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AEROTECH (PVT) LTD.

CHARLES PRINCE AIRPORT, MOUNT HAMPDEN

AIRCRAFT MAINTENANCE ENGINEERING

AVIONICS MAJOR

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ABSTRACT

Aviation is the activity or business of operating aircraft. The history of aviation highlights the fact that man derived the concept of flying from birds. The first flying devices invented were hot air balloons which were followed by heavier-than-air machines.

The heavier-than-air machines were developed and improved using the fundamental principles of Physics – the science concerned with the nature and properties of matter and energy. This science, characterised by the application of theoretic theses and suppositions, illustrated by diagrammatic exemplifications of the actual situation to be experimented on, led to the success of the first flight achieved by the Wright brothers in a heavier than air aircraft.

Long distance travel today has been made an experience of minutes to a few hours by the use of aeroplanes. These devices, as commercialised as they are today, were constructed and are maintained by application of the laws and principles of Physics. The different branches of Physics such as Electricity and Magnetism, Thermal Physics, Fluid Mechanics, Electromagnetism, Instrumentation and Material Science among others, complement Newtonian Mechanics (the main set of principles from which the theory of flight was derived) such that when applied, the experience of flight is as normal as a smooth drive, though faster and more efficient.

In order to maintain safety and reliability in this dangerous yet useful practice of aviation, the aircraft and maintenance equipment are to be kept in the best state of serviceability and accuracy respectively. This research explains the physical principles behind the daily tasks and operations the student was trained to carry out in the general aviation industry.