

HIGHER TECHNICAL INSTITUTE

**MECHANICAL ENGINEERING
DEPARTMENT**

DIPLOMA PROJECT

**AN INVESTIGATION INTO THE
CALCULATION OF FLOW OVER VARIOUS
SHAPES**

M/1032

ANTONIS KYRIACOU

JUNE 2007

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OF FLOW OVER VARIOUS SHAPES**

by

ANTONIS KYRIACOU

Project submitted to the

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of the Higher Technical Institute

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ABSTRACT

This project aims to investigate the calculations of flow over various shapes, the understanding of a boundary layer and its variations according to the shape of the object under study and the exact and approximate methods of solving these problems are also studied. We will also see that methods of solving vary according to the type of flow, whether it is laminar or turbulent, and of course the shape of the object. A study of the different types of pressure gradients and the way they effect the flow will also be covered.

Also we will investigate the two main forces which act on a object: drag (which is present on all shapes except flat plates) and lift (which is present on objects according to the shape). Also we will refer to streamlining which is a method of eliminating drag.

To achieve these objectives we will see some basic fundamentals of fluid mechanics and see how we can comprise this knowledge so as to solve different problems and understand the procedure followed.

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I would like to dedicate this project to my family for I would have not succeeded without their help and support throughout my three years at H.T.I.

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