EXPERIMENTAL INVESTIGATION ON THE PERFORMANCE OF CAR RADIATOR FAN

MUHAMMAD ISA BIN OTHMAN
(2003665266)

A thesis submitted in partial fulfillment of the requirement for the award of Bachelor of Engineering (Hons) Mechanical

Faculty of Mechanical Engineering
Universiti Teknologi MARA (UiTM)

May 2006

"I declared that this thesis is the result of my own work except the ideas and summaries which I have clarified their sources. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any degree"

Signed : .....

Date : 160506

Muhammad Isa Bin Othman

2003665266

ACKNOWLEDGEMENT

Thanks to Allah S.W.T the most Beneficent and Merciful for giving me strength to complete this thesis successfully. A very much thank you to my advisor Mr. Idris B. Saad and for Co-Advisor Mr. Azli B. Abd Razak for giving me a very beneficial advised and guidance since at the beginning stage until the end of this thesis. It won't be easy for me to complete this thesis without the guidance and advised.

Secondly, I would like to express my gratitude to the Fluid Mechanics Laboratory assistant, Mr. Karim B. Daud, thank you very much for your help and guidance in the experimental procedures is greatly appreciated.

Thank you so much also to my parents, family and friends for giving us a full support and encouragement. Also not forgot to everyone who is together with us to ensure the successful of this thesis.

Last but not least, thank you very much too all concern who helped me in complete this project.

ABSTRACT

The main purpose of this project is to study the performance of car radiator fan such as flow rate. This project used experimental method to investigate the performance of this fan. This experiment used three types of fan. The fan was used are 850cc, 1300cc and 1800cc. The purpose used different fan is to get which fans that have better performance when the car running at static conditions such as traffic jam and to get which fans those give appropriate speed for new design in terms of blade profile. In the experimental method, axial fan test rig was used to test the flow rate that could be produced by this fan. The fan will test at different speed by using DC power supply which can control the speed, voltage and current supply. From that the performance of the fan could be determine by taking the current, voltage and the velocity of air flow can be taking from velocity meter. The result from the experimental method will be compared with theoretical method and get at which speed radiator fan give better performance.

TABLE OF CONTENTS

CHAPTER	CONTENTS	PAGE
	ACKNOWLEDGEMENT	i
	ABSTRACT	ii
	TABLES OF CONTENTS	iii
	LIST OF TABLES	v
	LIST OF FIGURES	vi
	LIST OF SYMBOLS	vii
	LIST OF APPENDICES	viii
I	**INTRODUCTION**	1
	1.1 Objective	2
	1.2 Scope of the Project	2
II	**PROJECT MANAGEMENT & LITERATURE STUDY**	4
	2.1 Project Schedule	4
	2.2 Literature Study	6
III	**METHODOLOGY**	9
	3.1 Experimental Method	9
	3.1.1 Theory of Airflow	10
	3.2 Theoretical Method	12