FINAL PROJECT REPORT

ERGONOMICS IN INDUSTRY HYGIENE

A project report presented in partial fulfilment of the requirement for the award of Bachelor in Mechanical Engineering (Honours)

MARA University of Technology

Shah Alam

Prepared by:

MOHAMAD MUAZIR MOHD SHAKRI

FACULTY OF MECHANICAL ENGINEERING MARA UNIVERSITY OF TECHNOLOGY SHAH ALAM SELANGOR DARUL EHSAN

NOVEMBER 1999

CONTENT	PAGE
PREFACE	
ACKNOWLEDGEMENT	
ABSTRACTS	1
CHAPTER 1 - INTRODUCTION AND APPLICATIONS	
1.0 ERGONOMICS	3
1.1 INTRODUCTION AND APPLICATIONS	3
1.2 AREAS OF STUDYING ERGONOMICS	5
1.2.1 Physical aspects of the user - machine interface	6
1.2.2 Cognitive aspects of the user - machine interface	7
1.2.3 Workspace design and workplace layout	7
1.2.4 The physical environment	8
1.2.5 The psychological environment	9
1.2.6 Job design, selection and training	9
CHAPTER 2 - APPROACH AND MODELS IN ERGONOMICS	
2.0 APPROACH AND MODELS IN ERGONOMICS	11
2.1 HOW AND WHERE ERGONOMICS IS USED	11
2.2 MODELS AND APPROACHES IN ERGONOMICS	12
2.3 WORKSTATION ANALYSIS	14
2.3.1 Workstation analysis outline	16
2.3.2 The user	16
2.3.3 The machine	17
2.3.4 Workspace	18
2.3.5 Environment	19
2.3.6 Special questions	20
2.4 CAVEAT ON SYSTEMS AND WORKSTATION	
ANALYSES	21
2.5 PROCEDURES FOR DESIGNING EQUIPMENT AND	
WORKSPACE	23

ACKNOWLEDGEMENT

In the name of Allah S.W.T, The Most Gracious and Grateful. I praise HIM And HIS blessing on HIS noble Prophet Muhammad S.A.W, first, we give thanks to ALLAH who enable me to complete this final project in time.

Here, I would like to express my heartfelt gratitude and appreciation to Mr. Ismail Nasiruddin bin Ahmad who initiated and supervised this final project. His endless help and guidance throughout this final project have enable me to complete this final project.

I also grateful to **Dr Jalalluddin**, the Ergonomic Management of NIOSH for providing all the relevant information and guidance in carrying out my project.

I also would like to thank to *Mr. Abdul Halim*, the Technician of Faculty of Mechanical, *Miss Huzaimah Adnan, Mr. Sharif, Mr Azman, all technician in the workshop and* not forgotten to *Abang Shah* who took their time to give the information and help me wherever and whenever I needed the information for my project.

Finally, I would like to express my deepest gratitude to the lecturers, and staff of the Faculty of Mechanical Engineering, MARA University of Technology, my parents and to all my classmates and friends who have directly or indirectly involved in this final project.

Mohamad Muazir bin Mohd Shakri.

ABSTRACTS

This final report consist the research that has been done to find the factor that effected the uncomfortable in the workshop. This analysis is due to Ergonomics Hygiene where the studies is the workshop in the University of Technology MARA Shah Alam Selangor. Two types of analysis has been used to determine the condition in the workshop due to the four types of factor that is the temperature, sound, light and vibration. A general point of view is given to solve the uncomfortable in the workshop.

1.0 ERGONOMICS

1.1 INTRODUCTION AND APPLICATIONS

People spend most of their time engaged in the performance of tasks. Tasks are activities with specified goals, and may be paid or unpaid. Task are carried out in the home, at work, on the road, in leisure and sport, and on the battlefield. Thus a task may involve setting up and operating an industrial lathe, using a computer, digging a hole with a garden spade, or driving a motor car.

The tools and machines used in the performance of task must be suited to their users. Traditionally, tools and machines were made by their suited his exact purposes, rather than acquiring tools from a specialist maker. More recently, the design and manufacture of tools and machines has devolved to specialist and we have seen a rapid development in the engineering science and technologies as a reflection of this.

One consequence of this development, however is that the maker and the user of a tool are no longer the same person, and the maker must make assumptions about the user's characteristics in an attempt to achieve a satisfactory fit between user and product.