

**Private Pilot Licence Examinations– 030 Flight Performance and Planning  
Aeroplane and Helicopter**

Syllabus Reference	Syllabus details & Associated Learning Objective	Aeroplane		Helicopter	
		PPL	Bridge Course	PPL	Bridge Course
<b>030.00.00.00</b>	<b>FLIGHT PERFORMANCE AND PLANNING</b>				
031.00.00.00	<b>MASS AND BALANCE: AEROPLANES OR HELICOPTERS</b>				
031.01.00.00	<b>Purpose of mass and balance considerations</b>				
031.01.01.00	<b>Mass limitations</b>				
031.01.01.01	Importance in regard to structural limitations	X	X	X	X
031.01.01.02	Importance in regard to performance limitations	X	X	X	X
031.01.02.00	<b>CG limitations</b>				
031.01.02.01	Importance in regard to stability and controllability	X	X	X	X
031.01.02.02	Importance in regard to performance	X	X	X	X
031.02.00.00	<b>Loading</b>				
031.02.01.00	<b>Terminology</b>				
031.02.01.01	Mass terms	X	X	X	X
031.02.01.02	Load terms (including fuel terms)	X	X	X	X
031.02.02.00	<b>Mass limits</b>				
031.02.02.01	Structural limitations	X	X	X	X
031.02.02.02	Performance limitations	X	X	X	X
031.02.02.03	Baggage compartment limitations	X	X	X	X
031.02.03.00	<b>Mass calculations</b>				
031.02.03.01	Maximum masses for take-off and landing	X	X	X	X
031.02.03.02	Use of standard masses for passengers, baggage and crew	X	X	X	X
031.02.04.00	<b>Fundamentals of CG calculations</b>				
031.02.04.01	Definition of centre of gravity	X	X	X	X
031.02.04.02	Conditions of equilibrium (balance of forces and balance of moments)	X	X	X	X
031.02.04.03	Basic calculations of CG	X	X	X	X
031.03.00.00	<b>Mass and balance details of aircraft</b>				
031.03.01.00	<b>Contents of mass and balance documentation</b>				
031.03.01.01	Datum and moment arm	X	X	X	X
031.03.01.02	CG position as distance from datum	X	X	X	X
031.03.02.00	<b>Extraction of basic mass and balance data from aircraft documentation</b>				
031.03.02.01	BEM	X	X	X	X
031.03.02.02	CG position or moment at BEM	X	X	X	X
031.03.02.03	Deviations from standard configuration	X	X	X	X
031.04.00.00	<b>Determination of CG position</b>				
031.04.01.00	<b>Methods</b>				
031.04.01.01	Arithmetic method	X	X	X	X
031.04.01.02	Graphic method	X	X	X	X
031.04.02.00	<b>Load and trim sheet</b>				
031.04.02.01	General considerations	X	X	X	X
031.04.02.02	Load sheet and CG envelope for light aeroplanes and for helicopters	X	X	X	X
032.00.00.00	<b>PERFORMANCE: AEROPLANES</b>				
032.01.01.00	<b>Introduction</b>				

032.01.01.01	Performance classes	x	x		
032.01.01.02	Stages of flight	x	x		
032.01.01.03	Effect of aeroplane mass, wind, altitude, runway slope and runway conditions	x	x		
032.01.01.04	Gradients	x	x		
032.01.02.00	<b>SE aeroplanes</b>				
032.01.02.01	Definitions of terms and speeds	x	x		
032.01.03.00	<b>Take-off and landing performance</b>				
032.01.03.01	Use of aeroplane flight manual data	x	x		
032.01.04.00	<b>Climb and cruise performance</b>				
032.01.04.01	Use of aeroplane flight data	x	x		
032.01.04.02	Effect of density altitude and aeroplane mass	x	x		
032.01.04.03	Endurance and the effects of the different recommended power or thrust settings	x	x		
032.01.04.04	Still air range with various power or thrust settings	x	x		
033.00.00.00	<b>FLIGHT PLANNING AND FLIGHT MONITORING</b>				
033.01.00.00	<b>Flight planning for VFR flights</b>				
033.01.01.00	<b>VFR navigation plan</b>				
033.01.01.01	Routes, airfields, heights and altitudes from VFR charts	x	x	x	x
033.01.01.02	Courses and distances from VFR charts	x	x	x	x
033.01.01.03	Aerodrome charts and aerodrome directory	x	x	x	x
033.01.01.04	Communications and radio navigation planning data	x	x	x	x
033.01.01.05	Completion of navigation plan	x	x	x	x
033.01.02.00	<b>Fuel planning</b>				
033.01.02.01	General knowledge	x	x	x	x
033.01.03.00	<b>Pre-flight calculation of fuel required</b>				
033.01.03.01	Calculation of extra fuel	x	x	x	x
033.01.03.02	Completion of the fuel section of the navigation plan (fuel log) and calculation of total fuel	x	x	x	x
033.02.00.00	<b>Pre-flight preparation</b>				
033.02.01.00	<b>AIP and NOTAM briefing</b>				
033.02.01.01	Ground facilities and services	x	x	x	x
033.02.01.02	Departure, destination and alternate aerodromes	x	x	x	x
033.02.01.03	Airway routings and airspace structure	x	x	x	x
033.02.02.00	<b>Meteorological briefing</b>				
033.02.02.01	Extraction and analysis of relevant data from meteorological documents	x	x	x	x
033.03.00.00	<b>ICAO flight plan (ATS flight plan)</b>				
033.03.01.00	<b>Individual flight plan</b>				
033.03.01.01	Format of flight plan	x	x	x	x
033.03.01.02	Completion of the flight plan	x	x	x	x
033.03.01.03	Submission of the flight plan	x	x	x	x
033.04.00.00	<b>Flight monitoring and in-flight replanning</b>				
033.04.01.00	<b>Flight monitoring</b>				
033.04.01.01	Monitoring of track and time	x	x	x	x
033.04.01.02	In-flight fuel management	x	x	x	x
033.04.01.03	In-flight re-planning in case of deviation from planned data	x	x	x	x
034.00.00.00	<b>PERFORMANCE: HELICOPTERS</b>				
034.01.00.00	<b>General</b>				
034.01.01.00	<b>Introduction</b>				
034.01.01.01	Stages of flight			x	x
034.01.01.02	Effect on performance of atmospheric, airport or heliport and helicopter conditions			x	x

034.02.00.00	<b>Applicability of airworthiness requirements</b>			x	x
034.03.00.00	<b>Definitions and terminology</b>			x	x
034.03.01.00	<b>Performance: SE helicopters</b>				
034.03.01.01	<b>Definitions of terms</b>			x	x
	(a) masses;			x	x
	(b) velocities: $V_x$ , $V_y$ ;			x	x
	(c) velocity of best range and of maximum endurance;			x	x
	(d) power limitations;			x	x
	(e) altitudes.			x	x
034.03.02.00	<b>Take-off, cruise and landing performance</b>			x	x
034.03.02.01	<b>Use and interpretation of diagrams and tables:</b>			x	x
	(a) Take-off:			x	x
	(1) take-off run and distance available;			x	x
	(2) take-off and initial climb;			x	x
	(3) effects of mass, wind and density altitude;			x	x
	(4) effects of ground surface and gradient.			x	x
	(b) Landing:			x	x
	(1) effects of mass, wind, density altitude and approach speed;			x	x
	(2) effects of ground surface and gradient.			x	x
	(c) In-flight:			x	x
	(1) relationship between power required and power available;			x	x
	(2) performance diagram;			x	x
	(3) effects of configuration, mass, temperature and altitude;			x	x
	(4) reduction of performance during climbing turns;			x	x
	(5) autorotation;			x	x
	(6) adverse effects (icing, rain and condition of the airframe).			x	x