CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This chapter discusses about the introduction, overall ideas and concepts to the Total Productive Maintenance (TPM) and Overall Equipment Effectiveness (OEE). Besides, the background of the study, problem statements, objective of the study, and scope of the study will also be described in details in the sections below.

1.2 BACKGROUND OF STUDY

In a competitive market, the growing demand for quality as the most important factor for a company to survive in the global market is growing. Quality is important in determining the economic success of manufacturing companies. Total Quality Management (TQM) is an approach to improve the quality of goods and services delivered through the involvement of individuals at all levels and functions of the organization. Quality management practices also help improve in reducing scrap, rework and stabilize the production process. Thus, can reduce production costs and increase productivity.

Tan Chong Motor Assemblies Sdn. Bhd. (TCMA) was selected to be studied in this research. It is one of the largest national conglomerates involved in a myriad of business activities. The current activities of the Tan Chong Motor Assemblies Sdn. Bhd. (TCMA) are assembly and distribution of motor vehicles, provision after-sales services and motor related financial services.
This study is conducted by choosing the Assembly Shop Chassis line as a research. Assembly Chassis line has 2 shifts with 7.9 hours per shift, which means the total operation per shift is 474 minutes-based. They explained that they are facing a high probability of loss of production lines for machine damage stoppage.

Through the first visit to the company in accordance Assembly Shop Chassis line, the operator were observed that they could not read the air leak tester due to failure of reading and Chassis-Final conveyor cannot running very well. In addition, the chassis assembly line downtime loss is 10 to 20 minutes by the time available of 474 minutes per shift, therefore, the operating time was decrease to 4.22 per cent, and this is due to equipment failure affected from waiting and no raw materials. Downtime losses was reflected to low availability. The number of units produced is 50 units out of total potential targets of 60 units in every shift. So that, it shown that the performance is low by 83.3 percent. This is due to minor stoppage due to speed loss because the machine not running smoothly at stable speed. Losses of speed also reflected to low performance of equipment. There are also issues of quality of the process and the vehicle, the number of defects per shift is 5 units from 50 units produced per shift. Therefore, the quality of the product decreased to 10 percent because of the product did not meet the specifications.

Any number of factors leading to low production output with machine operating time low. The maintenance department has been struggling to make a countermeasure with equipment be tracked in a problem. They have done a monthly maintenance practices in the last 3 months; however, the results did not show any significant progress in the breakdown of machinery. Given this situation, there is a need to observe and study the causes of machine damage and suggest the most appropriate method for further improvement that can benefit the production process.

1.3 PROBLEM STATEMENT

From the observation made in the Assembly Shop Chassis line, there have a number of machine breakdown, line stoppage cases through the production, the productivity not achieve the target and also the low product quality and affect the
Overall Equipment Effectiveness (OEE). So that, this research is to study and analyze the existing of Overall Equipment Effectiveness (OEE) and to propose on how to improve the productivity by reduced the machine breakdown, decrease the defects and increase the quality of productivity.

1.4 OBJECTIVE OF STUDY

This research was carried out to:

- To identify and analyse the elements of Overall Equipment Effectiveness (OEE).
- To calculate the existing of Overall Equipment Effectiveness (OEE).
- To evaluate, analyse and proposed improvement of the revised Overall Equipment Effectiveness (OEE).

1.5 SCOPE OF STUDY

The project objective is narrowed down by performing scopes of study.

- A case study will be conducted at Tan Chong Motor Assemblies Sdn. Bhd. On Assembly Shop Chassis line area.
- The study will be conducted for a period of 3 months for the latest Overall Equipment Effectiveness (OEE).