order for those pieces .once the store department deliver the products to assembly stock items get reduced from their ledger and it will be added in production team ledger .Also store team will check the stock for each month by means of taking the count of all the pieces available in storage location and verify those with taking stock list print out from the system. They are following first in first out process [FIFO] for delivering products to production department. Approximately 1000 to 1200 materials are stored in storage area. Two types of process available for inwarding materials inside the company, bought out and job work .For bought out work delivery challan is needed for specific material and for bough work tax voice is need based on the availability of price. Also inward and outward process of material takes place in an organization. For inward materials the supplier have to bring the ASN along with Tax invoice slip for allowing the materials inside the company whereas for outward purpose the supplier have to bring the report of materials to generate delivery challan in store so that they will be able to take material outside from an company if DC is not there security will not allow the vehicle to go out from company.

CONCLUSION

Therefore in store location they will be maintaining stocks properly also ensure safety first before storing the products over there .They will keep their environment very clean they will be cleaning their place weekly once and dust get removed over there. They will deliver the products to the production team at a proper time and they will be

verifying stock on regular basis before they deliver products to the assembly. Also they will be storing the regular bulk pieces of material in an appropriate storage bin so that they will retrieve those materials when they get an order to deliver .If they find out any rejection or hold piece they will maintain all those pieces in an separate bin .They are following First In First Out Process for delivering the products to assembly while they asking for material requirement .By means of ASRS System they can easily identify the status of material done by quality team.

