

**FINAL YEAR PROJECT REPORT
DIPLOMA MECHANICAL ENGINEERING
FACULTY OF MECHANICAL ENGINEERING
MARA INSTITUTE OF TECHNOLOGY
SHAH ALAM**

STUDIES ON CAVITATION

PREPARED BY :

NORAZILAH BINTI DILLAH

95718329

NOR ZALIPAH BINTI SULIMAN

94850712

PROJECT ADVISORS :

DR. SOLOMON DARIUS GNANARAJ

SENIOR LECTURER DEPARTMENT

OF MECHANICAL ENGINEERING

ITM SHAH ALAM

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ABSTRACT

This work presents the outcome of few studies on cavitation. Case studies are presented to show the cavitation damage in turbines, pumps and propellers. Experimental results are presented using the Universal Axial flow Apparatus running under pump mode and turbine mode. Experimental results using cavitation apparatus are also presented. Formation of cavitation bubbles in the Universal axial Flow Apparatus and the cavitation apparatus are shown. The effects of cavitation on machine members and methods to prevent them are presented.

CONTENTS

Acknowledgement

Abstract

1. Introduction

1.1. Vapour pressure and cavitation	1
1.2. Machine members affected by cavitation	6
1.2.1. Cavitation in hydraulic turbine	6
1.2.2. Cavitation in centrifugal pumps	12
1.2.3. Cavitation in propeller	15
1.3. Cavitation effects and prevention	17
1.4. Case studies on the effects of cavitation	
1.4.1. Propeller	20
1.4.2. Pumps.....	27
1.4.3. Turbines	30
1.4.4. Tubes	32

2. Universal axial flow apparatus

2.1. Description of the universal axial flow apparatus	34
2.2. Cavitation apparatus	
2.2.1. General description	40

4. Studies on axial flow apparatus	
4.1. Procedure	42
3.1.1. Initial operation	43
3.1.2. General operation	47
3.1.3. Operation of stroboscope	51
3.2. Experimental results	52
3.3. Observation of cavitation in axial flow turbine	54
3.4. Observation of the stroboscope	55
4.1. Studies on cavitation apparatus	
4.1 Procedure	57
4.2 Experimental results	64
4.3 Observation of cavitation	66
5. Conclusions	
5.1. Conclusions	68
5.2. Scope for future work	70

References.

1. INTRODUCTION

1.1 VAPOUR PRESSURE AND CAVITATION

Vapour Pressure

All liquids have a tendency to vaporize. They tend to change from the liquid to the gaseous state. Molecules are continuously projected from the free surface of liquids to the atmosphere. These ejected molecules are in gaseous state and exert their own partial vapour pressure on the liquid surface. This pressure is known as the vapour pressure of the liquids (P_v).

As the molecular activity increases with temperature, the vapour pressure also increases with rise in temperature. Boiling of the liquid occurs when the external pressure imposed on the liquid is