5S IMPLEMENTATION AND PEOPLE INVOLVEMENT AT MUEHLBAUER TECHNOLOGIES SDN BHD.

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This report is submitted in accordance with the partial requirements of the
Universiti Teknikal Malaysia Melaka (UTeM) for the Degree of
Bachelor of Manufacturing Engineering
(Manufacturing Management)

By

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April 2011

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

TAJUK: **5S Implementation and People Involvement at Muehlbaeur Technologies Sdn. Bhd.**

SESI PENGAJIAN: 20010/11 Semester 2

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I hereby, declare this thesis entitled "5S Implementation and People Involvement at Muehlbaeur Technologies Sdn. Bhd." is the results of my own research except as cited in the reference.

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Author's Name   : ROZIANA BINTI ABU NASIR

Date   : 17-04-2011

APPROVAL

This report is submitted to the Faculty of Manufacturing Engineering of UTeM as a partial fulfilment of the requirements for the degree of Bachelor of Manufacturing Engineering (Manufacturing Management) with Honours. The member of the supervisory committee is as follow:

....
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ABSTRAK

Lima tiang kepada tempat kerja visual, biasanya di rujuk sebagai 5S (Sisih, Susun, Sapu, Seragam, Sentiasa Amal). 5S adalah pengorganisasian dan pengelolaan tempat kerja yang dijalankan secara beransur-ansur dan terancang. Proses 5S adalah program yang tersusun untuk melaksanakan pengorganisasian dan pengelolaan tempat kerja. Tempat kerja yang diurus dengan baik boleh mendorong manusia.5S meningkatkan keselamatan, kecekapan kerja, pengeluaran dan melahirkan rasa tanggungjawab. Projek ini menceritakan tentang perlaksanaan 5S di kilang pengeluaran, Muehlbaeur Technologies Sdn. Bhd. yang beroperasi memasang mesin dan menghasilkan *"carrier tape"*. Projek ini memfokus kepada perlaksanaan 5S dengan penglibatan dari pekerja-pekerja. Semasa perlaksanaan program, banyak aktiviti di jalankan. Kesan dari perlaksanaan projek ini adalah mengurangkan senarai barang, keberkesanan tempat kerja di gunakan, mengurangkan masa mencari barang, mengurangkan tumpahan minyak/air, mengurangkan ketidakstabilan, meningkatkan keadaan bekerja, mengurangkan kemalangan di tempat kerja, meningkatkan disiplin dan membina hubungan yang baik antara pekerja-pekerja.

ABSTRACT

The five pillars of the visual workplace, commonly referred to as the 5S (Sort, Simplify, Sweep, Standardize, and Sustain).5S is a process of work place organization and housekeeping which is carriedout gradually and systematically.The 5S method is a structured program to implement workplace organisation andstandardisation. A well organised workplace motivates people, both on the shop floor aswell as others. 5S improves safety, work efficiency, improves productivity andestablishes a sense of ownership.This project illustrates about 5S implementation in manufacturing company, Muehlbaeur Technologies Sdn. Bhd. which assemble machines and produce carrier tape. The project is focused on implementing 5S with contribution from the employees. During implementation, lot of activity has been done. From this project, the impact of 5S implementation are reduce inventory, efficient on workplace usage,reduce time for searching spare part, reduce oil / water / air spilled, reduce unstabilization,preventive of machine function, cleaning and checking machine condition,improve working condition, reduce work accident, increase discipline, follow procedure,and better relationship among employee.

ACKNOWLEDGEMENT

In the name of Allah, The Most Gracious and The Most Merciful.

First and foremost, I want thank to Almighty God for reasons too numerous to mention. Next, I would like to express my greatest appreciation to my supportive supervisor, Ir. Dr. Puvanasvaran a/l Perumal for his supervision and encouragement to pursue to this project and also for the invaluable guidance he has provided.

I also would like to convey my biggest thanks to all Muehlbaeur Technologies Sdn. Bhd. for supporting me throughout this project. The knowledge and experience that I have gained from all of you will not be forgotten. I am also obliged to everyone who had directly and indirectly involve through the contributions of ideas and professional opinions.

DEDICATION

For my beloved mum and father

Jamaliah Binti Puteh

Abu Nasir Bin Ahmad

And for my supervisor, lecturers, family and friends for their loves and supports

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AMT   -   Advanced Manufacturing Technologies

e.g.   -   *Exempli gratia* (for example)

et. al   -   *Et alii* (and others)

etc.   -   *Et cetera* (and other things)

FYP   -   Final Year Project

i.e.   -   *Id est* (it is)

ISO   -   International Organization for Standardization

JIT   -   Just-In-Time

Kg   -   Kilogram

PSM   -   Projek Sarjana Muda

SME   -   Small Medium Enterprise

TPS   -   Total Production System

TQM   -   Total Quality Management

UK   -   United Kingdom

USA   -   United State of America

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CHAPTER 1

INTRODUCTION

1.1 Introduction

These chapter overall discuss the introduction of the 5-S implementation in the Muehlbaeur Technologies Sdn. Bhd. In this part, the briefing of the background, problem statement, objectives, scopes and the expected of the project are discussed.

1.2 Background of the Project

The 5-S framework was originally developed by just-in-time expert and international consultant Hiroyuki Hirano. The 5S framework is an extension of Hirano's earlier works on just-in-time production systems. The 5-Ss represent a simple "good housekeeping" approach to improving the work environment.

In general, the 5S approach includes the controls the work floor conditions rather than the worker's behavior. It is relatively inexpensive for the company to implement. It makes the worker's job easier and safer. It promotes daily activity for continuous improvement. It fosters efficiency and productivity while improving work flow. It encourages a proactive approach that prevents problems and waste before they occur. It provides a practical method for dealing with the real problems that workers face every day. And it fits with a facility's other efforts, such as total preventive maintenance, just-in-time manufacturing, pollution prevention, safety initiatives, and lean manufacturing efforts.

The goal for this project is to let people realize about the importance of good housekeeping, especially in manufacturing plan. Many people think that housekeeping should be done by housewives at home, and cleaners at work. They do not realize that they, too, play an important part in keeping their houses/workplaces clean. More importantly, they do not know how much they can gain for themselves by just practicing good housekeeping. Whether work in an office, the factory, the warehouse, the laboratory or any other place, housekeeping is relevant to every people.

Good housekeeping is important as it can create an environment in which even minor abnormalities and mistakes will be obvious. Plus, it will produce an easily managed, safer and more pleasant environment. In industry, a clean, well-ordered and attractive work environment sets can help encourages tidy work habits in employees. It helps reduce fatigue. It will promotes good worker-management relations. It also gives a lift to morale, which is reflected in the quality of production and overall efficiency. It can stimulates efforts to improve productivity through better use of people, space, equipment, time and materials

Good housekeeping is also a good advertisement for every company. It is because customers and clients will have more confidence in an organization when their works is being carried out efficiently in clean, pleasant, well-ordered work surroundings. Good housekeeping portray professionalism and efficiency to others. It can be expected that the standards displayed in the environment will be reflected in the product

The more important reason why good housekeeping matter is it makes the undertaking a safer place to work in. Good housekeeping is a main factor in preventing accidents. Majority of all work accidents are caused during the handling of goods or materials, and by people falling, being hit by falling objects, or striking against objects in the workplace. All these causes can be reduced by good housekeeping practices. In fact, good housekeeping is the only cure for hundreds of accidents that occur.

Typical examples of poor housekeeping that lead to these accidents are:

- Excessive material, waste or chips in the working area.
- Congested aisles.
- Tools left on machines.
- Waste containers overflowing.
- Lockers and workrooms in disorder.
- Acids in open containers.
- Broken glass.
- Electric leads or air lines across aisles.
- Dirty light fittings, windows and skylights.

We can stop accidents through good housekeeping. Where housekeeping is bad, fire is a constant hazard. It can be caused by many housekeeping problems, such as oil-soaked rags and clothing igniting from spontaneous combustion and many more. Poor housekeeping can also lead to infestation by pests such as rodents and cockroaches and create serious health risks.

1.3   Problem Statement

For a company to implement and practice good housekeeping, it cannot be accomplished either casually or in a day or two. The whole company must take part in order ensure the program is success.

According to Herbert (1943), in his opinion, good housekeeping comprises the following elements (these are not necessarily in order of importance):

1. Men and machines should be so placed as to provide the easiest and most efficient flow of production.
2. Operations should be so located that the health hazards, possibly associated with one will not imperil workers on another task.
3. Structural and operational arrangements should be made to permit easy traffic of men and materials within the plant.

4. Adequate space should be allotted for the storage of movable equipment and tools not in current use.

5. A safe water supply and proper sewerage and sewage disposal facilities must be provided.

6. Definite janitor service should be furnished for the regular cleaning of sanitary facilities, locker and eating rooms, windows, lighting fixtures, and other parts of the interior of the plant.

7. Proper maintenance of all equipment must be enforced; this will become a relatively easy matter if the other items are carried out in a conscientious manner.

1.4   Objective of the study

The objectives of this project are:

1. To study and identify problems at work area.
2. To implement 5-S practices among the employees.
3. To measure the improvement after implementing 5-S practices

1.5   Scope of the Project

This project will thoroughly focus on implementing 5-S in work area of Muehlbaeur Technologies Sdn. Bhd. and indirectly improve the employees' manners. This condition will create win-win situation between employer and employees.

1.6   Outline of the Project

This report writing consists of three chapters for Final Year Project (FYP) 1. Chapter 1 is describes about introduction; which is includes the project background, problem statement, objective of the project and scope for the project. Then in Chapter 2, it will

stress on the literature review of related issues and in Chapter 3, it will highlighted more towards the methodology of the project.

For the next phase of Final Year Project, which is in FYP 2, it will cover three more chapters. Chapter 4 is about the result and analysis of the implementations that have been done, while in Chapter 5 content discussion by referring the whole implementation processes and results. Lastly in Chapter 6, it will state the conclusion and recommendation in order to improve the implementation process in next time.

CHAPTER 2
LITERATURE REVIEW

2.1   Introduction

This chapter will proceeds with referenced review from the relevant literature. It is included the details related to the information and history which already done by other people that involved in implementing 5S, previously. It also will explain about the methodology and the philosophy for implementing 5S.

2.2   Introduction of 5S

5S initially based on the Japanese acronyms of *seiri* (organization), *seiton* (neatness), *seiso* (cleaning), *seiketsu* (standardization) and *shitsuke* (discipline), is used as a platform for developing an integrated management system by the parallel use of total productive maintenance (TPM) (Bamber et al., 2000).

Osada (1991) refers to 5S as the five keys to a total quality environment. 5S is a system to reduce waste and optimize productivity and quality through maintaining an orderly workplace and using visual cues to achieve more consistent operational results. The practice of 5S aims to embed the values of organization, neatness, cleaning, standardization and discipline into the workplace basically in its existing configuration, and it is typically the first lean method implemented by firms.

Kobayashi et al. (2008) make a distinction between 5S as a philosophy or way and 5S as a technique or tool by comparing the frameworks provided by Osada (1991) and Hirano (1995) respectively. From their study, they conclude that 5S tends to be

recognized as a philosophy in Japan, but in the other hand it is likely to be considered as a technique or tool in the United Kingdom and United State of America. Osada (1991) views 5S as a strategy for organizational development, learning and change, whereas Hirano (1995) considers 5S to be an industrial formula that differentiates a company from its competitors.

A common definition of 5S in the West is housekeeping (Becker, 2001; Chin and Pun, 2002; Ahmed and Hassan, 2003; Eckhardt, 2001). In the West both 5S and TPM are sometimes disregarded or at least underutilized (Douglas, 2002). A framework of applying 5S within a business (as appose to a personal philosophy of way of life) was first formalized in the early 1980s by Takashi Osada (Ho et al., 1995).

The practice of 5S aims to embed the values of organization, neatness, cleaning, standardization and discipline into the workplace (Osada, 1991). In Japan the 5S practice was initiated in the manufacturing sector and then extended to other industries and services sector. The Toyota Production System provides a well-known example of 5S principles in practice, the early versions were based on 3-S this, became 4-S (Ohno, 1988).

Boeing in the USA pursues 5S as a world-class strategy (Ansari and Modarress, 1997). Even with these prestigious and complex examples it appears that many researchers and practitioners have difficulty going beyond the simplest 5S concept. This is suggested by Hyland and others where they believe that Australian manufacturing firms have only a basic perception of the importance and the potentiality of 5S (Hyland et al., 2000). These authors found of ten continuous improvement tools they investigated the usage and perceived importance of 5S was lowly ranked.

Therefore, we can say that there is no consensus about the scope of 5S. Much of Western literature still acknowledges 5S as housekeeping (Ahmed and Hassan, 2003; Becker, 2001; Chin and Pun, 2002; Eckhardt, 2001). However, 5S is more frequently framed in the "lean" philosophy (James-Moore and Gibbons, 1997; Hines et al., 2004; Kumar et al., 2006), since it encourages workers to improve their working conditions