



# Technical Helicopter

Pooleys EASA PPL Ground School



# POOLEYS

## Student Pilot's Work Book Pooleys EASA PPL Ground School

– To accompany the Pooleys Helicopter Manual –



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Pooleys Air Presentations, Technical Helicopter, Student Pilot's Work Book.

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## Introduction

Pilot's Work Books are specifically designed to aid your training, to help you understand some of the more complex aspects of your course. It is also a permanent record of the subjects covered during your ground school.

The full series of Pilot's Work Books cover the areas for which the Civil Aviation Authority (CAA) and EASA (Part-FCL) set pilot examinations.

At this point, it should be said that there is no substitute for the experience and understanding that your instructor will pass on to you during your ground school - there are some things which cannot be learned from books alone!

At the top of each page of your Pilot's Work Book, there is reference to further information from "The Helicopter Principles of Flight", the volume number and chapter. On some occasions you will note other references that are considered excellent reading.

Your instructor will be using the powerpoint prepared by Pooleys Air Presentations. Each flying school/club teaches to a recognised syllabus. This syllabus can be taught in a slightly different order to suit the individual's needs or the requirements of the instructor. Whatever the order, the result will be the same.

This Pilot's Work Book has been design to be used in conjunction with the Pooleys Air Presentations system of training. It is however an invaluable piece of reference and revision material for anyone studying for their PPL Licence.

To obtain the most from your Pilot's Work Book we would suggest that you obtain a set of coloured pencils (red, blue, green and yellow). By so doing, this will enable you to make colour enhancements to some of the diagrams - thus aiding your revision.



## The Rotary Wing



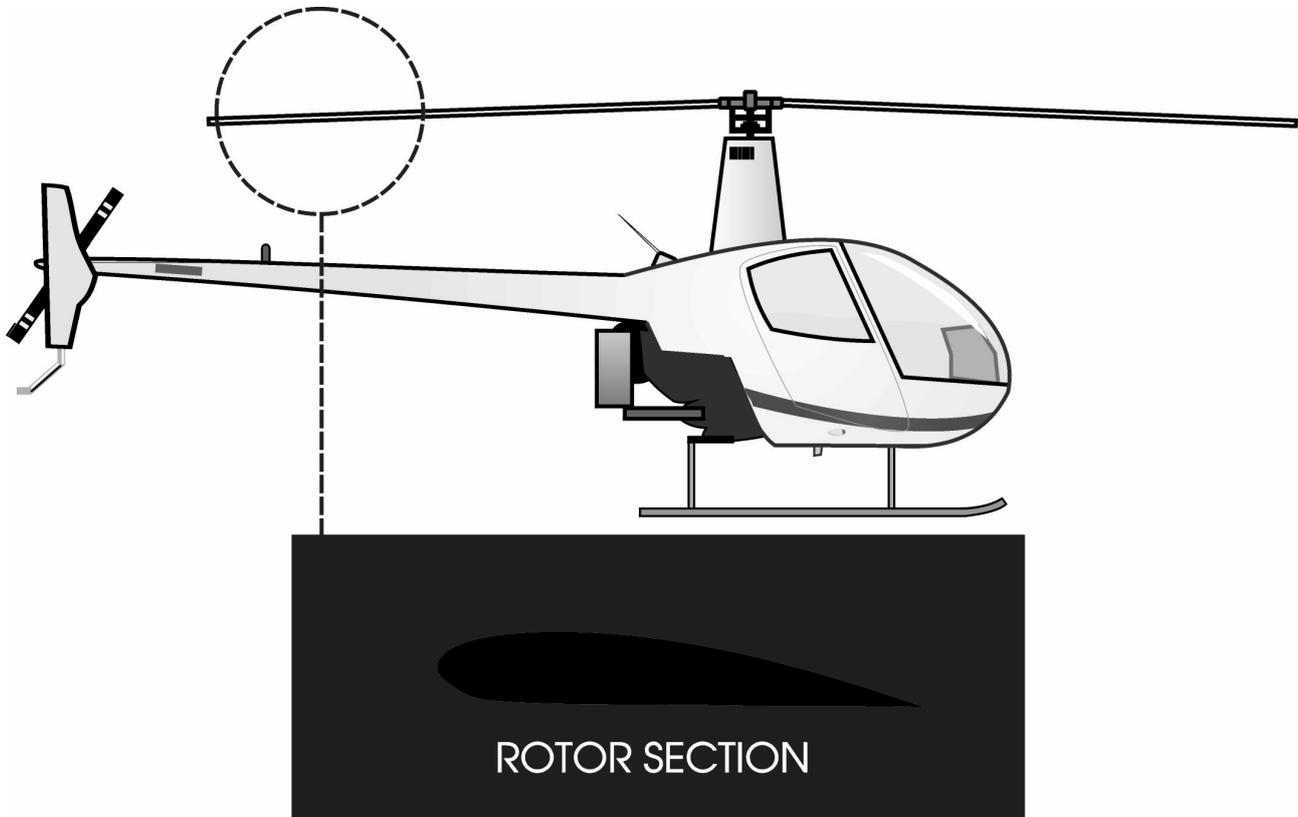
A rotary wing aircraft (rotorcraft) is defined as a heavier than air machine which derives its lift from a rotor (or rotors).

One of the first rotorcraft was the gyroplane, given the household name 'Autogiro' by its inventor

The aircraft relied on its forward speed (provided by either a pusher or puller engine configuration) to produce airflow forces to turn a lift producing horizontal rotor. Today's rotorcraft are practically all helicopters. Unlike the autogiro, helicopters have engine driven horizontal rotors which provide  the lift and the propelling forces.



## Aerofoil Section



Like any aircraft, the helicopter obtains its  from the

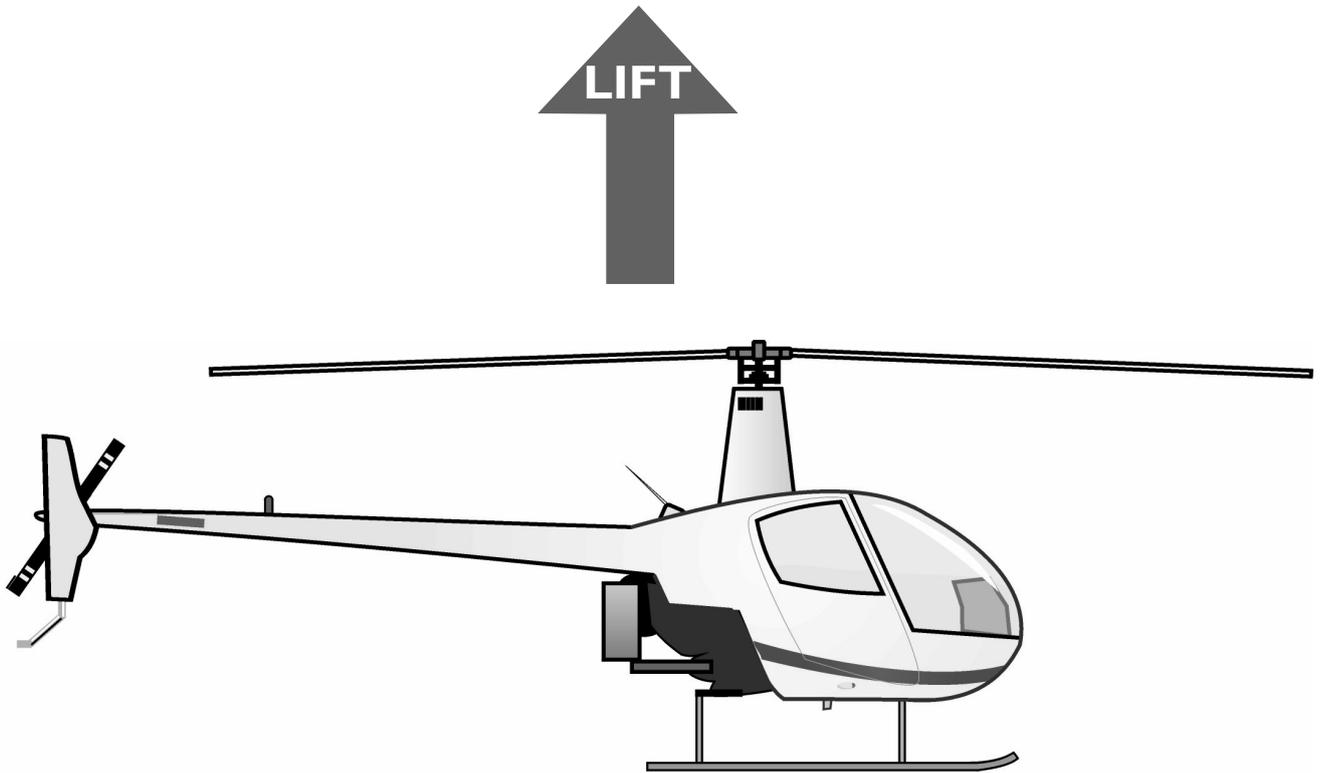
The essential difference is that unlike a fixed wing aircraft that derives its lift from propelling the whole aircraft through the air, the helicopter can

The helicopter therefore has many advantages apart from normal forward flight. It can ascend and descend  fly   and remain stationary in a

The helicopter pays a price for this and compared with a conventional fixed wing aircraft it requires  engine power to lift a given weight and its maximum speed is



## Production of Lift



### THE DANIEL BERNOULLI PRINCIPLE

