



De La Salle University- Dasmariñas
Dasmariñas, Cavite
COLLEGE OF ENGINEERING, ARCHITECTURE AND TECHNOLOGY
MECHANICAL ENGINEERING PROGRAM



MECHANIZED WHITEBOARD AND ERASER

In partial fulfillment of the requirements in
Research/Project Study
(MEET517k)

By:

Delag, Ron Mark O.
Gernan, John Vincent P.
Ramos, Joshua M.
Rodriguez, Abcde Ralph R.

MEE 51

Engr. Jorge B. Yasay
Instructor

March 18, 2011

ABSTRACT

Visual presentations are often use in discussions. The most conventional way is by utilizing a board that are capable of handling notations written by the lecturers, presenters.

This project study provides a design for a mechanically operated whiteboard that is equipped with an eraser. It is an integration of the writing surface and the eraser to make the work of the lecturers and presenters easier, faster and less tiresome. The essential parts of the board are the rollers and the eraser mechanism. There are two rollers, each one placed on either side of the board and are coupled to motors. The eraser mechanism is on the right side of the board (left side for the 2nd Prototype), placed close to the right roller and is also coupled to a high torque motor.

The mechanism operates in the principle of a scroll, in which the writing area of the board is rolled on rollers so it can be moved to the next writing space. The researchers used acetate as an improvised whiteboard material flexible enough so that it can be rolled on the rollers. With the eraser mechanism, the lecturer can choose if s/he wants to erase or retain the writings on the board. While scrolling, the writings from the board can be erased if desired by the controller by engaging the erase mode.

The completion of this project provides a flexible writing area that has the capacity to move against the stationary eraser. This feature makes the

erasing process automated. Also, due to radio frequency control the user can operate the machine even from a distance.

This study was developed through research, brainstorming and experimentation. The desired output was attained through series of tests. It involves choosing of the right parameters and materials to be utilized to increase its performance. The programming and fabrication was also included in the construction of the project.



Table of Contents

Approval Sheet	i
Acknowledgement	ii
Abstract	iii
Table of Contents	v
CHAPTER 1: INTRODUCTION	1
Background of the Study	1
Statement of the Problem	2
Significance of the Study	3
Scope of Limitation.....	4
CHAPTER 2: REVIEW OF RELATED LITERATURE	5
Review of Related Literature	5
Definition of Terms	11
CHAPTER 3: METHODOLOGY	13
Data Gathering.....	13
Data Analysis.....	13
Conceptual Framework	14
CHAPTER 4: PRESENTATION OF DATA AND RESULTS	17
Table 4.1: Determination of Writing Area Material	17
Table 4.2: Determination of the Right Type of Erasing Material	18
Table 4.3: Determination of the Right Marker Brand to Use	19
Performance of the First Prototype	19
Table 4.4: Observation of Speed and Area of Erased Part	23
Machine Description	24
CHAPTER 5: CONCLUSION AND RECOMMENDATIONS	33
Conclusion	33
Recommendation.....	34
APPENDIX	36