INDUSTRIAL PRACTICE REPORT
AT PT. TOYOTA MOTOR MANUFACTURING INDONESIA

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16 14 08731

INTERNATIONAL INDUSTRIAL ENGINEERING PROGRAM

FACULTY OF INDUSTRIAL TECHNOLOGY

UNIVERSITAS ATMA JAYA YOGYAKARTA

2019

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TO WHOM IT MAY CONCERN

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We certify that the following person:

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Has completed the Internship Program at PT. TOYOTA MOTOR MANUFACTURING INDONESIA since July 4th, 2019 until August 4th, 2019 at **PLANT ADMINISTRATION KARAWANG 1,2 DIVISION**

Please be informed accordingly.

Jakarta, July 25th, 2019

Sincerely yours,

PT TOYOTA MOTOR MANUFACTURING INDONESIA
JAKARTA INDONESIA

Dian Cahayani
Department Head

cruitment3 : 07/25/2019 : 13:10

CONFIRMATION PAGE

Job Training Report carried out at PT. Toyota Motor Manufacturing Indonesia starts on July 4, 2019 until August 4, 2019 compiled by:

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Karawang, 2 August 2019

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The author also apologizes if there are deficiencies in the Industrial Practice Report and hopefully this report can be useful for all of us.

Karawang, 2 August 2019

Author

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INTRODUCTION

1.1. Background of Field Study

Industrial Engineering study program, Faculty of Industrial Technology, Universitas Atma Jaya Yogyakarta obligates all students to conduct industrial practice that based on the curriculum in PSTI UAJY. PSTI UAJY views industrial practice as a medium for students to recognize the situation in industry and to grow, improve, and develop professional work ethics in order to become a prospective Bachelor of Industrial Engineering.

Industrial Practice can be concerned as a professional simulation event for Industrial Engineering student. The paradigm that must be instilled is students must work for the chosen company during Industrial Practice. In this case, working consists of planning, improving, implementing, and problem solving. Therefore, students must do several activities during Industrial Practice, those activities are:

1. Recognize the scope of the company
2. Follow the work processes in the company
3. Do and perform the tasks that are given from the mentor or field guidance
4. Observe the behaviour of the system
5. Compile and arrange the report in written form
6. Doing the Industrial Practice examination

1.2. Purposes of Industrial Practice

Several things that must be achieved on doing Industrial Practice are:

1. Train discipline of a student
2. Train the abilities to interact with subordinates, colleague, and superior of the company
3. Train the ability to adopt with the working environment

4. Directly observe the activities in the company on producing and running its business
5. Complete the theories that have been gained in lecturer with the practice in the company
6. Add student's knowledge about production system and business process

1.3. Location and Period of Industrial Practice

Industrial Practice was conducted from 4 July 2019 until 4 August 2019 in PT Toyota Moto Manufacturing Indonesia (TMMIN) which are located in Kawasan Industri KIIC Lot DD 1, Jl Permata Raya, Karawang Barat, Sirnabaya, kec. Telukjambe Timur, Kabupaten Karawang, Jawa Barat 41361. The working time is from Monday to Thursday that starts from 07.15 – 16.00 WIB, for first coffee break starts from 09.30 – 09.45 AM, the lunch break which is starts from 11.45 – 12.30 WIB, for second coffee break starts form 15.30 – 15.45 WIB. For Friday the lunch break starts from 11.45 – 13.00 WIB and it finish at 16.30 WIB. During Industrial Practice, compiler was placed in TMMIN plant 2, Karawang at Engineering Service ATMI Office for learning Logistic which is one part of Supply Chain Management Department

CHAPTER 2

COMPANY OVERVIEW

2.1. Brief History of the Company

2.1.1. History of the Company

PT. Toyota Motor Manufacturing Indonesia (PT. TMMIN) is one of the subsidiaries of Toyota Motor Corporation (TMC) which is a car factory originating from Japan with headquarters in Toyota, Aichi. TMC is a member of the Toyota Group and manufactures cars with several other brands such as Lexus, Scion, Daihatsu and Hino and has a small share of shares from Subaru and Isuzu. Toyota Motor Corporation was founded in September 1933 as the Toyoda Factory Car division. At present, Toyota is the largest car manufacturer in the world with the highest number of unit sales and net sales. The company grew so rapidly that in the 1940s Toyota had begun to enter the name of the company into the stock exchanges in Tokyo, Osaka and Nagoya and recorded in 1947, Toyota car sales in the country had reached 100,000 vehicles, Toyota's name in the international automotive market more famous with the best products, namely Land Cruiser (1950), Corola (1996), and Toyota Camry (1990) which managed to print the best sales in America.

In running their business, Toyota has its vice in Indonesia, namely PT. Toyota Astra Motor (PT. TAM) which was founded in 1971 and subsequently established an assembly company called PT. Toyota Multi Astra. After that in 1996, PT. Toyota Motor Manufacturing Indonesia was established which was later announce officially as a Toyota Factory in 2000 as a production division of PT. TAM in lieu of PT. Toyota Multi Astra.

In 2003, PT. TAM was reorganized with PT. TMMIN by placing PT. TAM as the official distributor of PT. TMMIN for domestic sales. For the export segment market, PT. TMMIN exports car units to Taiwan, Brunei Darussalam, Thailand, Arabia, the Philippines, Malaysia, Latin America, Morocco, Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates through vice of other Toyota Motor Corporation

subsidiaries. The description can be seen in Figure 2.1. Toyota Motor Corporation Company Scheme with PT. Toyota Motor Manufacturing Indonesia

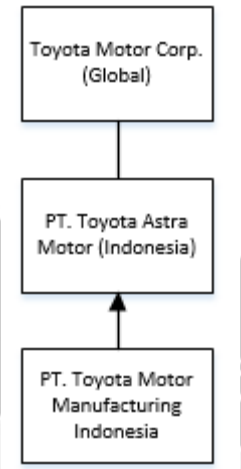


Figure 2.1. Toyota Motor Corporation Company Scheme with PT. Toyota Motor Manufacturing Indonesia

2.1.2. Product of Company

Production at PT. TMMIN is held at a location at:

a. Karawang 1 & 2
   Press, Welding, Painting, Assembling, Quality
   Jl. Permata Raya Lot DD-1 KIIC Industrial Estate (Jakarta-Cikampek Toll km 47) Karawang, West Java 41361
   Phone: 021-8904222
b. Karawang 3
   Engine Production
   Jl. Trans Heksa Lot KJIE Teluk Jambe, Karawang, West Java (Tol Road Jakarta-Cikampek, Exit Karawang Barat Km 47)

On this occasion the author carried out practical work at Karawang 1 by producing products including:

2.1.2.1. Toyota Innova Reborn

Toyota Innova Reborn is the 7th generation of Toyota Kijang Innova which was launched on November 14, 2015 ago and is included in the MPV (Multi-Purpose Vehicle) car category. This car is available in gasoline and diesel engine variants. For this generation, Toyota issued 3 types of name, namely types are G, V and Q. These products can be seen in Figure 2.2. Toyota Innova Reborn

Figure 2.2. Toyota Innova Reborn

2.1.2.2. Toyota Fortuner

Toyota Fortuner is a product of PT. TMMIN which is a car with a midsize SUV segment that has been marketed in Indonesia since 2007. After ten years, the Toyota Fortuner has updated the design in 2017. The Toyota Fortuner marketed in Indonesia is available in gasoline and diesel engine variants with 2.4-liter and 2.7-liter engine capacities. This car is also available in various types including types G, VRZ and SRZ. The test product can be seen in Figure 2.3. Toyota Fortuner

Figure 2.3. Toyota Fortuner

2.1.3. Corporate Awards & Certificates

PT. Toyota Motor Manufacturing Indonesia won various awards and certifications both nationally and internationally. Some of the awards and certifications show the quality of both the product and the company itself. The awards are:

1. Proper Award (2010)
2. Proper Award Sunter II (2011)

3. The Best Environtment Management Company by Toyota Motor Asia Pasific (2012)
4. The Best Environtment Company by Goverment of DKI Jakarta (2012)
5. Proper Award Green by Ministry of Goverment (2012)
6. The Best Environtment Management Company by Goverment of DKI Jakarta (2013)
7. Asean Best Energy Award (2014)
8. The Best Rapporteur Company Export Foreign Exchange (2015)
9. BPLHD Of West Java (2015)
10. Sustainability Reporting Award (2015)
11. 1st Platinum Award in Global Eco (2015)
12. The Best Envirotnemtn& Performance Award by Goverment of DKI (2015)
13. Archipelago CSR Award (2015)
14. Primaniyarta Award (2015)
15. The Best Indonesian Green Award (2016)
16. WIMACO Award (2016)
17. Good Factory Award (2016)
18. Social Business Innovation Award (2016)
19. Primaniyarta Award (2016)
20. The Best Environment Management & Performance Award (2016)
21. Astra Green Energy Award – The bEst Program of Energy Improvement & Renewable Energy (2016)
22. CSR Appreciation 2016 – Sindo Award
23. Green Proper Award 2016 for TMMIN Karawang
24. World Custom Organization (WCO) – 2017
25. The Award for the Best Authorized Economic Operator Company
26. The Best Indonesia Green Award (2017)
27. Most Admired Company (2017)
28. Sindo Innovation Awards (2017)
29. Social Business Innovation and Green CEO Awards (2017)
30. Autocar Indonesia Reader's Choice Awards (2017)
31. Excellent Company and Warranty Reduction Content (2018)
32. German Design Award (2018)
33. Gold Medal from Asia Pasific Postproduction Option (2018)
34. PMMI 2018 (QCC-SS Award) – 2018
35. 3 Gold Medals from Temu Karya Mutu dan Produktivitas (2018)
36. Primaniyarta Award (2018)
37. Nusantara CSR Award (2018)
38. Bronze Medal from TMC Skill Interchange Festival (2018)
39. Excellence from Asean Skil Competition (2018)
40. Ap 6th Environtmental Award (2018)
41. 20 Medals from Toyota AP Skill Contest (2018)
42. Innovastha 2018 (QCC and SS Awards)
43. Asia Production Quality Award (2019)
44. Anugrah Indonesia Maju (2018 – 2019)

45. Indonesia Industry 4.0 Readiness Index (2019)
46. Asia Pacific Customer Serviec Kaizen Evolution (CSKE) Cup
47. Indonesia Most Admired Company (2019)

Some of the certifications are:

1. ISO 9001

   This certification is an international standard in the field of quality management systems. This standardization occurs in the work process with specifications are the points in the work process that must be achieved in the quality management of the products / services produced.

2. ISO 14001

   ISO 14001 certification is an international specification regarding environmental management. One of the actions taken in this process is by managing waste, the process also supports government processes in running environmentally friendly industries.

3. SMK3

   SMK3 is an environmental management system that aims to support work safety in the process. This management system can be done by controlling risks related to both production and non-production activities.

2.2. Organizational Structure

2.2.1. Organizational Structure

PT. Toyota Motor Manufacturing Indonesia has an organizational structure both as a whole and specifically. One of the organizational structures of this company is the Logistics which functions as:

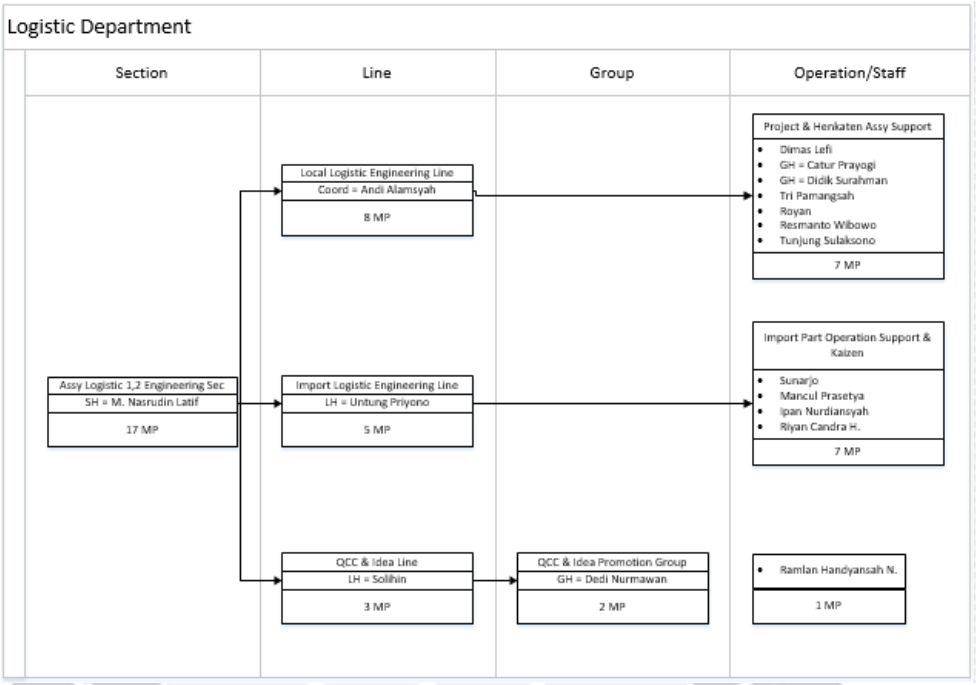


Figure 2.4. Organizational Structure Logistic Department

2.2.2. Job Description

An explanation for each job description in Figure will be explained in each section of the Logistics Department

a. Section

In Section there is a Section Head as the leader for the Logistic Department in Assembly Logistic 1,2 Engineering Section

b. Line

There are Coordinator in the Local Logistic Engineering Line, Line Head in the Import Logistic Engineering Line, and Line Head in the QCC & Idea Line. That coordinator task is managing their group/personnel in their area.

c. Group

For the group there is only Group Head in the QCC & Idea Promotion Group, because the team of QCC need several personnel with the same job in their several jobs.

d. Operator/Staff

On the Operator/Staff there are many sections that divided by 3, there are Project & Henkaten Assy Support, Import Part Operation Support & Kaizen, and person from QCC & Idea Promotion Group. The divided of the section is based on the line job area.

2.3. Company Management

PT. Toyota Motor Indonesia has rules that are guidelines for working within the company, these rules are regulated in the Vision Mission and the principle of company PT. Toyota Motor Manufacturing Indonesia

2.3.1. Company Vision dan Mission

Vision is a picture and purpose of an Institution or company in the future so that the vision becomes a race for the company, while for the mission is a way to achieve that goal, so that it is possible that the mission needs to be changed in such a way if it has not been achieved.

a. Company Vision

i. The Best and Flexible Company

PT. TMMIN is committed to becoming a global manufacturing company to develop the best manufacturing operations to produce global quality products that can easily adjust market requirements in each country.

ii. Admired Company

PT. TMMIN is committed to continue to contribute to Indonesia's development.

b. Company Mission

Helping people and goods move comfortably from one place to another through sustainable development in technology, products and services in the automotive industry.

2.3.2. Company Principles

TMMIN holds the main principles in providing the best, these principles are summarized in 7 Toyota's Principles, including:

1. Integrity
    a. We uphold integrity and act on promises
    b. Act responsibly according to the promise (walk the talk)

c. Demonstrate integrity and ethics in daily work activities based on the principles of Good Corporate Governance

2. Visionary
   a. We contribute to the development of the Indonesian industry and society and place the interests of customers as the first priority
   b. Contributing to the Indonesian nation and society
   c. Focus on customer needs by predicting and responding to company needs and market business opportunities
3. Appreciate
   a. We respect the team members and supervisors by listening to the opinions of others with open minds and hearts
   b. Respect and respect our team members, colleagues and superiors
   c. Building a conducive and harmonious working atmosphere
4. Ownership
   a. We work as a unit with a sense of ownership, aiming to achieve goals with our own efforts
   b. Carry out our duties with ownership and responsibility
   c. Actively stands for all company interests (defend our castle)
5. Innovation
   a. We continue to improve and encourage innovation
   b. Tireless and not easily satisfied in pursuing improvement (kaizen)
   c. Dare to change and take risks for better processes and results
6. Cooperation
   a. We build and synergize team strength, tie harmonious relationships with our stakeholders
   b. Build synergy and consensus through cross-functional collaboration to achieve goals
   c. Fostering harmonious relationships based on mutual understanding
7. Bad News First
   a. We report bad news immediately to ensure the best and timely problem solving.
   b. Report the bad news for the first time to our superiors to ensure that appropriate countermeasures have been made
   c. Dare to express opinions and suggestions in a kind and polite manner.

2.3.3. Employment

The number of workers at PT. Toyota Motor Manufacturing Indonesia amounts to around ± 9,128 people. In the Logistics Department are around

17 of people. For working hours at PT. Toyota Motor Manufacturing Indonesia has two working hours that are office hours and factory working hours. Working hours are 07.15 WIB - 16.00 WIB. For factory working hours, PT. Toyota Motor Manufacturing Indonesia is Monday to Friday starting at 07.15 WIB - 16.00 WIB, break time is 09.30 WIB - 09.45 WIB and 14.30 WIB - 14.45 WIB and lunch break is 11.45 WIB - 12.30 WIB. But factory workers are allowed to do overtime work on Saturdays 07:15 a.m. -16.00 WIB with the same time specifications as normal days.

2.3.4. Marketing

PT. Toyota Motor Manufacturing Indonesia accepts the needs of car production units both domestically and for export. For domestic parts, PT TMMIN gets a request from PT. Toyota Astra Motor, while for the export section of PT. TMMIN received requests from Toyota representative companies in the Asia Pacific and GCC countries.

2.3.5. Facility

PT. Toyota Motor Manufacturing Indonesia has facilities services to support the comfort of both workers and staff at PT. This TMMIN. Some examples of these facilities are:

a. Mosque

   PT. TMMIN provides prayer rooms for employee needs available in the office, plant and close to the line operator. For hours of worship available at rest and after break during working hours

b. Sport Hall

   PT. TMMIN facilitates sports venues used in conducting sports competitions

c. Toyota Futsal Center

   PT. TMMIN facilitates employee hobbies in futsal sports, which are located next to health center. This futsal field is used for all employees outside working hours with a capacity of 1 futsal field to accommodate 2 teams and 100 spectators

d. Toyota Basketball

   PT. TMMIN facilitates the hobby of employees in basketball sports, which is located east of the entrance. Toyota basketball has a capacity

of 120 people including 2 basketball teams that are used when employees are outside working hours

e. Toyota Tennis Yard

   PT. TMMIN facilitates employee hobbies in tennis

f. Health Center

   To support the health and safety of workers, PT. TMMIN provides a health center, which is located in front of an employee cooperative. The health center is facilitated by 1 general practitioner and 10 nurses to anticipate if an unwanted event occurs. At the health center itself there is an ambulance ready when needed to be referred to the nearest hospital.

g. Employee Cooperative

   This employee cooperative called Family Mart has all the necessities such as items that are in the mini market. There is also a vending machine that facilitates workers to shop, this vending machine works in conjunction with the Blue Mart that has been synchronized with the application located on the smartphone.

h. Gym Center

   PT. TMMIN facilitates employees to conduct fitness activities, which are located close to employee cooperatives. This gym center can accommodate around 40 employees and contains 10 fitness devices that can be used for employees outside of work time.

i. Car Commuter

   Considering the efficiency of the time problem, PT. TMMIN facilitates commuter cars that can be used in a corporate environment. Available car commuter is a production car off the road or non-street road legal without a vehicle police number.

j. Canteen

   There are several canteens provided by PT. TMMIN, namely from the staff canteen, office canteen, and manager canteen. Each canteen uses a self-clean up system so that it does not leave the food tray on the dining table. Canteen opening hours on Mondays - Thursdays are

11.45 WIB - 12:30 WIB, but the opening hours of the canteen on Friday are different from the previous day at 11:45 WIB - 13:00 WIB

CHAPTER 3

SYSTEM REVIEW COMPANY

3.1. Business Process Company

PT. Toyota Motor Manufacturing Indonesia have so many departments, it will be shown in general what kind of general process business that on PT. TMMIN plant 1 have on Figure 3.1. Business Process General

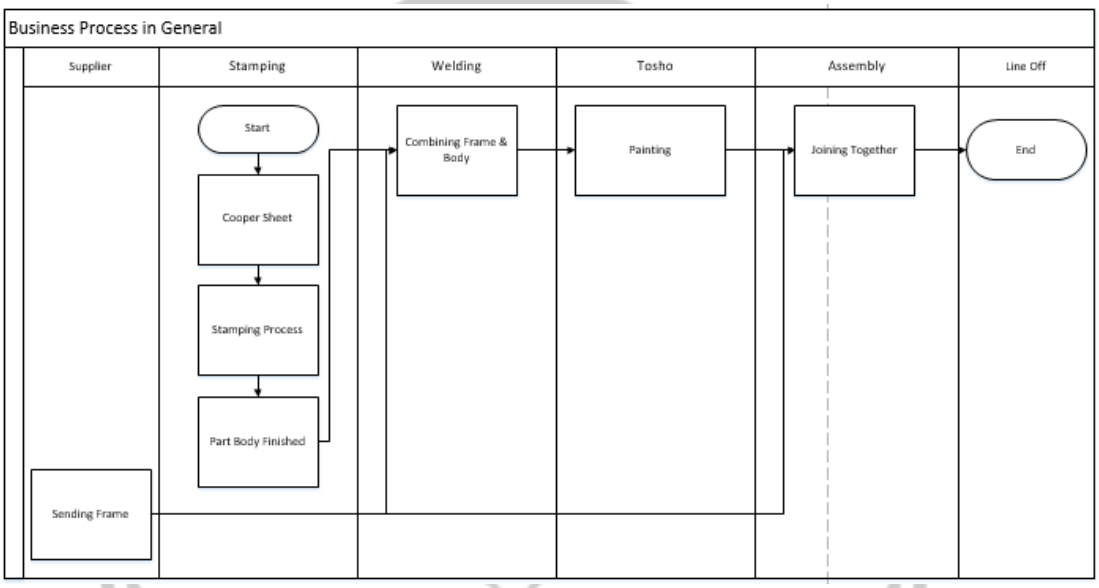


Figure 3.1. Business Process General

On that process business start with the raw material at the Stamping Department into the Line Off. The task of Department Line Off is the final step after the product pass Stamping Department, Welding Department, Tosho Department, and Assembly Department. The task of the supplier is such as sending the frame with the halfway process or Work in Process (WIP) and send it into Assembly Department to joining together.

On this occasion the author was placed in the Logistic Department, the author will show the process business more specific in the Assembly Department, it will show in Figure 3.2. Business Process Local Part Logistic

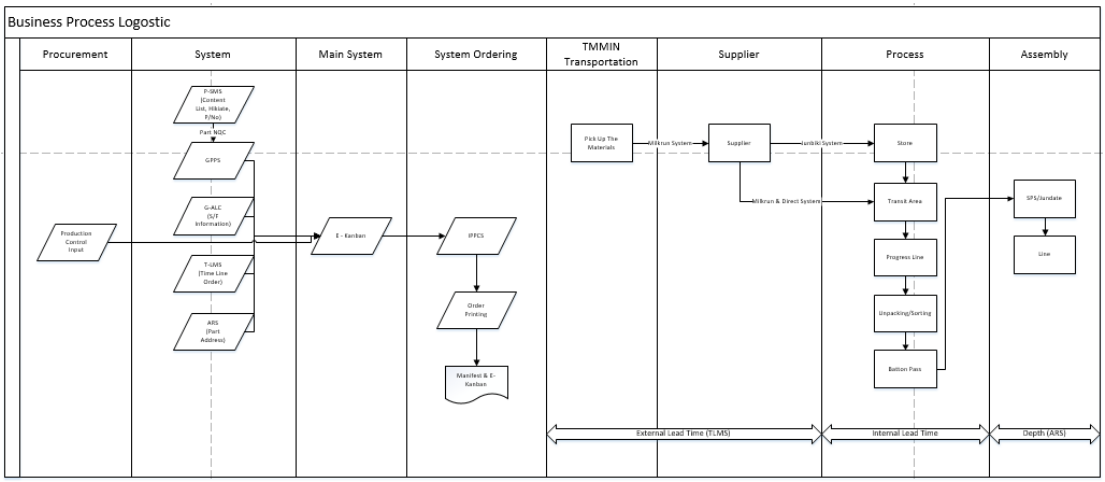


Figure 3.2. Business Process Local Part Logistic

The usual one of business process for the end point is the customer, but on this business process the end of the point is the Assembly Department. The changing of the end point from customer to the Assembly Department because of the whole process of the Logistic performing on the procurement, system ordering, system production, and manufacturing process. Logistic must be supply to the assembly as the customer to fulfil the target that has been planned before using the system.

3.2. Produce Product

PT. Toyota Manufacturing Indonesia Plant 1 produces a product such as Toyota Innova cars and Toyota Fortuner with a production capacity of 195,000 units per year. Both cars are produced and marketed with local market segmentation by PT. Toyota Astra Motor or exported to other countries. For the technical specifications of the Toyota Innova and Toyota Fortuner are explained as follows:

3.2.1. Toyota Innova

Figure 3.3. Toyota Innova

3.2.2. Toyota Fortuner

Figure 3.4. Toyota Fortuner

3.3. Production Process

3.3.1. Raw Material

Products produced by PT. Toyota Motor Manufacturing Indonesia Plant 1 is a Toyota Innova and Toyota Fortuner. The location process is on plant 1 is a stamping department, painting (Toso) and assembly.

In the process of stamping is process of converting copper material by doing the stamping press process. For this matter, PT. Toyota Motor Manufacturing Indonesia uses a stamping machine to form the base frame of the car, and the body of the car. The output of the department is the body of the car that are ready to be connected to the frame come from the supplier's order in the welding department, so that each part is integrated into the department. The results of the department welding will be given to the toso department for the painting process. After painted the part of the body is going through the department assembly and some several frame from supplier is combined again to make the final product.

3.3.2. Production Process

The production process is the process of managing raw materials to the process of processing semi-finished or Work in Process (WIP) and finished products. In this case, PT. TMMIN uses copper as a material for making part bodies and then combines it with other car parts that have been subcon with suppliers which are combined to be complete at the time of assembly in the assembly shop.

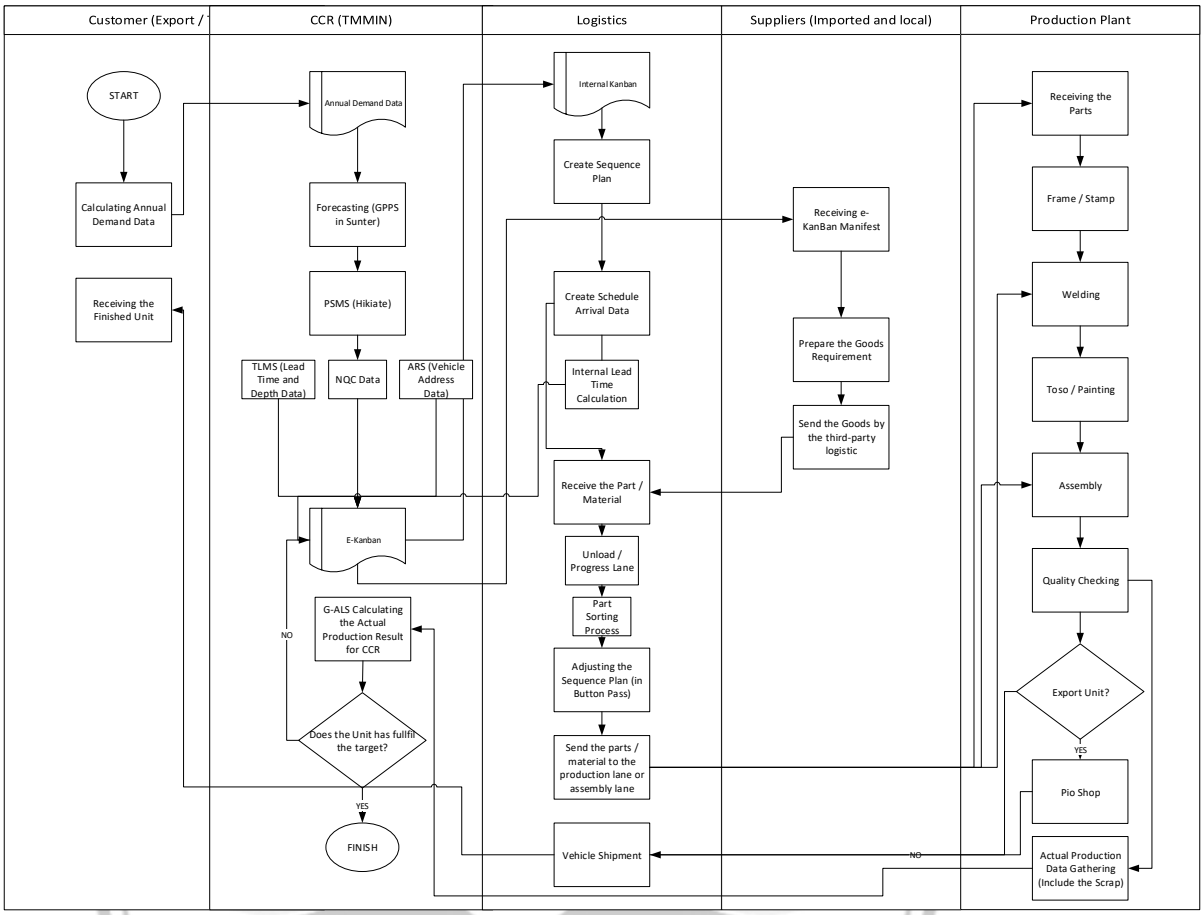


Figure 3.5. Business Production Process

In the process above, PT. Toyota Motor Manufacturing Indonesia gets monthly demand information from the customer that is delivered in the CCR section located in the injection plant. The demand data is used for production planning and part purchasing carried out by the procurement division. The production process begins with the receipt of raw materials used for the stamping process. After the product is finished by the stamping division, the product will be processed in the welding shop and will go into the shop for painting. The unit that has been completed during the painting process will be continued for the assembly process for unification with parts that have been brought in from the supplier. Until, who has finished working on the assembly process, will carry out a quality checking process before the unit is stored and distributed to TAM or exported. The production process at plant 1 as of July 25, 2019 has a tack time of 2 minutes. This means that in every 2 minutes there are results from PT. TMMIN 1 unit of car ready to use.

3.3.3. Quality Control

Quality control is a final production stage at PT. Toyota Motor Manufacturing Indonesia in order to ensure the quality of the products themselves and for the satisfaction of

consumers. To ensure good quality, PT. TMMIN performs various ways including planning, implementing and controlling.

The QC division is divided into 6 parts, among others, the QC Engineering Project, QC Engineering Service Plant 1, QC Engineering Service Plant 2, Quality Inspection Plant 1, and Quality Inspection Plant 2. Quality inspection plant 1 has 3 parts namely Vehicle Inspection Support, Vehicle Inspection 1, and Vehicle Inspection2. In the Vehicle Inspection Support section, it is responsible for 100% checking, part sampling, supplier quality development, leading investigation and lead problems, and investigating vehicle problems.

Vehicle Inspection 1 is responsible for inspection of vehicle specifications, vehicle engines, exterior and interior body fittings. Vehicle Inspection 2 has the task of checking vehicle functions, checking Front Wheel Alignment (FWA), drum tests, brake tests, bodies, rope tests, and shower tests.

Complete Vehicle Evaluation is a small part of the QC department that conducts vehicle inspections by sampling. Vehicle inspection on CVE includes static and dynamic checks. Static checks include Front Wheel Alignment (FWA), Aiming Headlamp, Pedal Spec, Handle Force, Vehicle Spec and others. Dynamic inspection includes drive screening, shower tests. The following is a business process that occurs in the CVE section on Figure 3.6. Business Process in CVE

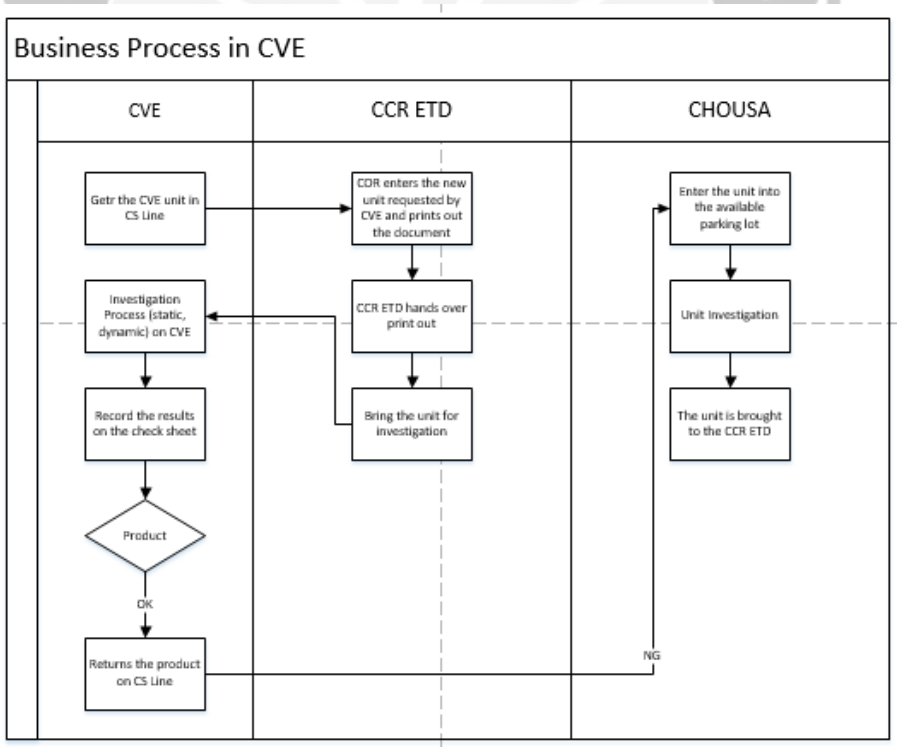


Figure 3.6. Business Process in CVE

3.4. Operation Facility

Operating facilities are all things that can facilitate the production activities that are used effectively and efficiently

3.4.1. Machine Process Production

Below are the machines used during the car production process, including:

a. Stamp Machine
   A stamp machine is a machine that is used to form a flat material into a material that is shaped according to the machine used. At PT. TMMIN, the stamp machine is used to form a body that has copper raw material which is in the frame shop
b. Welding Machine
   Welding machine is a machine used to unite material with one another by welding. At PT. TMMIN, welding machines are used to unite body parts before the parts go to other departments
c. Painting Machine
   Painting machine is a machine that is used to paint the body according to a request that has been determined by the customer
d. Assembly Machine
   Machine assembly is a machine that is used to unite one part with another part

3.4.2. Material Handling Tools

a. Screw Reclaimer
   Screw reclaimer is a tool used to lift heavy parts. It is shaped like a remote-control controller that is connected to a cable
b. Skid / Pallet
   Skid / pallet is an object used to transport parts in large quantities, the efficiency limit or minimum of the skid must be ≥ 0.5m² and the maximum is 1m². So, if the limit is violated it will cause the possibility for the item to be defective (Not Good Product).
c. Forklift
   Forklifts are vehicles that have hooks to move skid / pallet to the destination. Transport using the forklift by connecting the hook to the forklift with the centre of the skid / pallet
d. Dolly
   Dolly is a non-motorized train that has 4 wheels, used to carry goods or skid / pallet to the destination. Dolly has a hook that is used to associate dolly one with another dolly or to associate dolly with towing.
e. Towing
   Towing is a vehicle used to pull cargo (Dolly) or a means of transportation used to carry goods bring it into the destination or if there is a hot call. The maximum towing limit in transporting dolly is 10, so that if the towing carries a load more than the maximum limit then the activity is an unsafe action.

f. Conveyor
Conveyor is a mechanical engine that is used to carry parts from one place to another. On each conveyor, part that carried out to the destination of the conveyor. Conveyor used at PT. This TMMIN are a multilevel conveyor and the standard conveyor

3.4.3. K3 Support Facilities Work

a. Helmet
Helmets are a protective means provided by the company to every worker. Helmets are used as protectors from work accidents that have the risk of falling or falling into goods in their work. The company has different helmet colours according to their respective uses. The colour consists of white, yellow and red.
b. Eyeglasses
Glasses are a means of eye protection provided by the company to some workers. Workers who work in the area of welding, painting, maintenance must use glasses that function from the use of each eyewear.
c. Mask
Masks are protective facilities provided by the company to every operating worker. Workers use masks as protection from gas, dust, or other things that can cause harm from the production process.
d. Gloves
Gloves are a protective device provided by the company to operating workers. Operation workers who work in the factory area must use gloves when carrying out production activities to protect hands from workplace accidents that can occur. Gloves are divided into 2 types, namely cloth gloves and rubber gloves, the differentiation of gloves is distinguished based on the type of operations carried out.
e. Shoes
Safety shoes are the main protective means of workers and must be worn by workers or staff who want to enter the production room. The company's shoes are equipped with iron mounted on the front end of the shoe. This is intended so that workers' feet can be protected from accidents that can occur. Shoes at PT. Toyota Motor Manufacturing Indonesia is distinguished into ordinary safety shoes with safety shoes without electromagnetic networks
f. Pulse protector
Pulse protectors are a protective means of operating workers, some operating workers at the factory are required to use these tools to protect the pulse of the worker.
g. Elbow protector
Elbow protectors are a protective means of operating workers, some operating workers at the factory are required to use these tools to protect the elbows of these workers

h. Arm protector
   Arm protectors are a protective means of operating workers, some operating workers at the factory are required to use these tools to protect the arms of these workers
i. Safety rope
   The safety rope is a protective means of operating workers, some workers operating at the factory are required to use the equipment if in the circumstances the worker is riding the facility in carrying out his work.
j. Ear plug / ear muff
   Ear plug is a protective device provided by the company to every operating worker, operating workers who work in a state of noise exceeding the limits of the standard must have an ear plug or ear muff that serves as a protection from the noise that occurs.
k. Apron
   Apron is a protective suggestion given by the company to every operating worker. The apron is used to protect the stomach from harmful substances that can be exposed to the body or protect it from the injury of the stomach to other objects.

CHAPTER 4

REVIEW OF STUDENT WORK

4.1. Scope of Work

At the company PT. Toyota Motor Manufacturing Indonesia (TMMIN) the implementation of practical work carried out at the Logistics Department of this Department plans and regulates all company activities, especially in the Logistics Department. The author is encouraged by Mr. Mohammad Nasrudin Latif as the 1.2 Local Section Head Assembly. In addition, the author is assisted by several colleagues in the Department at PT. Toyota Motor Manufacturing Indonesia (TMMIN); Plant 1, Logistic Department, Engineering Service ATMI among others:

a. Mr. Andi Alamsyah, as Line Head Office Engineering Service Plant 1, who gave an explanation of the logistical description of Plant 1
b. Mr. Imam Efendi, as Line Head Office Engineering Service Plant 1 part of Local Part Admin Line
c. Mrs. Yolanda Sapphira, as Section Head of Logistics, Administration which explains the structure and general description of Supply Chain Within PT. Toyota Motor Manufacturing Indonesia (TMMIN)
d. Mr. Untung, as Line Head Office Engineering Service Plant 1-part Import Part
e. Mr. Sugeng, as Line Head Supply
f. Mr. Dimas Lefi. as Mentor explained the logistics of the local part in the Small Part field and as a mentor in the case study given to the author.
g. Mr. Tunjung Sulasono, as the Assembly Local Operator 1.2 who gave an explanation of the case studies given to the author and the Person in Charge (PIC) that guided the author in carrying out his case studies in PT. Toyota Motor Manufacturing Indonesia (TMMIN) regarding problems with the Button Pass Department.
h. Mr. Catur, as the Operator who provides explanation about the local logistics part of the Big Part and Junbiki fields.
i. Mr. Ade Kurniawan, as the Import Logistics Group Head who gave an explanation of the description of the Line Supply Request (LSR).
j. Mr. Aziz Zulkarnaen, as the operator of the Import Logistics field who gave an explanation of the inventory description on TMMIN.
k. Other colleagues who help in the process of implementing practical work

4.2. Responsibility and Authority in Employment

While undergoing practical work at PT. Toyota Motor Manufacturing Indonesia (TMMIN), the author was given the task of studying the system in the Local Logistics Department, Import Logistics, and completing the tasks given during practical work. The author is given the competence to retrieve part data (Unique No.), supplier data, data box, work with colleagues in the department about the company, and discuss

with mentors about specific tasks and developments during practical work at the company.

4.3. Job Implementation Methodology

When doing practical work, the author is given special assignments to fulfil one of the assessment requirements for practical work. The specific task given is to reduce the percentage of mixing route / conveyance in the Button Pass Department and provide recommendations in the form of related analysis. At Button Pass Department that is assessed as a waste (muda) in double handling and sorting less. The work done by the author can be seen through the work implementation flowchart in Figure 4.1. Work Implementation Flowchart

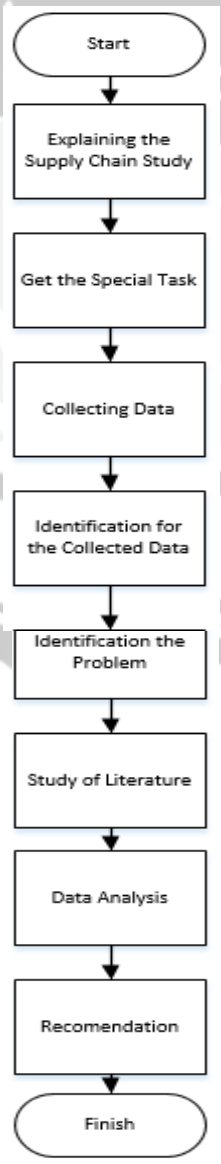


Figure 4.1. Work Implementation Flowchart

4.3.1. Background

Plant 1 TMMIN has a background regarding the Logistics Department. This Department of Logistics is divided into 2 parts:

1. Local
2. Import

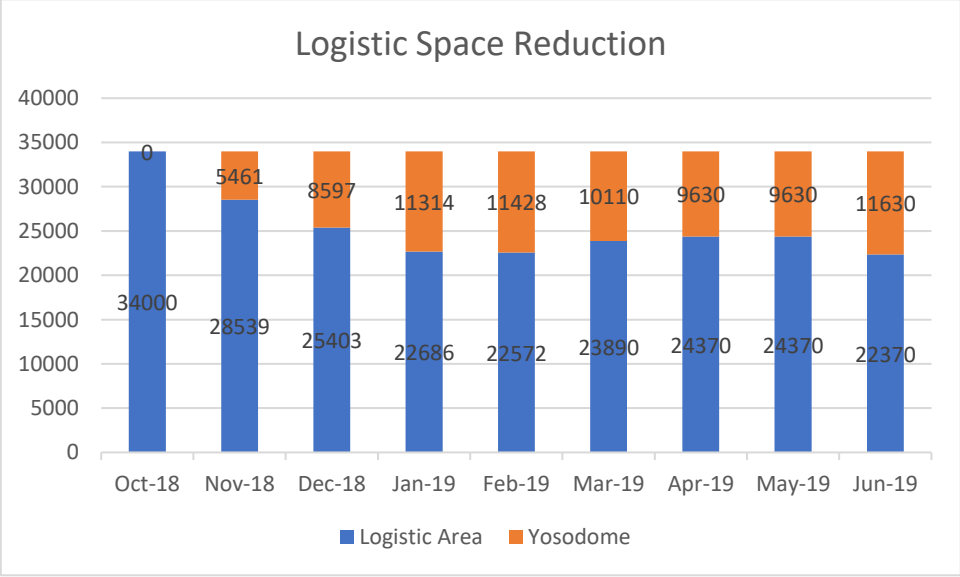
In the local section has data that can show the developments guidelines in their development. The development of management in logistics first began in Plant 2, so Plant 1 made progress to keep on a line of developments in Plant 2. The developments are listed in Logistical Structural Reform.

The Logistic Structural Reform has a strategy that becomes a guideline in the execution of a problem, namely "Speedy Yokoten From Plant 2". This Structural Reform Strategy has meaning by speeding up the imitation of activities that are good in Plant 2 for Plant 1 Toyota Motor Manufacturing Indonesia. In addition to strategy in the Structural Reform PT. Toyota Motor Manufacturing Indonesia has guidelines, namely:

1. Logistic Touch Reduction
2. Pursue to Eliminate Muda Standard Work

This obvious in the developments happen in every month on Plant 1 PT. Toyota Motor Manufacturing Indonesia is approaching developments on Plant 2. The developments that occur can be seen in the Logistical Space Reduction on Plant 1, which can be seen in the Table 4.1. Logistic Space Reduction

Table 4.1. Logistic Space Reduction

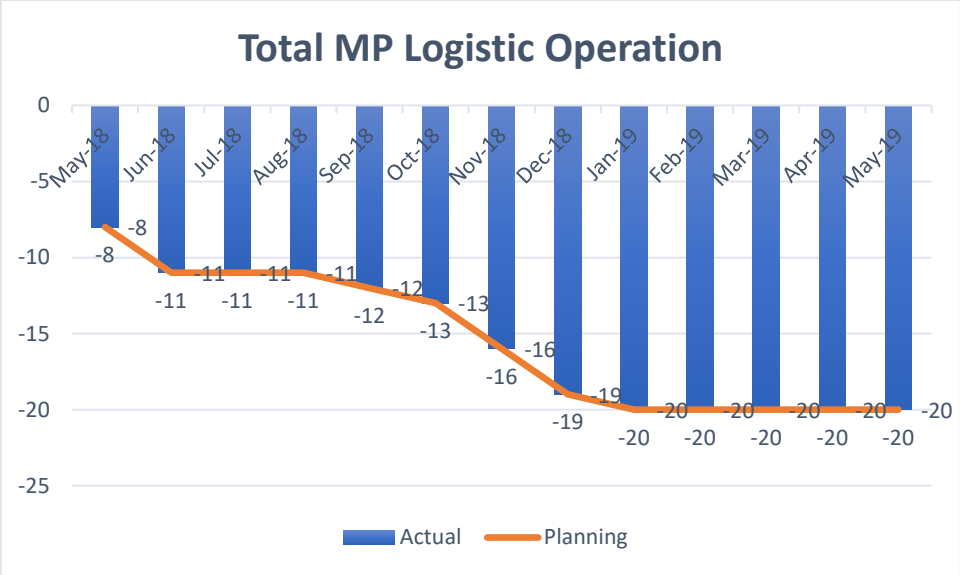


This logistics area at Plant 1 of Toyota Motor Manufacturing Indonesia in October 2018 was 34,000m2, with Space Area (Yosodome) still empty. Developments began to be

made in the following months which resulted in good development, until the final data obtained was in June 2019 with a Logistic Area of 22,370m2 and Yosodome 11,630m2.

In addition to the development of Logistic Space Reduction other developments can be seen through the Total MP Logistic Operation. This development led to a reduction in Man Power (MP) at Toyota Motor Manufacturing Indonesia. Table Total MP Logistic Operation can be seen in Table 4.2. Total MP Logistic Operation

Table 4.2. Total MP Logistic Operation



The total MP that occurred from May 2018 was reduced by 8 MP. This was in accordance with the planning at TMMIN plant 1. This continues to grow in the following months until the latest data was for May 2019 to be reduced to 20 MP.

4.3.1.1. Local

The background of the TMMIN is a guideline for further to be better in both the strategy and department fields in each Plant. Local Department has 3 parts, namely:

1. Small Part
   Small Part consists of several departments, namely:
   a. T/S Unload
   b. Progress Line
   c. Sorting
   d. Button Pass
   e. Production Line
   f. Empty Sort
   g. Empty Set Line
   h. T/S Empty Loading

2. Big Part
   Big Part consists of several departments, namely:
   a. T/S Unload
   b. Store
   c. Jundate
   d. Supply
   e. Production Line
   f. Empty Store
   g. T/S Empty Loading
3. Junbiki
   Junbiki consists of several departments, namely:
   a. T/S Unload
   b. Store
   c. Supply
   d. Production Line
   e. Empty Store
   f. T/S Empty Loading

4.3.1.2. Import

The division of imports is divided into several departments that occur in the present situation, namely:

a. Controlling Container
b. Devanning & Vanning
c. Module Storage
d. Supply Module
e. Unpacking Module & Tapping
f. Shutter P/Line
g. Free Location Rack
h. Button Pass
i. Main Line
j. Empty Sort

4.3.2. Obtain Special Tasks

On this occasion the author was given a special assignment while undergoing practical work to observe the logistics of the local part in the small part field. The author observes in the small part field because in the small part field it should have to change in 1-year time span.

4.3.2.1. Previous July 2018

In 2018, Plant 1 TMMIN Logistics has 11 departments that include:

1. T/S Unload
2. Receiving Check
3. Progress Lane

4. Unpacking
5. Pc Store
6. Button Pass
7. Line Side
8. Empty Sort
9. Empty Store
10. Empty Set Lane
11. T/S Empty

Based on the 11 departments, they have the following specifications:

a. Process = 11
b. Total Distance = 180m
c. MP/Shift = 32

From the various departments there are several departments that are considered not efficient, the department includes: Receiving Check, Unpacking, Pc Store, and Empty Store. So that the next steps from some of these departments will be eliminated.

4.3.2.2. Current June 2019

In 2019, Plant 1 TMMIN logistic developed, which originally began from 11 departments to 7 Departments

1. T/S Unload
2. Progress Line
3. Button Pass
4. SPS Line Side
5. Empty Sort
6. Empty Set Line
7. T/S Empty Loading

Based on the 7 departments, they have the following specifications:

a. Process = 7
b. Total Distance = 136m
c. MP/Shift = 27

From various departments, there is a money department that is considered not efficient, the department includes: Button Pass, and Empty Sort. So that the next steps from some of these departments will be eliminated to be ideal.

4.3.2.3. Ideal Medonashi

Ideally, from a logistics, only 5 departments are located, namely:

1. T/S Unload
2. Progress Line
3. SPS Line Side
4. Empty Set Lane

5. T/S Empty Loading

Based on the 5 departments, they have the following specifications:

a. Process = 5
b. Total Distance = 105m
c. MP/Shift = 23

In the Current June 2019 condition TMMIN Plant 1 has 7 Departments which in the process of being ideal, this condition is the same thing done with TMMIN Plant 2, TMC (Japan), and TMT (Thailand). But it is different from ADM (Daihatsu) which has 8 Departments on logistics.

The opportunity given by the author when observing the logistics of the local part of the small part field is to eliminate the empty sort department or at least reduce the percentage of the 10%. In this study, there are several limitations and assumptions used, namely:

c. Scope of problem
    i. This study only discusses local logistic fields in the small part field
    ii. Data collection is carried out in several cycles to collect several supplier names that coincide on June 15, 2019
    iii. This work is taking sample data intended for real problems that exist in PT. Toyota Motor Manufacturing Indonesia (TMMIN)
    iv. Some data may not be taken because the data is considered crucial data and should not be disseminated
d. Assumption
    i. The data taken has been able to present the accuracy of the data for the real problem
    ii. The recommendations concluded can reduce the percentage in the real problem, or at least return the flow of effectiveness to 4% which starts from 10%

4.3.3. Identification of Problems

The specific task identification given to the author is to eliminate the Empty Sort Department by analysing the origin of the sorting carried out at the Department of Empty Sort. The author does the further observes this task, by observing the flow of goods. The first sorting of goods is done at the Button Pass Department after going through the Sorting Department. So that, the Button Pass Department must be done it first before the Empty Sort Department. If the problem that first appears is eliminated or at least reduces the percentage of its work, the effect will also have an impact on the Department of Empty Sort.

The analysis is carried out deeper by observing in the Button Pass Department which is tasked with sorting each part to be taken to the Production Line. In the Button Pass Department there are several fields that divide the sorting part into the Production

Line, but there are fields that are considered that have the greatest possibility or the largest percentage in mixing items in one skid / pallet, namely the division of eastern and western zones. So, what the author does in the next step is to analyse further in the Department of Pass Button for the eastern and western zones.

4.3.4. Study of literature

The activities that occur in the Empty Sort Department are considered as a waste measure. These activities can be affecting in waste that happen in waste of use resources, time and waste of movement is an activity that can disrupting and not give added value to the activities of the company. The Department of Empty Sort which is considered not efficient and not effective in carrying out their activities and influences the work in the other departments. so, from that problem can be described as a cause and effect both to the other Departments and from the first step, that is on the delivery of goods.

One of the tools that can be used to solve the problem that happen is using a fishbone diagram. Fishbone diagrams are diagrams that use graphical methods to find the cause of a problem through brainstorming techniques. The Figure 4.2. Fishbone Diagram shows an example of a fishbone diagram

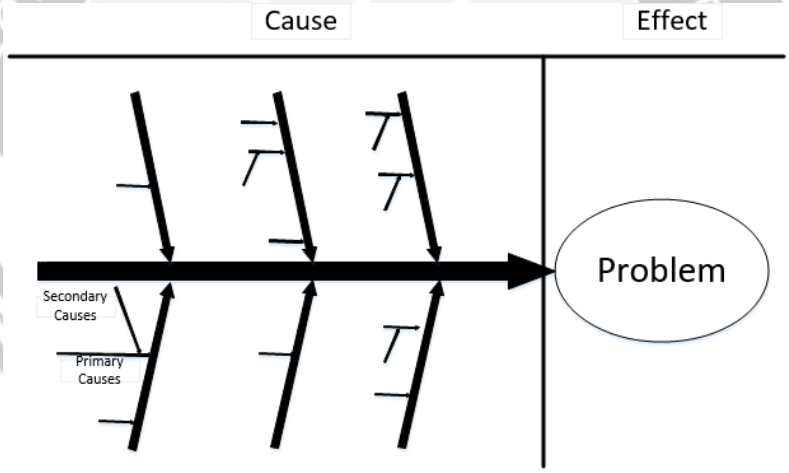


Figure 4.2. Fishbone Diagram

From several causes and consequences that occur in the fishbone diagram, the problem can be described and the consequences are considered not efficient. The non-efficiency can be explained according to Concept of Toyota. Concept of Toyota is a 7 waste (muda) of the Toyota Production System, namely:

1. Waste of Overproduction
   Overproduction is highly costly to a manufacturing plant because it prohibits the smooth flow of materials and actually degrades quality and productivity. The Toyota Production System is also referred to as “Just in Time” (JIT) because every item is made just as it is needed. Overproduction manufacturing

is referred to as “Just in Case.” This creates excessive lead times, results in high storage costs, and makes it difficult to detect defects.

2. Waste of Waiting (Time on Hand)
   Whenever goods are not moving or being processed, the waste of waiting occurs. Typically, more than 99% of a product's life in traditional batch-and-queue manufacture will be spent waiting to be processed. Much of a product’s lead time is tied up in waiting for the next operation; this is usually because material flow is poor, production runs are too long, and distances between work centres are too great.
3. Waste in Conveyance
   Transporting product between processes is a cost incursion which adds no value to the product. Excessive movement and handling cause damage and are an opportunity for quality to deteriorate. Material handlers must be used to transport the materials, resulting in another organizational cost that adds no customer value. Transportation can be difficult to reduce due to the perceived costs of moving equipment and processes closer together.
4. Waste of Processing
   Toyota is famous for their use of low-cost automation, combined with immaculately maintained, often older machines. Investing in smaller, more flexible equipment where possible; creating manufacturing cells; and combining steps will greatly reduce the waste of inappropriate processing.
5. Waste of Inventory
   Work in Progress (WIP) is a direct result of overproduction and waiting. Excess inventory tends to hide problems on the plant floor, which must be identified and resolved in order to improve operating performance. Excess inventory increases lead times, consumes productive floor space, delays the identification of problems, and inhibits communication.
6. Waste of Motion
   This waste is related to ergonomics and is seen in all instances of bending, stretching, walking, lifting, and reaching. These are also health and safety issues, which in today’s litigious society are becoming more of a problem for organizations. Jobs with excessive motion should be analysed and redesigned for improvement with the involvement of plant personnel.
7. Waste of Making Defect & Repair
   Having a direct impact to the bottom line, quality defects resulting in rework or scrap are a tremendous cost to organizations. Associated costs include quarantining inventory, re-inspecting, rescheduling, and capacity loss. In many organizations the total cost of defects is often a significant percentage of total manufacturing cost.

The Logic of seven wastes:

Waste – Push up Cost – Eliminate Waste

If there is waste (muda), it will soon be eliminated immediately, because the waste that occurs in each activity will indirectly cause abnormality in the activity or after

activities and increase the high cost (Push up Cost) so that the waste must be immediately elimination.

The principle was also carried out in each department. In one year, the Department was given a challenge must to improve the department. So that the trip in that one year must be get the proofs in the developing for a better department.

4.4. Work Result

4.4.1. Discussion

The author uses fishbone diagrams to present the causes and consequences that occur in the delivery of these items. Delivery of goods that occur due to several reasons that support an effect. To look more deeply at the problem of mixing the route / conveyance can be seen in fishbone diagram in the Figure 4.3. Fishbone Diagram Problem

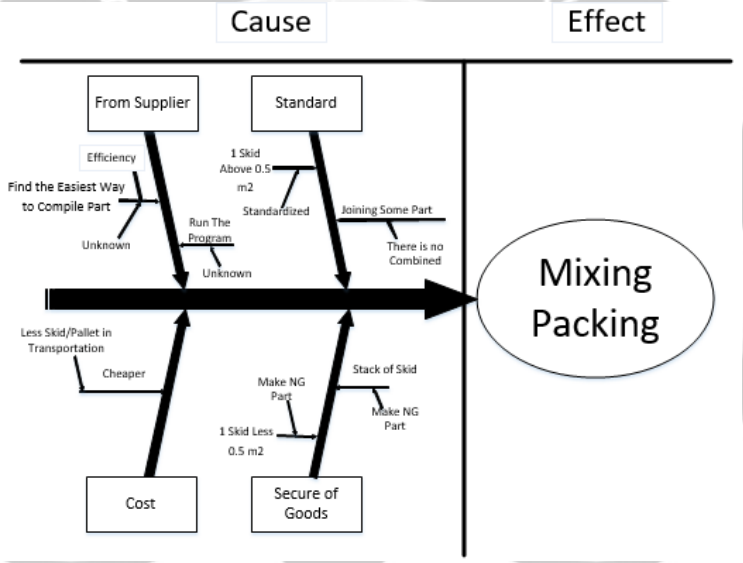


Figure 4.3. Fishbone Diagram Problem

The method for carrying out in the delivery of the goods there is a route / conveyance that is still mixed so that the effect becomes the problem, which is caused by several reasons, namely:

1. Standard
   The standard that is the cause of mixing packing occurs when the delivery of goods and the number of orders specified, can be divided into 2 causes, namely:
   a. 1 skid above 0.5 m2
      Standard shipping of goods originating from the supplier has a limit of conditions which require that 1 skid / pallet delivery has a height above 0.5m2, the reason for this is due to the factor imposing of the wrong standardization.

b. Joining Some Part
   Delivery of the number of parts sent from the supplier is based on the number of orders from the customer, namely TMMIN. The number of parts ordered is sometimes not up to the number of provisions for standardized skid / pallet that have been determined, so that the part must be combined with other parts.

2. From Supplier
   Combining of goods that occur can be caused by the suppliers themselves, for example:
   a. Find the Easiest Way to Compile Part
      In the delivery of goods that occur often the supplier determines the level of efficiency in order to reduce excess expenditure (Cost Down) or other possibilities is the ignorance of suppliers of different types of line / conveyance build-up
   b. Run the Program
      The program in shipping goods from suppliers to customers is a program that has been arranged. But in the program settings there are abnormalities that can be found in the results of the shipment
3. Secure of Goods
   The safety factor in shipping an item is one of the causes of mixing goods, but the security factor is not effective in the results, some of the reasons for the secure of goods are:
   a. Skid less 0.5 m2
      Sending items with a height limit that is less than standard is an action that can cause the part to become Not Good (NG)
   b. Stack of Skid
      Skid / pallet stacking that is wrong or over the procedure limit can cause the part to become Not Good (NG)
4. Cost
   Another unavoidable factor is the cost factor, the cost factor that occurs here is to reduce the cost (Cost Down) of these parts combined with other parts, for example:
   a. Cheaper
      By not separating parts that do not match the line / conveyance, different parts become one in one skid.

Because and the consequences of mixing packing are obtained from the results of interviews and discussions with work mentors and work colleagues who show that there are problems with mixing packing. The results of the Fishbone diagram explain the causes and consequences of mixing packing that cannot be controlled. These effects have a negative effect or are considered not efficient both in the process of dismantling and returning the box to the supplier. The process that occurs can be included in the category of Concept of Toyota 7 Waste, namely:

a. Waste of Waiting (Time on Hand)
   The part to be delivered to the production line must wait for the process of sorting the parts according to line / conveyance first on the button pass, so that the activity is considered as waste of waiting
b. Waste in Conveyance
   The part transport process that occurs is sometimes different from the transportation that will be carried out, so that the part must wait for other transportation to be transported even though the part is still in the same cycle
c. Waste of Processing
   Processing sorting items on the button on the process of sorting items on the button pass is considered not efficient so that these activities can be categorized as waste of processing

By knowing the causes and consequences as well as the concept of Toyota 7 Waste these activities can be eliminated gradually through the process that will be described.

4.4.2. Data Retrieval

Data retrieval carried out by the author was carried out to coincide with the division of the eastern and western zones in the Button Pass Department. This data collection was carried out to coincide on June 15, 2019.

The purpose of the author to take data in the division of the eastern and western zones on the Button Pass aims to retrieve data on the names of suppliers that combine routes / conveyances in one skid / pallet. The data is filled if you find the conveyance mixed in 1 skid, the data taken then can be asked to the staff who set the separation of the Button Pass then the conveyance you want to separate will be reviewed later. So that in 1 different skid it can be separated into several different skids but in each one of these skids has its own route / conveyor. The data has a template that can be seen in Table 4.3. Template List Unpacking

Table 4.3. Template List Unpacking

No	Cycle	Zone	Conveyance	Supplier Code	Supplier Name	Unique Code	Checklist		
							Ada	Barat	Timur

Information:

Cycle: Write down the cycle of 18 cycles

Zone: The zone that is being addressed

Conveyance: Conveyance mixed in 1 skid / pallet

Ada: check if in the skid you want to split there are other skids that you want to make one

Barat & Timur: check where usually the skid is located

The author's stable data is data from the first cycle until the 9th cycle, the data taken is enough to carry out the case study at a next stage. From some data that can be taken by the author can be seen through the Table 4.4. List Mixing Packing

Table 4.4. Table List Mixing Packing

No	Cycle	Zone	Conveyance	Supplier Code	Supplier Name	Unique Code	Checklist		
							Ada	Barat	Timur
1	1	Timur	F & G	0003-3	Sugity	F = 410	V		V
						G = 765D	X	V	
						G = 408C	X	V	
						F = 409C	V		V
						F = 411C	V		V
2	2	Timur	Z & Y	5005-1	ATI	Y = 48C	V	V	
						Z = 199H	V	V	
						Z = 197H	V	V	
						Z = 200H	V	V	
						B = 2264	X		V
						B = 197C	X		V
						Z = 198H	V	V	
						Y = 219C	V	V	
						Y = 220C	V	V	
3	2	Timur	F & A	5004-1	Gunasena	F = 364C	V	V	
						F = 317H	V	V	
						A = 324C	V		V
						A = 325C	V		V
						A = 192C	V		V
						A = 194C	V		V
						A = 275H	V		V
						A = 191C	V		V
						A = 912C	V		V

Continue Table 4.4. List Mixing Packing

No	Cycle	Zone	Conveyance	Supplier Code	Supplier Name	Unique Code	Checklist		
							Ada	Barat	Timur
4	2	Timur	D & A	0003-5	Sugity	A = 307H	X		V
						A = 309H	X		V
						D = 296J	V		V
						D = 767J	V		V
						D = 295J	V		V
						D = 770J	V		V
						D = 442J	V		V
						D = 294J	V		V
						D = 299J	V		V
5	2	Timur	E & C	5365-1	Tokai	E = 530C	X	V	
						C = 152C	V		V
						C = 319C	V		V
						C = 318C	V		V
						C = 2477	V		V
						C = 074J	V		V
						C = 075J	V		V
6	3	Timur	D & F	5498-1	API	D = 506C	V		V
						F = 643C	X		V
						F = 642C	X		V
						D = 502C	V		V
						D = 295J	V		V
						F = 560H	X		V
7	3	Timur	G, F & C	0003-1	Sugity	G = 395H	X	V	
						F = 419C	V		V
						F = 306D	V		V
						F = 305D	V		V
						F = 376H	V		V
						C = 401H	X	V	
						G = 440C	X	V	
						F = 469H	X		V
						G = 378H	X	V	
						C = 401H	X	V	

Continue Table 4.4. List Mixing Packing

No	Cycle	Zone	Conveyance	Supplier Code	Supplier Name	Unique Code	Checklist		
							Ada	Barat	Timur
8	4	Timur	G & F	0003-1	Sugity	G = 765D	X	V	
						F = 410C	V		V
						F = 409C	V		V
						F = 411C	V		V
9	6	Timur	A & F	5008-1	Futaba	A = 264C	X		V
						F = 396C	V		V
						F = 394C	V		V
						A = 266C	X		V
						A = 262C	X		V
10	6	Timur	A & D	5033-1	Ichikoh	A = 865D	V		V
						D = 863D	X		V
						D = 869D	X		V
						A = 859D	V		V
11	7	Timur	A & C	5024-1	Autocomp	A = 269K	X		V
						C = 042E	V		V
						C = 305K	V		V
						C = 231K	V		V
12	8	Timur	C & F	0003-1	Sugity	C = 410H	X		V
						C = 399H	X		V
						F = 235A	V		V
						F = 347A	V		V
						C = 398H	X		V
13	8	Timur	C & E	5024-1	Autocomp	C = 101K	V		V
						E = 265K	V	V	
						C = 227K	V		V
						C = 018E	V		V
						C = 041E	V		V
						C = 222K	V		V
						C = 242K	V		V
						C = 236K	V		V

Continue Table 4.4. List Mixing Packing

No	Cycle	Zone	Conveyance	Supplier Code	Supplier Name	Unique Code	Checklist		
							Ada	Barat	Timur
14	9	Timur	A & D	0003-5	Sugity	A = 307H	X		V
						D = 295J	V		V
						D = 300J	V		V
						D = 442J	V		V
						D = 296J	V		V
						D = 770J	V		V
						D = 300J	V		V
						D = 295J	V		V
						A = 309H	X		V
						A = 352C	X		V
15	9	Timur	A & F	5008-1	Futaba	A = 902D	X		V
						F = 395C	V		V
						F = 397C	V		V
						A = 906D	V		V

After the author gets the data from the Unpacking List in the form of data on the name of the supplier and the parts that are combined in one skid, the author goes to the next step which is searching for line addresses on each unique no on the combined skid and volume on each box that transports the part.

The purpose of collecting the data line address is to find out the number of matches on each shelf for each initial unique number that will be addressed, efficiency in one initial skid and the order of the initial frequency before the actual data retrieval process. In taking some of this data, it using data that has been collected, so that after getting the data the author collects data back for data compatibility.

Based on the overall data that has been taken, the author reselects the data that can be used provided that in one skid mixed the parts have different parts, and between one part it once has one skid that can hold that part. And what will be taken is the part that will be removed and become a skid within the specified efficiency limit.

In retrieving these data the authors get a match of the selection results of the Auto Plastik Indonesia supplier in cycle 3 of one D & F combined skid that wants to be separated is the conveyance F and Sugity Creatives in cycle 8 of a combined C & F skid that want to be separated is conveyance C, from the results the author takes the data part that wants to be separated in one day to be made a separate skid.

From these data get the selection results that can be seen in Tables 4.5. Auto Plastik Indonesia Part and Tables 4.6. Sugity Creatives Part

Table 4.5. Auto Plastik Indonesia Before

Supplier Name	Supplier Code	Removed Part			
Auto Plastic Indonesia	5498-1	F			
Unique No.	Part Address	Total Box/Day	Volume Box (m3)	Total Vol. Box/Day	Total Vol. Box /Cycle
2253	T1LH - T9	6	0,0438	0,26	3
560H	TRIM1- T25	28	0,0219	0,61	14
642C	TRIM1- T25	14	0,0219	0,31	7
643C	TRIM1- T25	16	0,0219	0,35	8
683C	JDT1 - T61	8	0,0116	0,09	4
706B	JDT1 - T59	2	0,0438	0,09	1
TOTAL		74		1,71	
ORDER FREQ Supplier				2	/2
Efficiency				0,855940	

Table 4.6. Sugity Creatives Before

Supplier Name	Supplier Code	Removed Part			
Sugity Creatives	0003-1	C			
Unique No.	Part Address	Total Box/Day	Volume Box (m3)	Total Vol. Box/Day	Total Vol. Box /Cycle
398H	SIP2R- I60	9	0,0438	0,39	2
399H	SIP2R- I60	35	0,0438	1,53	7
400H	SIP2R- I60	9	0,0438	0,39	2
401H	SIP2R- I60	35	0,0438	1,53	7
TOTAL		88		3,85	
ORDER FREQ Supplier				5	/5
Efficiency				0,7703124	

Based on these data the author takes some data that is assessed by the author as data that can meet the standardization of efficiency, can be seen also for other data such as the volume of each box, total volume box / day.

Based on the table, the data from the order of the initial supplier frequency and the initial total volume box / cycle still cannot be used as a guideline for the correctness of the data, so clarification of the data needs to be reviewed by looking at the frequency

of the rack according to whether or not data obtained without eliminating efficiency in one skid.

4.4.3. Inputting Data

The data that has been taken is then input and the results of these observations are made, with the intent and purpose of inputting the data is to compare the previous data with the data afterwards in the order of the initial frequency with the order of frequencies that have been determined based on the results of previous analysis and the results of efficacy in one skid.

In the representation, in each order the frequency of the box has a problem in the rack which will be sorted and the problems in standardization can be seen in efficiency.

Collecting data on the maximum order frequency limit with the shelf limit used in rack assembly by looking directly at the field will limit the maximum shelf, so the results in the total volume box / cycle can be seen as accurate in changing supplier order frequency data without ignoring the efficiency one such skid. The data can be seen in Tables 4.7. Auto Plastik Indonesia Current and Tables 4.8. Sugity Creatives Current

Tables 4.7. Auto Plastik Indonesia Current

Supplier Name	Supplier Code	Removed Part			
Auto Plastik Indonesia	5498-1	F			
Unique No.	Part Address	Total Box/Day	Volume Box (m3)	Total Vol. Box/Day	Total Vol. Box /Cycle
2253	T1LH - T9	6	0,0438	0,26	2
560H	TRIM1- T25	28	0,0219	0,61	10
642C	TRIM1- T25	14	0,0219	0,31	5
643C	TRIM1- T25	16	0,0219	0,35	6
683C	JDT1 - T61	8	0,0116	0,09	3
706B	JDT1 - T59	2	0,0438	0,09	1
TOTAL		74		1,71	
ORDER FREQ Supplier				3	/3
Efficiency				0,570627	

Tables 4.8. Sugity Creatives Current

Supplier Name	Supplier Code	Removed Part			
Sugity Creatives	0003-1	C			
Unique No.	Part Address	Total Box/Day	Volume Box (m3)	Total Vol. Box/Day	Total Vol. Box /Cycle
398H	SIP2R- I60	9	0,0438	0,39	2
399H	SIP2R- I60	35	0,0438	1,53	6
400H	SIP2R- I60	9	0,0438	0,39	2
401H	SIP2R- I60	35	0,0438	1,53	6
TOTAL		88		3,85	
ORDER FREQ Supplier				6	/6
Efficiency				0,641927	

Changes in order frequencies that occur in Auto Plastik Indonesia suppliers, which initially 2x order frequencies become 3x order frequencies that affect the increase in the total volume box / cycle with the efficiency limit still in accordance with the standard 0.570. Currently, to supply Sugity Creatives, the initial 5x order frequency becomes 6x order frequency which also affects the increase in the total volume box / cycle with the efficiency limit that is still in accordance with the standard 0.6

4.4.4. Data Result

The author summarizes the data used previously to describe the actual conditions if the conditions in which the different conveyances are combined are 1 skid which leads to this inefficiency. The table summarizes some of the data relating to the description of the skid at the Auto Plastik Indonesia supplier. The table can be seen in the Table 4.9. Current Condition Auto Plastik Indonesia

Table 4.9. Current Condition Auto Plastik Indonesia

Before (Auto Plastik Indonesia) (1 Day) (Conveyance D & F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/ Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
1	43	52129KK01000	288H	CH2 RH-C34	D	COVER FR BUMPER LWR	5498	1	AUTOPLASTIK INDONESIA	36	10	270	27	0,0784	2,1165	1	0,0784
2	43	538510K14000	331H	CH2 RH-C33	D	PAD FR WHEEL OPENING EXTENSION NO.1	5498	1	AUTOPLASTIK INDONESIA	36	20	280	14	0,0219	0,3064	1	0,0219
3	43	766210K22100	432J	CH2 RH-C33	D	MUDGUARD FR FENDER RH	5498	1	AUTOPLASTIK INDONESIA	36	8	272	34	0,0329	1,1172	1	0,0329
4	43	62111KK010C0	483C	SF4L - H6	D	BOARD COWL SIDE TRIM RH	5498	1	AUTOPLASTIK INDONESIA	36	4	144	36	0,0485	1,7471	1	0,0485
5	43	629300K16000	506C	CH1 RH-C10	D	DUCT ASSY QUARTER VENT RH	5498	1	AUTOPLASTIK INDONESIA	36	6	216	36	0,0438	1,5756	1	0,0438

Continue Table 4.9. Current Condition Auto Plastik Indonesia

Before (Auto Plastik Indonesia) (1 Day) (Conveyance D & F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/ Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
6	43	67913KK010C0	552C	SF4R-H8	D	PLATE DOOR SCUFF RH	5498	1	AUTOPLASTIK INDONESIA	36	4	144	36	0,0657	2,3635	1	0,0657
7	43	67917KK040C0	556C	SF4R-H8	D	PLATE RR DOOR SCUFF INSIDE RH	5498	1	AUTOPLASTIK INDONESIA	36	4	144	36	0,0657	2,3635	1	0,0657
8	43	766250K37000	630H	CH2RH-C34	D	MUDGUARD RR BODY RH	5498	1	AUTOPLASTIK INDONESIA	36	10	270	27	0,1281	3,4577	1	0,1281
9	43	766260K37000	631H	CH2RH-C34	D	MUDGUARD RR BODY LH	5498	1	AUTOPLASTIK INDONESIA	36	10	270	27	0,1281	3,4577	1	0,1281
10	43	766470K18000	632H	CH1RH-C10	D	SUPPORT RR BODY MUDGUARD RH	5498	1	AUTOPLASTIK INDONESIA	36	3	108	36	0,1281	4,6103	1	0,1281

Continue Table 4.9. Current Condition Auto Plastik Indonesia

Before (Auto Plastik Indonesia) (1 Day) (Conveyance D & F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/ Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
11	43	766480K18000	633H	CH1 LH-C14	D	SUPPORT RR BODY MUDGUARD LH	5498	1	AUTOPLASTIK INDONESIA	36	3	108	36	0,1281	4,6103	1	0,1281
12	43	766470K13000	712C	CH1 RH-C10	D	SUPPORT RR BODY MUDGUARD RH	5498	1	AUTOPLASTIK INDONESIA	36	4	144	36	0,0438	1,5756	1	0,0438
13	43	766480K13000	713C	CH1 LH-C13	D	SUPPORT RR BODY MUDGUARD LH	5498	1	AUTOPLASTIK INDONESIA	36	4	144	36	0,0438	1,5756	1	0,0438
14	43	672810K02000	2253	T1LH - T9	F	STOPPER BACK DOOR LWR RH	5498	1	AUTOPLASTIK INDONESIA	36	150	900	6	0,0438	0,2626	1	0,0438
15	43	73139KK020B0	560H	TRIM1-T25	F	COVER SEAT BELT ANCHOR	5498	1	AUTOPLASTIK INDONESIA	36	10	280	28	0,0219	0,6127	1	0,0219

Continue Table 4.9. Current Condition Auto Plastik Indonesia

No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/ Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
16	43	731390K010B0	642C	TRIM1-T25	F	COVER SEAT BELT ANCHOR	5498	1	AUTOPLASTIK INDONESIA	36	10	140	14	0,0219	0,3064	1	0,0219
17	43	731390K030B0	643C	TRIM1-T25	F	COVER SEAT BELT ANCHOR	5498	1	AUTOPLASTIK INDONESIA	36	10	160	16	0,0219	0,3501	1	0,0219
18	43	743480K100B0	683C	JDT1 - T61	F	HOLDER VISOR	5498	1	AUTOPLASTIK INDONESIA	36	100	800	8	0,0116	0,0925	1	0,0116
19	43	51927KK02000	706B	JDT1 - T59	F	GUIDE SPARE WHEEL	5498	1	AUTOPLASTIK INDONESIA	36	180	360	2	0,0438	0,0875	1	0,0438
													Total		7,6993	9	0,3245

From these data has 0.6 volume / cycle (m^3) in 2 skids, so that the number can be described as a condition of a describing skid when combined, can be seen through the Figure 4.4. Current Condition in 1 Skid

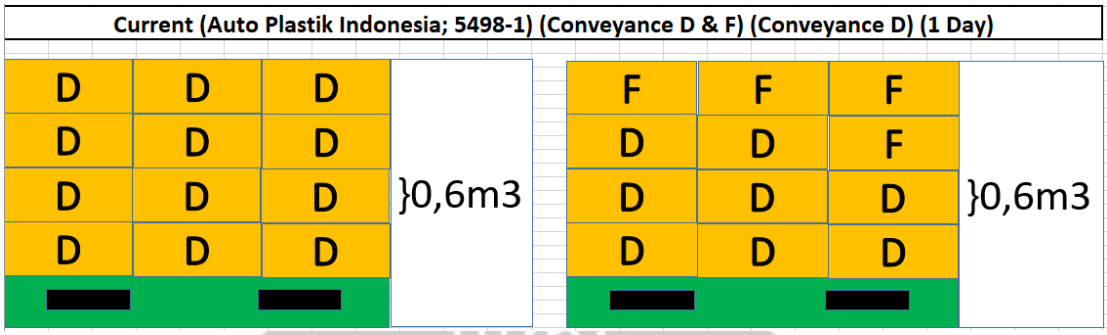


Figure 4.4. Current Condition in 1 Skid

For tables the results of the separation of skid which will be separated are divided into 2 skids, namely by conveyance D and conveyance F. Conveyance tables D can be seen through Tables 4.10. Auto Plastik Indonesia Conveyance D

Table 4.10. Auto Plastik Indonesia Conveyance D

After (Auto Plastik Indonesia) (1 Day) (Conveyance D)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	After	
																Vol/Cycle (box)	Vol/Cycle (m3)
1	43	52129KK01000	288H	CH2 RH-C34	D	COVER FR BUMPER LWR	5498	1	AUTOPLASTIK INDONESIA	36	10	270	27	0,07839	2,11653	1	0,0784
2	43	538510K14000	331H	CH2 RH-C33	D	PAD FR WHEEL OPENING EXTENSION NO.1	5498	1	AUTOPLASTIK INDONESIA	36	20	280	14	0,021884	0,306374	1	0,0219
3	43	766210K22100	432J	CH2 RH-C33	D	MUDGUARD FR FENDER RH	5498	1	AUTOPLASTIK INDONESIA	36	8	272	34	0,032858	1,117188	1	0,0329
4	43	62111KK010C0	483C	SF4L - H6	D	BOARD COWL SIDE TRIM RH	5498	1	AUTOPLASTIK INDONESIA	36	4	144	36	0,048529	1,74706	1	0,0485
5	43	629300K16000	506C	CH1 RH-C10	D	DUCT ASSY QUARTER VENT RH	5498	1	AUTOPLASTIK INDONESIA	36	6	216	36	0,043768	1,575639	1	0,0438

Continue Table 4.10. Auto Plastik Indonesia Conveyance D

After (Auto Plastik Indonesia) (1 Day) (Conveyance D)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	After	
																Vol/Cycle (box)	Vol/Cycle (m3)
6	43	67913KK010C0	552C	SF4R - H8	D	PLATE DOOR SCUFF RH	5498	1	AUTOPLASTIK INDONESIA	36	4	144	36	0,065652	2,363459	1	0,065652
7	43	67917KK040C0	556C	SF4R - H8	D	PLATE RR DOOR SCUFF INSIDE RH	5498	1	AUTOPLASTIK INDONESIA	36	4	144	36	0,065652	2,363459	1	0,065652
8	43	766250K37000	630H	CH2 RH-C34	D	MUDGUARD RR BODY RH	5498	1	AUTOPLASTIK INDONESIA	36	10	270	27	0,128064	3,457723	1	0,128064
9	43	766260K37000	631H	CH2 RH-C34	D	MUDGUARD RR BODY LH	5498	1	AUTOPLASTIK INDONESIA	36	10	270	27	0,128064	3,457723	1	0,128064
10	43	766470K18000	632H	CH1 RH-C10	D	SUPPORT RR BODY MUDGUARD RH	5498	1	AUTOPLASTIK INDONESIA	36	3	108	36	0,128064	4,610297	1	0,128064

Continue Table 4.10. Auto Plastik Indonesia Conveyance D

After (Auto Plastik Indonesia) (1 Day) (Conveyance D)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	After	
																Vol/Cycle (box)	Vol/Cycle (m3)
11	43	766480K18000	633H	CH1LH-C14	D	SUPPORT RR BODY MUDGUARD LH	5498	1	AUTOPLASTIK INDONESIA	36	3	108	36	0,128064	4,610297	1	0,1281
12	43	766470K13000	712C	CH1RH-C10	D	SUPPORT RR BODY MUDGUARD RH	5498	1	AUTOPLASTIK INDONESIA	36	4	144	36	0,043768	1,575639	1	0,0438
13	43	766480K13000	713C	CH1LH-C13	D	SUPPORT RR BODY MUDGUARD LH	5498	1	AUTOPLASTIK INDONESIA	36	4	144	36	0,043768	1,575639	1	0,0438
													Total		6,862791	5	0,2254

With new conveyance D has 0.956 volume / cycle (m^3) in single skid which can be described in skid which is separated by conveyance F. The image can be seen through the Figure 4.5. After Separation Conveyance D

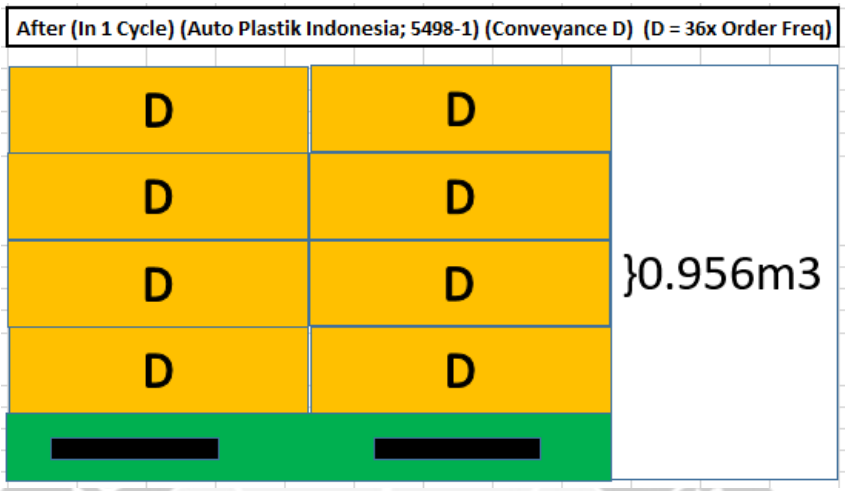


Figure 4.5. After Separation Conveyance D

For conveyance that wants to be separated into one skid from previously combined is conveyance F. On conveyance F can be seen through the Table 4.11. Auto Plastik Indonesia Conveyance F

Table 4.11. Auto Plastik Indonesia Conveyance F

After (Auto Plastik Indonesia) (1 Day) (Conveyance F)																									
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Pcs/ Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box (m3)	Total Vol Box/ Day (m3)	Current (Min - Max)			After (Min - Max)			Current		After		Actual Capacity Line	Leftover	Remark Activity
															Order Freq	Min	Max	Order Freq	Min	Max	Vol/Cycle (box)	Vol/Cycle (m3)	Vol/Cycle (box)	Vol/Cycle (m3)			
1	43	672810K02000	2253	T1LH-T9	F	STOPPER BACKDOOR LWR RH	5498	1	AUTOPLASTIK INDONESIA	150	900	6	0,0438	0,26266	36	1	3	3	1	5	1	0,0438	2	0,0875	4	2	-
2	43	731399KK020B0	560H	TRIM1-T25	F	COVER SEAT BELT ANCHOR	5498	1	AUTOPLASTIK INDONESIA	10	280	28	0,02219	0,612727	36	1	4	3	1	14	1	0,02219	10	0,2188	5	-5	Dibuat 1 Part Number 2 Baris
3	43	731390K010B0	642C	TRIM1-T25	F	COVER SEAT BELT ANCHOR	5498	1	AUTOPLASTIK INDONESIA	10	140	14	0,02219	0,30664	36	1	3	3	1	8	1	0,02219	5	0,1094	5	0	-

Continue Table 4.11. Auto Plastik Indonesia Conveyance F

After (Auto Plastik Indonesia) (1 Day) (Conveyance F)																								
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Pcs/ Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box (m3)	Total Vol Box/ Day (m3)	Current (Min - Max)			After (Min - Max)			Current		After		Actual Capacity Line	Leftover	Remark Activity
															Order Freq	Min	Max	Order Freq	Min	Max	Vol/Cycle (box)	Vol/Cycle (m3)	Vol/Cycle (box)	Vol/Cycle (m3)			
4	43	731390K030B0	643C	TRIM1-T25	F	COVER SEAT BELT ANCHOR	5498	1	AUTOPLASTIK INDONESIA	10	160	16	0,02219	0,35001	36	1	3	3	1	9	1	0,02199	6	0,13133	5	-1	Magucu Supply dengan layer atas part 948D

Continue Table 4.11. Auto Plastik Indonesia Conveyance

After (Auto Plastik Indonesia) (1 Day) (Conveyance F)																									
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Pcs/Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Current (Min - Max)			After (Min - Max)			Current		After		Actual Capacity Line	Leftover	Remark Activity
															Order Freq	Min	Max	Order Freq	Min	Max	Vol/Cycle (box)	Vol/Cycle (m3)	Vol/Cycle (box)	Vol/Cycle (m3)			
5	43	743480K100B0	683C	JDT1-T61	F	HOLDER VISOR	5498	1	AUTOPLASTIK INDONESIA	100	800	8	0,01116	0,09225	36	1	3	3	1	6	1	0,01116	3	0,0347	2	-1	Stacking 3 Tumpuk
6	43	51927KK02000	706B	JDT1-T59	F	GUIDE SPARE WHEEL	5498	1	AUTOPLASTIK INDONESIA	180	360	2	0,04438	0,08875	36	1	3	3	1	3	1	0,04438	1	0,04438	4	3	-
												Total		1,18817					**Total**		3	0,08875	17	0,41588			

With new Conveyance F has the same volume is 0.625 volume / cycle (m^3) in 3 skids which can be described in a separate skid. The image can be seen through the Figure 4.6. After Separation Conveyance F

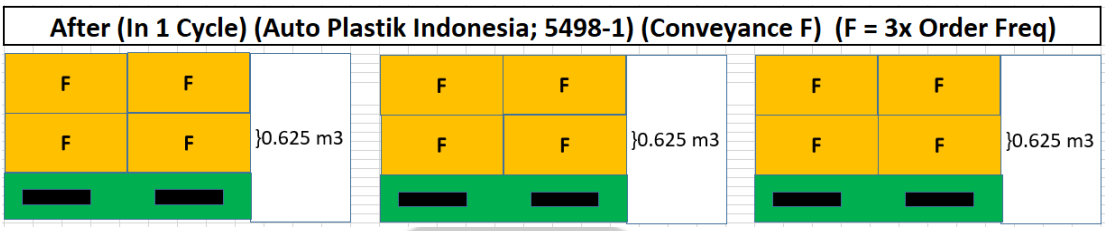


Figure 4.6. After Separation Conveyance F

At the supplier of Auto Plastics Indonesia, which has been calculated for 3x for the order frequency from 36x order frequency has a problem in the column volume / cycle (box) part after, the delivery capacity exceeds the limit in actual capacity line, with a lack of load on the shelf can be seen through column leftover. So that in such situation sorting for some of these parts is disturbed.

In these conditions the authors carried out a further review of parts that have a lack of capacity on these shelves, namely 560H, 643C & 683C. Further review was carried out by reviewing the actual checking of the existing shelves and applying several supporting methods or other solutions.

For part 560H, a solution can be made in the preparation of the part on the shelf made into 2 lines, in that condition the assembly rack in the third row does not have the conditions that allow the item to be placed, so the roller rack on the third layer is made before the arrangement takes place. The image can be seen in the Figure 4.7. Line Address TRIM1-T25 Shelf and Figure 4.8. Line Address TRIM1-T25 Shelf 3 layer

Figure 4.7. Line Address TRIM1-T25 Shelf

Figure 4.8. Line Address TRIM1-T25 Shelf 3 layer

Part 643C can be used using a method, which is using the maguci supply. Maguci supply is the replacement of the shelf layer, so that if the part is not enough for arrangement, the part is moved with another layer both at the top and bottom layers. For the clear information it can seen in Figure 4.9. Change Maguci Supply

Figure 4.9. Change Maguci Supply

Part 683C can be done using a solution that is by stacking 3 layers, so that the part lacks the load can be arranged into 1. The image can be seen through the Figure 4.8. Line Address TRIM1-T25 Shelf 3 layer. It shown in Figure 4.10. Improve 3 Stacking

Figure 4.10. Improve 3 Stacking

To supplier Sugity Creatives where the state of conveyance combining in one skid is summarized in some data relating to the description of the skid. The table can be seen in the Table 4.12. Current Condition Sugity Creatives

Table 4.12. Current Condition Sugity Creatives

Before (Sugity Creatives) (1 Day) (Conveyance C & F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
1	43	55041KK070C3	303J	JT2BL-L53	F	DOOR SUB-ASSY INSTRUMENT PNL BOX NO.1	0003	1	SUGITY CREATIVES	36	2	148	74	0,096962	7,175218	3	0,2909
2	43	55410KK030C0	305D	JT2BL-L61	F	PANEL ASSY INSTRUMENT CLUSTER FINISH	0003	1	SUGITY CREATIVES	36	2	120	60	0,065652	3,939098	2	0,1313
3	43	55410KK040C0	306D	JT2BL-L61	F	PANEL ASSY INSTRUMENT CLUSTER FINISH	0003	1	SUGITY CREATIVES	36	2	34	17	0,065652	1,116078	1	0,0657
4	43	55410KK070C3	307J	JT2BL-L61	F	PANEL ASSY INSTRUMENT CLUSTER FINISH	0003	1	SUGITY CREATIVES	36	2	148	74	0,065652	4,85822	3	0,197
5	43	768010K290A0	353D	SPT1-M38	F	GARNISH SUB-ASSY BACK DOOR OUTSIDE	0003	1	SUGITY CREATIVES	36	3	24	8	0,065652	0,525213	1	0,0657

Continue Table 4.12. Current Condition Sugity Creatives

Before (Sugity Creatives) (1 Day) (Conveyance C & F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
6	43	754420K01100	3541	T1LH - T8	F	PLATE BACK DOOR NAME 2.0	0003	1	SUGITY CREATIVES	36	50	50	1	0,011559	0,011559	1	0,011559
7	43	754590K01100	3543	T1LH - T8	F	MARK TAIL GATE G	0003	1	SUGITY CREATIVES	36	15	60	4	0,011559	0,046237	1	0,011559
8	43	754590K04100	3545	T1LH - T8	F	MARK TAIL GATE V	0003	1	SUGITY CREATIVES	36	15	45	3	0,011559	0,034678	1	0,011559
9	43	768010K290A1	354D	SPT1 - M38	F	GARNISH SUB-ASSY BACK DOOR OUTSIDE	0003	1	SUGITY CREATIVES	36	3	18	6	0,065652	0,39391	1	0,065652

Continue Table 4.12. Current Condition Sugity Creatives

Before (Sugity Creatives) (1 Day) (Conveyance C & F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
10	43	768010K290B0	355D	SPT1 - M38	F	GARNISH SUB-ASSY BACK DOOR OUTSIDE	0003	1	SUGITY CREATIVES	36	3	24	8	0,065652	0,525213	1	0,065652
11	43	768010K290B1	356D	SPT1 - M38	F	GARNISH SUB-ASSY BACK DOOR OUTSIDE	0003	1	SUGITY CREATIVES	36	3	18	6	0,065652	0,39391	1	0,065652
12	43	768010K290C0	359D	SPT1 - M38	F	GARNISH SUB-ASSY BACK DOOR OUTSIDE	0003	1	SUGITY CREATIVES	36	3	63	21	0,065652	1,378684	1	0,065652

Continue Table 4.12. Current Condition Sugity Creatives

Before (Sugity Creatives) (1 Day) (Conveyance C & F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
13	43	768010K290E0	360D	SPT1 - M38	F	GARNISH SUB-ASSY BACK DOOR OUTSIDE	0003	1	SUGITY CREATIVES	36	3	6	2	0,065652	0,131303	1	0,065652
14	43	55405KK06000	375H	JT2BR-L7	F	PANEL SUB-ASSY INSTRCSTR FINISH CTR	0003	1	SUGITY CREATIVES	36	6	12	2	0,065652	0,131303	1	0,065652
15	43	55405KK08000	376H	JT2BR-L7	F	PANEL SUB-ASSY INSTRCSTR FINISH CTR	0003	1	SUGITY CREATIVES	36	6	162	27	0,065652	1,772594	1	0,065652
16	43	75441010KB00	385D	T1LH - T8	F	PLATE BACK DOOR NAME KIJANG	0003	1	SUGITY CREATIVES	36	50	150	3	0,011559	0,034678	1	0,011559

Continue Table 4.12. Current Condition Sugity Creatives

Before (Sugity Creatives) (1 Day) (Conveyance C & F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
17	43	55618KK03000	398H	SIP2R-I60	C	HOLDER INSTRUMENT PANEL CUP NO.1	0003	1	SUGITY CREATIVES	36	6	54	9	0,043768	0,39391	1	0,0438
18	43	55618KK04000	399H	SIP2R-I60	C	HOLDER INSTRUMENT PANEL CUP NO.1	0003	1	SUGITY CREATIVES	36	6	210	35	0,043768	1,531871	1	0,0438
19	43	55618KK05000	400H	SIP2R-I60	C	HOLDER INSTRUMENT PANEL CUP NO.1	0003	1	SUGITY CREATIVES	36	6	54	9	0,043768	0,39391	1	0,0438
20	43	55618KK06000	401H	SIP2R-I60	C	HOLDER INSTRUMENT PANEL CUP NO.1	0003	1	SUGITY CREATIVES	36	6	210	35	0,043768	1,531871	1	0,0438
21	43	55421KK03000	409C	JT2BR-L7	F	PANEL INSTRUMENT CLUSTER FINISH UPR	0003	1	SUGITY CREATIVES	36	6	84	14	0,065652	0,919123	1	0,0657

Continue Table 4.12. Current Condition Sugity Creatives

Before (Sugity Creatives) (1 Day) (Conveyance C & F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
22	43	55421KK05000	410C	JT2BL-L61	F	PANEL INSTRUMENT CLUSTER FINISH UPR	0003	1	SUGITY CREATIVES	36	6	30	5	0,065652	0,328258	1	0,0657
23	43	55421KK07000	411C	JT2BR-L7	F	PANEL INSTRUMENT CLUSTER FINISH UPR	0003	1	SUGITY CREATIVES	36	6	60	10	0,065652	0,656516	1	0,0657
24	43	55421KK09000	412C	JT2BR-L7	F	PANEL INSTRUMENT CLUSTER FINISH UPR	0003	1	SUGITY CREATIVES	36	6	6	1	0,065652	0,065652	1	0,0657
25	43	55471KK010D0	417C	JT2BL-L53	F	ORNAMENT INSTR CLUSTER FINISH PANEL	0003	1	SUGITY CREATIVES	36	6	18	3	0,043768	0,131303	1	0,0438

Continue Table 4.12. Current Condition Sugity Creatives

Before (Sugity Creatives) (1 Day) (Conveyance C & F)																Current	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Vol/Cycle (box)	Vol/Cycle (m3)
26	43	55471KK010E0	418C	JT2BL-L53	F	ORNAMENT INSTR CLUSTER FINISH PANEL	0003	1	SUGITY CREATIVES	36	6	24	4	0,043768	0,175071	1	0,0438
27	43	55471KK030E1	419C	JT2BL-L53	F	ORNAMENT INSTR CLUSTER FINISH PANEL	0003	1	SUGITY CREATIVES	36	6	66	11	0,043768	0,481445	1	0,0438
28	43	55471KK040E0	421C	JT2BL-L53	F	ORNAMENT INSTR CLUSTER FINISH PANEL	0003	1	SUGITY CREATIVES	36	6	6	1	0,043768	0,043768	1	0,0438
29	43	55471KK060E1	422C	JT2BL-L53	F	ORNAMENT INSTR CLUSTER FINISH PANEL	0003	1	SUGITY CREATIVES	36	6	24	4	0,043768	0,175071	1	0,0438

Continue Table 4.12. Current Condition Sugity Creatives

Before (Sugity Creatives) (1 Day) (Conveyance C & F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
30	43	55474KK010D0	423C	JT2BL-L53	F	GARNISH INSTR CSTR FINISH PANEL NO.1	0003	1	SUGITY CREATIVES	36	5	20	4	0,011559	0,046237	1	0,0116
31	43	55474KK010E0	424C	JT2BL-L53	F	GARNISH INSTR CSTR FINISH PANEL NO.1	0003	1	SUGITY CREATIVES	36	5	35	7	0,011559	0,080914	1	0,0116
32	43	55474KK040E1	425C	JT2BL-L53	F	GARNISH INSTR CSTR FINISH PANEL NO.1	0003	1	SUGITY CREATIVES	36	5	75	15	0,011559	0,173388	1	0,0116
33	43	55474KK070E1	428C	JT2BL-L53	F	GARNISH INSTR CSTR FINISH PANEL NO.1	0003	1	SUGITY CREATIVES	36	5	30	6	0,011559	0,069355	1	0,0116

Continue Table 4.12. Current Condition Sugity Creatives

Before (Sugity Creatives) (1 Day) (Conveyance C & F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
34	43	55475KK010D0	429C	JT2BL-L53	F	GARNISH INSTR CSTR FINISH PANEL NO.2	0003	1	SUGITY CREATIVES	36	9	27	3	0,011559	0,034678	1	0,0116
35	43	55475KK030E1	431C	JT2BL-L53	F	GARNISH INSTR CSTR FINISH PANEL NO.2	0003	1	SUGITY CREATIVES	36	9	72	8	0,011559	0,092473	1	0,0116
36	43	55475KK070E1	434C	JT2BL-L53	F	GARNISH INSTR CSTR FINISH PANEL NO.2	0003	1	SUGITY CREATIVES	36	9	36	4	0,011559	0,046237	1	0,0116
37	43	636100K040B0	469H	JDT1 - N5	F	REGISTER ASSY AIR OUTLET RH	0003	1	SUGITY CREATIVES	36	10	1080	108	0,023118	2,496782	3	0,0694

Continue Table 4.12. Current Condition Sugity Creatives

Before (Sugity Creatives) (1 Day) (Conveyance C & F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
38	43	754730K01100	5218	T1LH - T8	F	PLATE BODY SIDE NAME 2.7	0003	1	SUGITY CREATIVES	36	15	15	1	0,011559	0,011559	1	0,0116
39	43	754280K17000	620H	T1LH - T8	F	PLATE FR DOOR NAME NO.2 V6	0003	1	SUGITY CREATIVES	36	50	50	1	0,011559	0,011559	1	0,0116
40	43	754410K13000	621H	T1LH - T8	F	PLATE BACK DOOR NAME TOYOTA	0003	1	SUGITY CREATIVES	36	50	50	1	0,011559	0,011559	1	0,0116
41	43	75441YP01000	692D	T1LH - T8	F	PLATE BACK DOOR NAME VENTURER	0003	1	SUGITY CREATIVES	36	60	60	1	0,011559	0,011559	1	0,0116
42	43	754410K07000	694C	T1LH - T8	F	PLATE BACK DOOR NAME INNOVA	0003	1	SUGITY CREATIVES	36	50	150	3	0,011559	0,034678	1	0,0116
43	43	754420K05000	695C	T1LH - T8	F	PLATE BACK DOOR NAME 2.4	0003	1	SUGITY CREATIVES	36	50	50	1	0,011559	0,011559	1	0,0116

Continue Table 4.12. Current Condition Sugity Creatives

Before (Sugity Creatives) (1 Day) (Conveyance C & F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
44	43	810800K010B0	736C	JDT1 - N5	F	LAMP ASSY INTERIOR ILLUMINATION NO.1	0003	1	SUGITY CREATIVES	36	5	40	8	0,17325	1,386	1	0,1733
45	43	55041KK050C4	772J	JT2BL-L53	F	DOOR SUB-ASSY INSTRUMENT PNL BOX NO.1	0003	1	SUGITY CREATIVES	36	2	54	27	0,096962	2,617985	1	0,097
46	43	55410KK050C5	774J	JT2BL-L61	F	PANEL ASSY INSTRUMENT CLUSTER FINISH	0003	1	SUGITY CREATIVES	36	2	56	28	0,065652	1,838246	1	0,0657

Continue Table 4.12. Current Condition Sugity Creatives

Before (Sugity Creatives) (1 Day) (Conveyance C & F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Current	
																Vol/Cycle (box)	Vol/Cycle (m3)
47	43	55410KK080C4	775J	JT2BL-L61	F	PANEL ASSY INSTRUMENT CLUSTER FINISH	0003	1	SUGITY CREATIVES	36	2	70	35	0,065652	2,297807	1	0,0657
48	43	55410KK100C5	777J	JT2BL-L62	F	PANEL ASSY INSTRUMENT CLUSTER FINISH	0003	1	SUGITY CREATIVES	36	2	2	1	0,065652	0,065652	1	0,0657
													Total		137,365	34	106,5

From these data has 1 volume / cycle (m^3) in 2 skids & 0.6 volume / cycle (m^3) in 1 skid, so that from these numbers can be described the conditions of the skid state when combined, can be seen through the Figure 4.11. Current Condition in 1 Skid

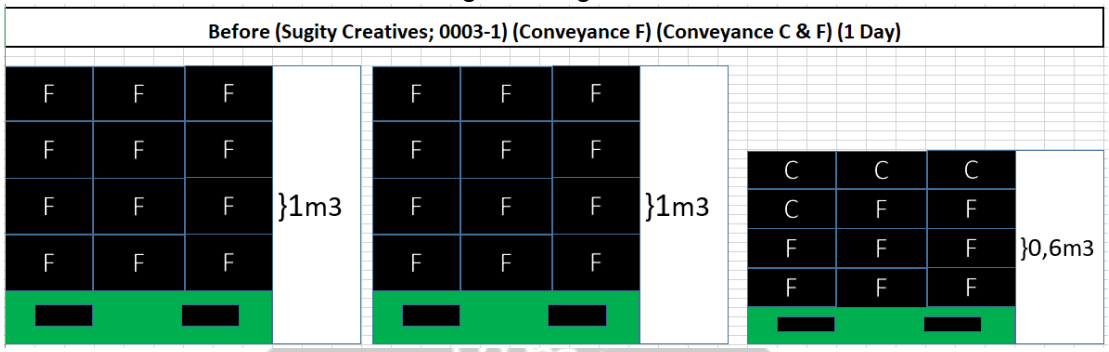


Figure 4.11. Current Condition in 1 Skid

For tables the results of the separation of skid that will be separated are divided into 2 skids, namely by conveyance F and conveyance C. Conveyance tables F can be seen through Table 4.13. Sugity Creatives Conveyance F

Table 4.13. Sugity Creatives Conveyance F

After (Sugity Creatives) (1 Day) (Conveyance F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	After	
																Vol/Cycle (box)	Vol/Cycle (m3)
1	43	55041KK070C3	303J	JT2BL-L53	F	DOOR SUB-ASSY INSTRUMENT PNL BOX NO.1	0003	1	SUGITY CREATIVES	36	2	148	74	0,096962	7,175218	3	0,2909
2	43	55410KK030C0	305D	JT2BL-L61	F	PANEL ASSY INSTRUMENT CLUSTER FINISH	0003	1	SUGITY CREATIVES	36	2	120	60	0,065652	3,939098	2	0,1313
3	43	55410KK040C0	306D	JT2BL-L61	F	PANEL ASSY INSTRUMENT CLUSTER FINISH	0003	1	SUGITY CREATIVES	36	2	34	17	0,06565163	1,116078	1	0,0657
4	43	55410KK070C3	307J	JT2BL-L61	F	PANEL ASSY INSTRUMENT CLUSTER FINISH	0003	1	SUGITY CREATIVES	36	2	148	74	0,06565163	4,85822	3	0,197
5	43	768010K290A0	353D	SPT1-M38	F	GARNISH SUB-ASSY BACK DOOR OUTSIDE	0003	1	SUGITY CREATIVES	36	3	24	8	0,06565163	0,525213	1	0,0657
6	43	754420K01100	3541	T1LH - T8	F	PLATE BACK DOOR NAME 2.0	0003	1	SUGITY CREATIVES	36	50	50	1	0,01155918	0,011559	1	0,0116

Continue Table 4.13. Sugity Creatives Conveyance F

After (Sugity Creatives) (1 Day) (Conveyance F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	After	
																Vol/Cycle (box)	Vol/Cycle (m3)
7	43	754590K01100	3543	T1LH - T8	F	MARK TAIL GATE G	0003	1	SUGITY CREATIVES	36	15	60	4	0,01155918	0,046237	1	0,0116
8	43	754590K04100	3545	T1LH - T8	F	MARK TAIL GATE V	0003	1	SUGITY CREATIVES	36	15	45	3	0,01155918	0,034678	1	0,0116
9	43	768010K290A1	354D	SPT1 - M38	F	GARNISH SUB-ASSY BACK DOOR OUTSIDE	0003	1	SUGITY CREATIVES	36	3	18	6	0,06565163	0,39391	1	0,067
10	43	768010K290B0	355D	SPT1 - M38	F	GARNISH SUB-ASSY BACK DOOR OUTSIDE	0003	1	SUGITY CREATIVES	36	3	24	8	0,06565163	0,525213	1	0,067
11	43	768010K290B1	356D	SPT1 - M38	F	GARNISH SUB-ASSY BACK DOOR OUTSIDE	0003	1	SUGITY CREATIVES	36	3	18	6	0,06565163	0,39391	1	0,067

Continue Table 4.13. Sugity Creatives Conveyance F

After (Sugity Creatives) (1 Day) (Conveyance F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	After	
																Vol/Cycle (box)	Vol/Cycle (m3)
12	43	768010K290C0	359D	SPT1 - M38	F	GARNISH SUB-ASSY BACK DOOR OUTSIDE	0003	1	SUGITY CREATIVES	36	3	63	21	0,06565163	1,378684	1	0,0657
13	43	768010K290E0	360D	SPT1 - M38	F	GARNISH SUB-ASSY BACK DOOR OUTSIDE	0003	1	SUGITY CREATIVES	36	3	6	2	0,06565163	0,131303	1	0,0657
14	43	55405KK06000	375H	JT2BR-L7	F	PANEL SUB-ASSY INSTRCSTR FINISH CTR	0003	1	SUGITY CREATIVES	36	6	12	2	0,06565163	0,131303	1	0,0657
15	43	55405KK08000	376H	JT2BR-L7	F	PANEL SUB-ASSY INSTRCSTR FINISH CTR	0003	1	SUGITY CREATIVES	36	6	162	27	0,06565163	1,772594	1	0,0657
16	43	75441010KB00	385D	T1LH - T8	F	PLATE BACK DOOR NAME KIJANG	0003	1	SUGITY CREATIVES	36	50	150	3	0,01155918	0,034678	1	0,0116

Continue Table 4.13. Sugity Creatives Conveyance F

After (Sugity Creatives) (1 Day) (Conveyance F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	After	
																Vol/Cycle (box)	Vol/Cycle (m3)
17	43	55421KK03000	409C	JT2BR-L7	F	PANEL INSTRUMENT CLUSTER FINISH UPR	0003	1	SUGITY CREATIVES	36	6	84	14	0,06565163	0,919123	1	0,0657
18	43	55421KK05000	410C	JT2BL-L61	F	PANEL INSTRUMENT CLUSTER FINISH UPR	0003	1	SUGITY CREATIVES	36	6	30	5	0,06565163	0,328258	1	0,0657
19	43	55421KK07000	411C	JT2BR-L7	F	PANEL INSTRUMENT CLUSTER FINISH UPR	0003	1	SUGITY CREATIVES	36	6	60	10	0,06565163	0,656516	1	0,0657
20	43	55421KK09000	412C	JT2BR-L7	F	PANEL INSTRUMENT CLUSTER FINISH UPR	0003	1	SUGITY CREATIVES	36	6	6	1	0,06565163	0,065652	1	0,0657
21	43	55471KK010D0	417C	JT2BL-L53	F	ORNAMENT INSTR CLUSTER FINISH PANEL	0003	1	SUGITY CREATIVES	36	6	18	3	0,04376775	0,131303	1	0,0438

Continue Table 4.13. Sugity Creatives Conveyance F

After (Sugity Creatives) (1 Day) (Conveyance F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	After	
																Vol/Cycle (box)	Vol/Cycle (m3)
22	43	55471KK010E0	418C	JT2BL-L53	F	ORNAMENT INSTR CLUSTER FINISH PANEL	0003	1	SUGITY CREATIVES	36	6	24	4	0,0437678	0,175071	1	0,043768
23	43	55471KK030E1	419C	JT2BL-L53	F	ORNAMENT INSTR CLUSTER FINISH PANEL	0003	1	SUGITY CREATIVES	36	6	66	11	0,0437678	0,481445	1	0,043768
24	43	55471KK040E0	421C	JT2BL-L53	F	ORNAMENT INSTR CLUSTER FINISH PANEL	0003	1	SUGITY CREATIVES	36	6	6	1	0,0437678	0,043768	1	0,043768
25	43	55471KK060E1	422C	JT2BL-L53	F	ORNAMENT INSTR CLUSTER FINISH PANEL	0003	1	SUGITY CREATIVES	36	6	24	4	0,0437678	0,175071	1	0,043768

Continue Table 4.13. Sugity Creatives Conveyance F

After (Sugity Creatives) (1 Day) (Conveyance F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	After	
																Vol/Cycle (box)	Vol/Cycle (m3)
26	43	55474KK010D0	423C	JT2BL-L53	F	GARNISH INSTR CSTR FINISH PANEL NO.1	0003	1	SUGITY CREATIVES	36	5	20	4	0,0115592	0,046237	1	0,011559
27	43	55474KK010E0	424C	JT2BL-L53	F	GARNISH INSTR CSTR FINISH PANEL NO.1	0003	1	SUGITY CREATIVES	36	5	35	7	0,0115592	0,080914	1	0,011559
28	43	55474KK040E1	425C	JT2BL-L53	F	GARNISH INSTR CSTR FINISH PANEL NO.1	0003	1	SUGITY CREATIVES	36	5	75	15	0,0115592	0,173388	1	0,011559

Continue Table 4.13. Sugity Creatives Conveyance F

After (Sugity Creatives) (1 Day) (Conveyance F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	After	
																Vol/Cycle (box)	Vol/Cycle (m3)
29	43	55474KK070E1	428C	JT2BL-L53	F	GARNISH INSTR CSTR FINISH PANEL NO.1	0003	1	SUGITY CREATIVES	36	5	30	6	0,0115592	0,069355	1	0,011559
30	43	55475KK010D0	429C	JT2BL-L53	F	GARNISH INSTR CSTR FINISH PANEL NO.2	0003	1	SUGITY CREATIVES	36	9	27	3	0,0115592	0,034678	1	0,011559
31	43	55475KK030E1	431C	JT2BL-L53	F	GARNISH INSTR CSTR FINISH PANEL NO.2	0003	1	SUGITY CREATIVES	36	9	72	8	0,0115592	0,092473	1	0,011559

Continue Table 4.13. Sugity Creatives Conveyance F

After (Sugity Creatives) (1 Day) (Conveyance F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	After	
																Vol/Cycle (box)	Vol/Cycle (m3)
32	43	55475KK070E1	434C	JT2BL-L53	F	GARNISH INSTR CSTR FINISH PANEL NO.2	0003	1	SUGITY CREATIVES	36	9	36	4	0,0115592	0,046237	1	0,011559
33	43	636100K040B0	469H	JDT1 - N5	F	REGISTER ASSY AIR OUTLET RH	0003	1	SUGITY CREATIVES	36	10	1080	108	0,0231184	2,496782	3	0,069355
34	43	754730K01100	5218	T1LH - T8	F	PLATE BODY SIDE NAME 2.7	0003	1	SUGITY CREATIVES	36	15	15	1	0,0115592	0,011559	1	0,011559
35	43	754280K17000	620H	T1LH - T8	F	PLATE FR DOOR NAME NO.2 V6	0003	1	SUGITY CREATIVES	36	50	50	1	0,0115592	0,011559	1	0,011559

Continue Table 4.13. Sugity Creatives Conveyance F

After (Sugity Creatives) (1 Day) (Conveyance F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	After	
																Vol/Cycle (box)	Vol/Cycle (m3)
36	43	754410K13000	621H	T1LH - T8	F	PLATE BACK DOOR NAME TOYOTA	0003	1	SUGITY CREATIVES	36	50	50	1	0,0115592	0,011559	1	0,011559
37	43	75441YP01000	692D	T1LH - T8	F	PLATE BACK DOOR NAME VENTURER	0003	1	SUGITY CREATIVES	36	60	60	1	0,0115592	0,011559	1	0,011559
38	43	754410K07000	694C	T1LH - T8	F	PLATE BACK DOOR NAME INNOVA	0003	1	SUGITY CREATIVES	36	50	150	3	0,0115592	0,034678	1	0,011559
39	43	754420K05000	695C	T1LH - T8	F	PLATE BACK DOOR NAME 2.4	0003	1	SUGITY CREATIVES	36	50	50	1	0,0115592	0,011559	1	0,011559
40	43	810800K010B0	736C	JDT1 - N5	F	LAMP ASSY INTERIOR ILLUMINATION NO.1	0003	1	SUGITY CREATIVES	36	5	40	8	0,17325	1,386	1	0,17325

Continue Table 4.13. Sugity Creatives Conveyance F

After (Sugity Creatives) (1 Day) (Conveyance F)																	
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Order Freq	Pcs/Kanban	Vol/ Day (Pcs)	Vol/ Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	After	
																Vol/Cycle (box)	Vol/Cycle (m3)
41	43	55041KK050C4	772J	JT2BL-L53	F	DOOR SUB-ASSY INSTRUMENT PNL BOX NO.1	0003	1	SUGITY CREATIVES	36	2	54	27	0,0969624	2,617985	1	0,096962
42	43	55410KK050C5	774J	JT2BL-L61	F	PANEL ASSY INSTRUMENT CLUSTER FINISH	0003	1	SUGITY CREATIVES	36	2	56	28	0,0656516	1,838246	1	0,065652
43	43	55410KK080C4	775J	JT2BL-L61	F	PANEL ASSY INSTRUMENT CLUSTER FINISH	0003	1	SUGITY CREATIVES	36	2	70	35	0,0656516	2,297807	1	0,065652
44	43	55410KK100C5	777J	JT2BL-L62	F	PANEL ASSY INSTRUMENT CLUSTER FINISH	0003	1	SUGITY CREATIVES	36	2	2	1	0,0656516	0,065652	1	0,065652
													Total		6,819689	4	0,293917

With the new conveyance F has 1 volume / cycle (m^3) in 1 skid & 0.7 volume / cycle (m^3) in 2 skids, which can be described in skid which is separated by conveyance C. The image can be seen through the Figure 4.12. After Separation Conveyance F

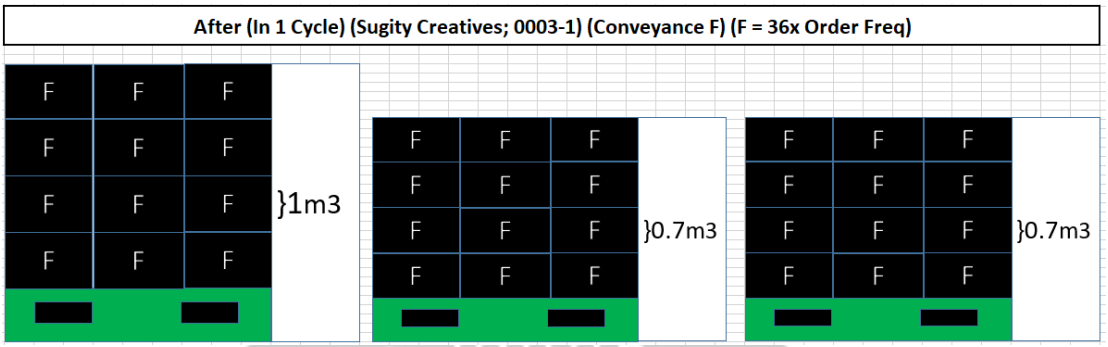


Figure 4.12. After Separation Conveyance F

For conveyance that wants to be separated into one skid from previously combined is conveyance C. On conveyance C can be seen through the Table 4.14. Sugity Creatives Conveyance C

Table 4.14. Sugity Creatives Conveyance C

After (Sugity Creatives) (1 Day) (Conveyance C)																									
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Pcs/Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box/ (m3)	Total Vol Box/Day (m3)	Current (Min - Max)			After (Min - Max)			Current		After		Actual Capacity Line	Leftover	Remark Activity
															Order Freq	Min	Max	Order Freq	Min	Max	Vol/Cycle (box)	Vol/Cycle (m3)	Vol/Cycle (box)	Vol/Cycle (m3)			
1	43	55618KK03000	398H	SIP2R-I60	C	HOLDER INSTRUMENT PANEL CUP NO. 1	0003	1	SUGITY CREATIVES	6	54	9	0,0438	0,3939	36	1	3	6	1	5	1	0,0438	2	0,0875	2	0	-
2	43	55618KK04000	399H	SIP2R-I60	C	HOLDER INSTRUMENT PANEL CUP NO. 1	0003	1	SUGITY CREATIVES	6	210	35	0,0438	1,5319	36	1	4	6	1	10	1	0,0438	6	0,2626	6	0	-

Continue Table 4.14. Sugity Creatives Conveyance C

After (Sugity Creatives) (1 Day) (Conveyance C)																									
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Pcs/Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Current (Min - Max)			After (Min - Max)			Current		After		Actual Capacity Line	Leftover	Remark Activity
															Order Freq	Min	Max	Order Freq	Min	Max	Vol/Cycle (box)	Vol/Cycle (m3)	Vol/Cycle (box)	Vol/Cycle (m3)			
3	43	55618KK05000	400H	SIP2R-I60	C	HOLDER INSTRUMENT PANEL CUP NO.1	0003	1	SUGITY CREATIVES	6	54	9	0,0438	0,3939	36	1	3	6	1	5	1	0,0438	2	0,0875	2	0	-

Continue Table 4.14. Sugity Creatives Conveyance C

After (Sugity Creatives) (1 Day) (Conveyance C)																									
No	Dock	Part No.	Kanban No.	Line Address	Route	Part Name	Supplier Code	Supplier Plant	Supplier Name	Pcs/Kanban	Vol/Day (Pcs)	Vol/Day (Box)	Vol Box (m3)	Total Vol Box/Day (m3)	Current (Min - Max)			After (Min - Max)			Current		After		Actual Capacity Line	Leftover	Remark Activity
															Order Freq	Min	Max	Order Freq	Min	Max	Vol/Cycle (box)	Vol/Cycle (m3)	Vol/Cycle (box)	Vol/Cycle (m3)			
4	43	55618KK06000	401H	SIP2R-I60	C	HOLDER INSTRUMENT PANEL CUP NO. 1	0003	1	SUGITY CREATIVES	6	210	35	0,0438	1,5319	36	1	4	6	1	10	1	0,04438	6	0,2626	6	0	-
												Total		1,5319					**Total**		1	0,0437668	6	0,2626207			

With new Conveyance C has a 0.700 volume / cycle (m^3) in 5 skids which can be described in a separate skid. The image can be seen through the Figure 4.13. After Separation Conveyance C

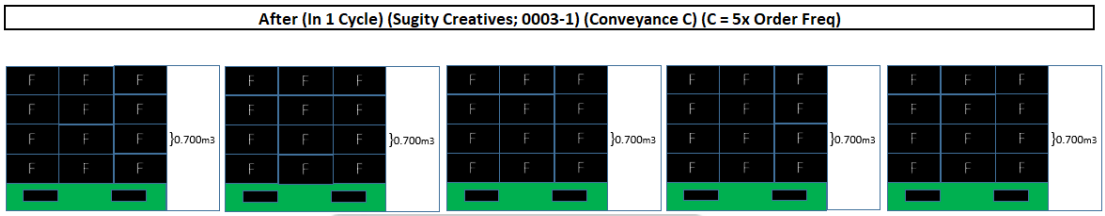


Figure 4.13. After Separation Conveyance C

In the Sugity Creatives supplier in replacing supplier frequency orders to 6x orders frequency from 36x order frequency there are no problems with order frequency as well as actual capacity line rack assembly, so it does not require either supporting methods or any solutions

CHAPTER 5

CLOSING

5.1. Conclusion

Based on the results of the analysis obtained conclusions, namely:

a. Problems with the results of observations at PT. Toyota Motor Manufacturing Indonesia is mixing goods from mixing packing suppliers.
b. The solution to this problem is to explain to the supplier that the mixed conveyance is separated by showing details of the mixed parts

5.2. Suggestion

Based on the results of the analysis obtained suggestions for suggestions, namely:

a. Recommendations from the Office Engineering Service convey to the PUD to consult on equitable conveyance, so that mixing packing does not occur
b. Using other methods such as layer setting, change position box, change maguci supply or quantity up if you find a problem that can be solved by methodology.
c. Advise the assembly to add or change the shape of the rack, so that neither count nor supporting methods are needed.

BIBLIOPGRAPHY