Helicopter Oral Exam Guide Update

May 2018
ASA-OEG-H2

With the following revisions, the *Helicopter Oral Exam Guide*, Second Edition by Ryan Dale provides comprehensive preparation for the FAA Oral Exam for a pilot certificate with a helicopter rating.

Page Number	Question Number	Explanation
P-6	4	*Answer now reads:* A helicopter may be operated clear of clouds in an airport traffic pattern within ½ mile of the runway or helipad of intended landing if the flight visibility is not less than ½ statute mile.
P-7	1	*Answer now reads:* Center of pressure is the point along the chord line of an airfoil through which all aerodynamic forces are considered to act. Since pressures vary on the surface of an airfoil, an average location of pressure variation is needed. As the AOA changes, these pressures change and center of pressure moves along the chord line.
P-7	4	*Question and answer are changed to read* **4. What is the Angle of Incidence (AOI)?** (FAA-H-8083-21A) Angle of incidence (AOI)—the angle between the chord line of a blade and rotor hub. It is usually referred to as blade pitch angle. For fixed airfoils, such as vertical fins or elevators, angle of incidence is the angle between the chord line of the airfoil and a selected reference plane of the helicopter.
P-8	5	*Question and answer are changed to read:* **5. What is Bernoulli's Principle?** (FAA-H-8083-21A) Angle of incidence (AOI)—the angle between the chord line of a blade and rotor hub. It is usually referred to as blade pitch angle. For fixed airfoils, such as vertical fins or elevators, angle of incidence is the angle between the chord line of the airfoil and a selected reference plane of the helicopter.
P-10	16	*Question and answer are changed to read:* **16. What is Translational Thrust?** (FAA-H-8083-21A) Translational thrust occurs when the tail rotor becomes more aerodynamically efficient during the transition from hover to forward flight. As the tail rotor works in progressively less turbulent air, this improved efficiency produces more antitorque thrust, causing the nose of the aircraft to yaw left (with a main rotor turning counterclockwise) and forces the pilot to apply right pedal (decreasing the AOA in the tail rotor blades) in response. In addition, during this period, the airflow affects the horizontal components of the stabilizer found on most helicopters which tends to bring the nose of the helicopter to a more level attitude.
P-13	C. 4	*New Question and Answer are added to read:* **4. What will happen to the helicopter during a Retreating Blade Stall situation?** (FAA-H-8083-21A) Retreating Blade Stall is evidenced by a nose pitch up, vibration, and a rolling tendency—usually to the left in helicopters with counterclockwise blade rotation.

Page Number	Question Number	Explanation
P-13	D. 1	*Answer now reads:* The height/velocity diagram or H/V curve is a graph charting the safe/unsafe flight profiles relevant to a specific helicopter.
P-32	D. 1	*Question now reads:* **1. What is Settling with Power (Vortex Ring State)?**
P-35	H. 1	*Answer now reads:* Helicopters with articulating rotors (usually designs with three or more main rotor blades) are subject to ground resonance, a destructive vibration phenomenon that occurs at certain rotor speeds when the helicopter is on the ground. Ground resonance is a mechanical design issue that results from the helicopter's airframe having a natural frequency that can be intensified by an out-of-balance rotor. The unbalanced rotor system vibrates at the same frequency or multiple of the airframe's resonant frequency and the harmonic oscillation increases because the engine is adding power to the system, increasing the magnitude (or amplitude) of the vibrations until the structure or structures fail. This condition can cause a helicopter to self-destruct in a matter of seconds.
A-5	—	*Change table items to read:*

180-Degree Autorotation		
Predetermined Spot	±200 feet	±100 feet

Confined Area		
RPM	Normal limits	Normal limits
Approach Angle	Acceptable	Acceptable
Hazard	Avoid Conditions for settling with power	Avoid Conditions for settling with power

Pinnacle Operations		
RPM	Normal limits	Normal limits