CRAPHOAL REPRESENTATION OF DIGTAL CONFRES AND ALTIMETER

STE ZURAIN BINTI HARUN

FROM Y OF ELECTRICAL ENGINEERING UNARIN 12 RECORDARA

GRAPHICAL REPRESENTATION OF DIGITAL COMPASS AND ALTIMETER

This project report is presented in partial fulfillment for award of the Bachelor of Electrical Engineering (Hons) UNIVERSITI TEKNOLOGI MARA



SITI ZURAINI BINTI HARUN Faculty of Electrical Engineering UNIVERSITI TEKNOLOGI MARA 40450 SHAH ALAM, SELANGOR

ACKNOWLEDGEMENT

I would first like to thank my family for their support in all of my endeavors. To my parents, thank you for the guidance you have given me in life. You have instilled upon me the discipline and perseverance to succeed and the freedom and encouragement to let me become myself and strive to be the best at whatever I may pursue.

I would like to sincerely thank my supervisor, Ir. Muhammad Ibrahim, who had given the chance to work under his guidance, ideas, comments and encouragement upon completion of this project.

I would like to take this opportunity to express my appreciation towards Mr. Rosli Jusoh for sharing knowledge on piloting and advice in helping me with this thesis.

Last but not least, I would like to thank my friends who make life what it is.

÷.,

ABSTRACT

This project describes graphical representation; the inputs received are defined from the digital compass and altimeter. The input readings from digital compass represent the coordinates of a flight in terms of heading, pitch and roll while altimeter gives the readings in height. This project mainly presents the development of a program to simulate data related to digital compass and altimeter. The results displayed graphical representation of the digital compass and altimeter in a glass cockpit. The functions of the primary instruments in a glass cockpit are combined into one display which is the Primary Flight Display. The graphical display provides the most realistic Primary Flight Display currently available for flight simulation. In order to represent those inputs obtained from digital compass and altimeter, few objects are drawn to realize the graphical representation. Basically, the center of the screen displays the reference plane on the ground. The graduations above and below the horizon show degrees of pitch up or down of the nose of a flight. On the right side of the display, there is an altitude tape that will pop up a reading obtained from the altimeter in terms of height. Below the artificial horizon, there is a compass card which displays the true heading obtained directly from digital compass.

TABLE OF CONTENTS

CONTENTS

PAGE

1. INTRODUCTION

1.1	Theory of Flight		
	1.1.1	Basic Forces	1
	1.1.2	Freedom of Movement	3
	1.1.3	Direction of Forces Relative to the Flight Path	4
	1.1.4	Altimeter	5
	1.1.5	Altitude	7
1.2	Project Overview		8
	1.2.1	Sample Primary Flight Display	8
	1.2.2	Designed Primary Flight Display	11
1.3	Projec	t Objectives	12
1.4	Scope of Project Report 1		

2. LITERATURE REVIEW

2.1	Introd	uction		
2.2	Glass Cockpit			
	2.2.1	Functions and Concept of a Glass Cockpit	15	
	2.2.2	Glass Cockpit System Overview	16	
2.3	Microsoft Visual Basic 6.0		22	
	2.3.1	Language Features	22	
	2.3.2	Coding in Visual Basic	28	