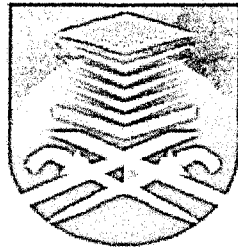


**FACULTY OF MECHANICAL ENGINEERING  
MARA UNIVERSITY OF TECHNOLOGY  
SHAH ALAM SELANGOR**



**DIPLOMA OF MECHANICAL ENGINEERING**

**FINAL YEAR PROJECT  
KJM 365**

**ULTRA-LIGHT PROPELLER**

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Muhammad bin Adam

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## INTRODUCTION

A propeller can be seen as a rotating fan in water or a wing in air. The horizontal axis of rotation produces a dynamic force as thrust. Thrust is the force that moves an aircraft through the air. And thrust is generated by the propulsion system of the aircraft. The force produced is from the difference in pressure from the forward and rear surfaces of the blades.

On an aircraft, the propeller is an airfoil, much like the wing of an aircraft, except that the shape of the airfoil varies along the length of the blade, however any point on the blade describes a helix as it moves through the air. The motion of the propeller blade, when placed at a positive angle of attack produces forward thrust and tangential resistance. The resistance produces a turning moment about the propeller axis, called resistance torque, which it is necessary for the engine to overcome.

Very high efficiency propellers are similar in airfoil section to a low drag wing and as such are poor in operation when at other than their optimum angle of attack. It required advanced control systems and better section profiling to counter the need for accurate matching of pitch to flight speed and engine speed to power so as to make these type of propellers usable.

The propeller is usually attached to the crankshaft of the engine, either directly or through a gearbox. Light aircraft sometimes forego the weight, complexity and cost of gearing but on larger aircraft and with turboprop engines it is essential.

In this present study, our project is knowledge about propeller and defines all force that involved. Besides that we also need to complete our studies because this is one of our subject also understand this system and how it functioning. Besides that we can improve our knowledge about aerodynamic