HELICOPTER QUESTION BANK

Vol 3

Written by Mike Burton

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Principles of Flight

Powerplants

Electrics

Systems

Instruments

Loading

PREFACE

The questions contained within this book provide an excellent test of your knowledge of helicopters. They are specifically targeted toward the CAA examinations at CPL/ATPL level. Many of the questions are also useful for the PPL/H student.

This book is one of a series designed to help the student helicopter pilot achieve that ultimate goal.

It is very important that the student should practice the reading of questions, and answering the question that has been asked. Do not assume the question has asked anything more than it really has. Study hard, regularly, and practice question answering regularly.

Good Luck

Mike Burton
Aviation Instructor
Author and Consultant.

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HELICOPTER PRINCIPLES OF FLIGHT

PAPER 1

1. What is the purpose of the helicopter main rotor flapping hinge?:-

a) To assist the control and tilt of the fuselage.
b) To damp and equalise the changes in drag on the blades.
c) To maintain constant rotor thrust, despite blade velocity variations.
d) To maintain a constant angle of attack along the blade from root to tip.

2. Main helicopter rotor blade dampers are fitted to:-

a) minimise blade droop with reducing rotor rpm.
b) damp motion about the drag hinge.
c) damp motion about the flapping hinge.
d) limit centrifugal force by limiting rotor rpm.

3. A ''Delta Three' hinge is fitted to a main rotor blade to:-

a) increase the blade pitch angle on the advancing blade.
b) reduce the angle of blade pitch on the retreating side.
c) maintain a constant angle of attack as the blade flaps up.
d) reduce the blade pitch angle as the blade flaps up on the advancing side.

4. The coning angle of main rotor blades is determined by:-

a) drag and lift forces.
b) lift and centripetal forces.
c) drag and centrifugal forces.
d) lift and centrifugal forces.

5. In level forward flight:-

a) induced flow is greatest at the rear of the disc.
b) the angle of attack is greatest on the advancing blade.
c) the induced flow is totally replaced by translational lift.
d) induced flow is greatest at the front of the disc.

6. As the blade pitch angle is increased in flight:-

a) the stagnation point on the blade moves down and aft.
b) the blade C of P moves aft on the aerofoil.
c) the blade C of G moves aft on the aerofoil.
d) the blade C of G moves toward the blade tip.