INVESTIGATION OF STRESSES ON A FLAT PLATE WITH A HOLE USING EXPERIMENTAL TECHNIQUES AND COMPARING THE RESULTS USING ALGOR FINITE ELEMENT PROGRAMME

A project report presented in partial fullfillment of the requirement for the award of

Diploma in Mechanical Engineering of The Mara Institute of Technology, Malaysia

By :

ZULKIFLI BIN SHARUDIN

SHAHRUL NIZAR BIN MD. SALLEH

SURIYATI BTE. SUPONO

DEPARTMENT OF MECHANICAL ENGINEERING

MARA INSTITUTE OF TECHNOLOGY

SHAH ALAM, SELANGOR

DIS-MAY 1997

INTRODUCTION

The aim of our project is making a research about the characteristic of stress which existed at a flat plat with a tensile force applied to the piats. The flat plat used in our project here was bored in a circular and elliptical hole, so that we could determined the effect of stress concentration factor through the values of stress we've got.

This research was done by using sketches in all process with 2 techniques:

a) Experimental Techniques

b) Algor FEA programme

After all the values we needed from both techniques determined, the next method was comparing all the results of stresses from both methods.

From all the results in the comparison between algor and experiment techniques done, conclusion and all the comments were explained in the report.

The main objective of this research:

1. Determined the uses of Algor FEA in engineering design.
2. The uses of Algor FEA in doing certain project, such as save times and energy in designing and also comparing the methods nowadays.

CONTENTS

4. EXPERIMENT DONE - USING EXPERIMENTAL TECHNIQUES

5. FEA METHOD