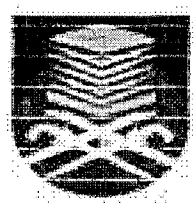
FINAL YEAR PROJECT REPORT



DIPLOMA IN MECHANICAL ENGG. (AEROSPACE)

FACULTY OF MECHANICAL ENGINEERING

MARA UNIVERSITY OF TECHNOLOGY (UITM)

40450 SHAH ALAM

SELANGOR D.E.

ADVANCED COMPOSITE MATERIALS IN AIRCRAFT APPLICATIONS

MOHD.NIZAM BIN MOHD.ZAIN 97195161 KM 13

MOHD.NAZIRUDIN BIN TAHIR 97195154 KM 13

APRIL 2000

ACKNOWLEDGEMENT

Assalamualaikum w.b.t. First of all we would like to thank to Allah S.W.T for giving us the strength and patience to produce this report.

Secondly, our course tutors of aerospace engineering, Encik Zaidi bin mohd. Zain, our lecturer and project advisor, Ir.Dr.Mohamad Nor Berhan, our Superintendent of mechanical component workshop Encik Ahmad Izzudin Ab. Rahim for their guidance and valuable advises.

We also would like to thank workers at Fiberglass & Composite workshop especially foreman, Encik Hj.Daud, and leading hand, Mr.sivabalan. Without their assistance we cannot produce such report with valuable resources they provided.

Thank you to training Co-ordination Unit (TCU), for giving us one-day off (every Wednesday) to do researched and meeting people which related to our report, Mechanical Workshop, for giving us the opportunity to look at the manuals and related documents for our report, MASA, for providing us with a lot of resources and facilities, miss Yusni from IT and re-engineering Department, thank you for the scanners and computers, UiTM, for references and everybody, which may be directly or indirectly involved in making this report possible.

Lastly, we would like to convey our gratitude to our parents for their support and all my friends for helping us.

TABLE OF CONTENTS

1.0 INTRODUCTION

The exciting thing about composites is that an ordinary person can make things that they have never been able to make before, such as bathtubs, a boat, or a motorcycle. Race car bodies, canoes, airplanes, model aircraft, jet skis, boats, sculpture, as well as traditional industrial molding and model making have taken on a new dimension as fiberglass becomes less of a mystery, easier to use, and easier to buy.

The materials that are used are easiest to understand when you think about something like a boat. A boat is hard, it doesn't bend, and it certainly doesn't take in water. Most people think of a boat as being made of "fiberglass."

1.1 DEFINITION

Composites are made from two or more distinct materials that when combined together are better than each other would be separately which is reinforcing elements, fillers, and composite matrix or binder differing in a form or composition on a micro scale.

Advanced composite is a composites material applicable to aerospace construction and made by imbedding high-strength, high-modulus fibers within an essentially homogeneous matrix.