

POOLEYS–AIR PILOT PUBLISHING
AIR PILOT'S MANUALS

– Edition 2, August 2023 –

Where to find the
Learning Objectives
in the **Air Pilot's Manuals** and the
Pooleys Aviation Academy



POOLEYS
Air Pilot Publishing

POOLEYS–AIR PILOT PUBLISHING AIR PILOT'S MANUALS

Where to find the **Learning Objectives**:

010 AIR LAW AND ATC PROCEDURES (Page 1/2)

Syllabus Reference	Syllabus Details & Associated Learning Objective	AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
		PPL	B.C.	PPL	B.C.	
010.00.00.00	AIR LAW AND ATC PROCEDURES					APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
010.01.00.00	International law: conventions, agreements and organisations					APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
010.01.01.00	The Convention on international civil aviation (Chicago) Doc. 7300/6					APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
010.01.01.01	Part I Air Navigation: relevant parts of the following chapters:					APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
	(a) general principles and application of the convention;	×		×		APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
	(b) flight over territory of Contracting States;	×		×		APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
	(c) nationality of aircraft;	×		×		APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
	(d) measures to facilitate air navigation;	×		×		APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
	(e) conditions to be fulfilled on aircraft;	×		×		APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
	(f) international standards and recommended practices;	×		×		APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
	(g) validity of endorsed certificates and licences;	×		×		APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
	(h) notification of differences.	×		×		APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
010.01.01.02	Part II The International Civil Aviation Organisation (ICAO): objectives and composition	×		×		APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
010.02.00.00	Annex 8: Airworthiness of aircraft					APM Vol 2, Section 1, Chapter 9 - Registration and Airworthiness
010.02.01.01	Foreword and definitions	×		×		APM Vol 2, Section 1, Chapter 9 - Registration and Airworthiness
010.02.01.02	Certificate of airworthiness					APM Vol 2, Section 1, Chapter 9 - Registration and Airworthiness
010.03.00.00	Annex 7: Aircraft nationality and registration marks					APM Vol 2, Section 1, Chapter 9 - Registration and Airworthiness
010.03.01.01	Foreword and definitions	×		×		APM Vol 2, Section 1, Chapter 9 - Registration and Airworthiness
010.03.01.02	Common- and registration marks	×		×		APM Vol 2, Section 1, Chapter 9 - Registration and Airworthiness
010.03.01.03	Certificate of registration and aircraft nationality	×		×		APM Vol 2, Section 1, Chapter 9 - Registration and Airworthiness
010.04.00.00	Annex 1: Personnel licensing					APM Vol 2, Section 1, Chapter 10 - Pilots' Licences
010.04.01.01	Definitions	×		×		APM Vol 2, Section 1, Chapter 10 - Pilots' Licences
010.04.01.02	Relevant parts of Annex 1 connected to Part-FCL and Part-Medical	×		×		APM Vol 2, Section 1, Chapter 10 - Pilots' Licences
010.05.00.00	Annex 2: Rules of the air					APM Vol 2, Section 1, Chapter 2 - Rules of the Air
010.05.01.01	Essential definitions, applicability of the rules of the air, general rules (except water operations), visual flight rules, signals and interception of civil aircraft	×		×		APM Vol 2, Section 1, Chapter 2 - Rules of the Air
010.06.00.00	Procedures for air navigation: aircraft operations doc. 8168-ops/611, volume 1					APM Vol 2, Section 1, Chapter 4 - Altimeter-Setting Procedures
010.06.01.01	Altimeter setting procedures (including ICAO doc. 7031 – regional supplementary procedures)	×		×		APM Vol 2, Section 1, Chapter 4 - Altimeter-Setting Procedures
010.06.01.02	Basic requirements (except tables), procedures applicable to operators and pilots (except tables)	×		×		APM Vol 2, Section 1, Chapter 4 - Altimeter-Setting Procedures
010.07.00.00	Secondary surveillance radar transponder operating procedures (including ICAO Doc. 7031 – regional supplementary procedures)					APM Vol 2, Section 1, Chapter 11 - Operation of Aircraft
010.07.01.01	Operation of transponders	×		×		APM Vol 2, Section 1, Chapter 11 - Operation of Aircraft
010.07.01.02	Phraseology	×		×		APM Vol 2, Section 1, Chapter 11 - Operation of Aircraft
010.08.00.00	Annex 11: Doc. 4444 air traffic management					APM Vol 2, Section 1, Chapter 6 - Air Traffic Services
010.08.01.01	Definitions	×		×		APM Vol 2, Section 1, Chapter 6 - Air Traffic Services
010.08.01.02	General provisions for air traffic services	×		×		APM Vol 2, Section 1, Chapter 6 - Air Traffic Services
010.08.01.03	Visual separation in the vicinity of aerodromes	×		×		APM Vol 2, Section 1, Chapter 6 - Air Traffic Services
010.08.01.04	Procedures for aerodrome control services	×		×		APM Vol 2, Section 1, Chapter 6 - Air Traffic Services
010.08.01.05	Radar services	×		×		APM Vol 2, Section 1, Chapter 6 - Air Traffic Services
010.08.01.06	Flight information service and alerting service	×		×		APM Vol 2, Section 1, Chapter 6 - Air Traffic Services
010.08.01.07	Phraseologies	×		×		APM Vol 2, Section 1, Chapter 6 - Air Traffic Services
010.08.01.08	Procedures related to emergencies, communication failure and contingencies	×		×		APM Vol 2, Section 1, Chapter 6 - Air Traffic Services

010 AIR LAW AND ATC PROCEDURES (Page 2/2)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
010.09.00.00	Annex 15: Aeronautical information service					APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
010.09.01.01	Introduction, essential definitions	×		×		APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
010.09.01.02	AIP, NOTAM, AIRAC and AIC	×		×		APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
010.10.00.00	Annex 14, volume 1 and 2: Aerodromes					APM Vol 2, Section 1, Chapter 3 - Aerodromes
010.10.01.01	Definitions	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
010.10.01.02	Aerodrome data: conditions of the movement area and related facilities	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
010.10.01.03	Visual aids for navigation:	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
	(a) indicators and signalling devices;	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
	(b) markings;	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
	(c) lights;	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
	(d) signs;	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
	(e) markers.	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
010.10.01.04	Visual aids for denoting obstacles:	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
	(a) marking of objects;	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
	(b) lighting of objects.	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
010.10.01.05	Visual aids for denoting restricted use of areas	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
010.10.01.06	Emergency and other services:					APM Vol 2, Section 1, Chapter 3 - Aerodromes
	(a) rescue and fire fighting;	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
	(b) apron management service.	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
010.11.00.00	Annex 12: Search and rescue					APM Vol 2, Section 1, Chapter 13 - Search and Rescue
010.11.01.01	Essential definitions	×		×		APM Vol 2, Section 1, Chapter 13 - Search and Rescue
010.11.01.02	Operating procedures:	×		×		APM Vol 2, Section 1, Chapter 13 - Search and Rescue
	(a) procedures for PIC at the scene of an accident;	×		×		APM Vol 2, Section 1, Chapter 13 - Search and Rescue
	(b) procedures for PIC intercepting a distress transmission;	×		×		APM Vol 2, Section 1, Chapter 13 - Search and Rescue
	(c) search and rescue signals.	×		×		APM Vol 2, Section 1, Chapter 13 - Search and Rescue
010.11.01.03	Search and rescue signals:					APM Vol 2, Section 1, Chapter 13 - Search and Rescue
	(a) signals with surface craft;	×		×		APM Vol 2, Section 1, Chapter 13 - Search and Rescue
	(b) ground or air visual signal code;	×		×		APM Vol 2, Section 1, Chapter 13 - Search and Rescue
	(c) air or ground signals.	×		×		APM Vol 2, Section 1, Chapter 13 - Search and Rescue
010.12.00.00	Annex 17: Security					APM Vol 2, Section 1, Chapter 3 - Aerodromes
010.12.01.01	General: aims and objectives	×		×		APM Vol 2, Section 1, Chapter 3 - Aerodromes
010.13.00.00	Annex 13: Aircraft accident investigation					APM Vol 2, Section 1, Chapter 14 - Accident Investigation Regs.
010.13.01.01	Essential definitions	×		×		APM Vol 2, Section 1, Chapter 14 - Accident Investigation Regs.
010.13.01.02	Applicability	×		×		APM Vol 2, Section 1, Chapter 14 - Accident Investigation Regs.
010.14.00.00	National law					APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
010.14.01.01	National law and differences to relevant ICAO Annexes and relevant EU regs.	×		×		APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
010.14.01.02	ICAO Annexes and relevant EU regulations.	×		×		APM Vol 2, Section 1, Chapter 15 - ICAO Annex Terminology

020 AIRCRAFT GENERAL KNOWLEDGE (Page1/6)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
020.00.00.00	AIRCRAFT GENERAL KNOWLEDGE					APM Vol 4
021.00.00.00	AIRFRAME AND SYSTEMS, ELECTRICS, POWERPLANT AND EMERGENCY EQUIPMENT					APM Vol 4
021.01.00.00	System design, loads, stresses, maintenance					APM Vol 4, Section 2, Chapter 15 - The Airframe
021.01.01.00	Loads and combination loadings applied to an aircraft's structure	×	×	×	×	APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.00.00	Airframe					APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.01.00	Wings, tail surfaces and control surfaces					APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.01.01	Design and constructions	×	×			APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.01.02	Structural components and materials	×	×			APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.01.03	Stresses	×	×			APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.01.04	Structural limitations	×	×			APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.02.00	Fuselage, doors, floor, wind-screen and windows					APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.02.01	Design and constructions	×	×	×	×	APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.02.02	Structural components and materials	×	×	×	×	APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.02.03	Stresses	×	×	×	×	APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.02.04	Structural limitations	×	×	×	×	APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.03.00	Flight and control surfaces					APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.03.01	Design and constructions			×	×	APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.03.02	Structural components and materials			×	×	APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.03.03	Stresses and aero elastic vibrations			×	×	APM Vol 4, Section 2, Chapter 15 - The Airframe
021.02.03.04	Structural limitations			×	×	APM Vol 4, Section 2, Chapter 15 - The Airframe
	Hydraulics					APM Vol 4, Section 2, Chapter 24 - Landing Gear, Tyres and Brakes
021.03.00.00	Hydromechanics: basic principles	×	×	×	×	APM Vol 4, Section 2, Chapter 24 - Landing Gear, Tyres and Brakes
021.03.01.00	Hydraulic systems	×	×	×	×	APM Vol 4, Section 2, Chapter 24 - Landing Gear, Tyres and Brakes
021.03.01.01	Hydraulic fluids: types and characteristics, limitations	×	×	×	×	APM Vol 4, Section 2, Chapter 24 - Landing Gear, Tyres and Brakes
021.03.01.02	System components: design, operation, degraded modes of operation, indications and warnings	×	×	×	×	APM Vol 4, Section 2, Chapter 24 - Landing Gear, Tyres and Brakes
021.04.00.00	Landing gear, wheels, tyres and brakes					APM Vol 4, Section 2, Chapter 24 - Landing Gear, Tyres and Brakes
021.04.01.00	Landing gear					APM Vol 4, Section 2, Chapter 24 - Landing Gear, Tyres and Brakes
021.04.01.01	Types and materials	×	×	×	×	APM Vol 4, Section 2, Chapter 24 - Landing Gear, Tyres and Brakes
021.04.02.00	Nose wheel steering: design and operation	×	×			APM Vol 4, Section 2, Chapter 24 - Landing Gear, Tyres and Brakes
021.04.03.00	Brakes					APM Vol 4, Section 2, Chapter 24 - Landing Gear, Tyres and Brakes
021.04.03.01	Types and materials	×	×	×	×	APM Vol 4, Section 2, Chapter 24 - Landing Gear, Tyres and Brakes
021.04.03.02	System components: design, operation, indications and warnings	×	×	×	×	APM Vol 4, Section 2, Chapter 24 - Landing Gear, Tyres and Brakes
021.04.04.00	Wheels and tyres					APM Vol 4, Section 2, Chapter 24 - Landing Gear, Tyres and Brakes
021.04.04.01	Types and operational limitations	×	×	×	×	APM Vol 4, Section 2, Chapter 24 - Landing Gear, Tyres and Brakes
021.05.00.00	Helicopter equipment			×	×	-
021.06.00.00	Flight controls					APM Vol 4, Section 1, Chapter 8 - Control
021.06.01.01	Mechanical or powered	×	×	×	×	APM Vol 4, Section 1, Chapter 8 - Control
021.06.01.02	Control systems and mechanical	×	×	×	×	APM Vol 4, Section 1, Chapter 8 - Control
021.06.01.03	System components: design, operation, indications and warnings, degraded modes of operation and jamming	×	×	×	×	APM Vol 4, Section 1, Chapter 8 - Control
021.06.02.00	Secondary flight controls					APM Vol 4, Section 1, Chapter 8 - Control
021.06.02.01	System components: design, operation, degraded modes of operation, indications and warnings	×	×			APM Vol 4, Section 1, Chapter 8 - Control
021.06.03.00	Anti-icing systems					APM Vol 4, Section 2, Chapter 15 - The Airframe plus ...
021.06.03.01	Types and operation (pitot and windshield)	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
021.07.00.00	Fuel system					APM Vol 4, Section 2, Chapter 18 - The Fuel System

020 AIRCRAFT GENERAL KNOWLEDGE (Page 2/6)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
021.07.01.00	Piston engine					APM Vol 4, Section 2, Chapter 16 - The Aeroplane Engine
021.07.01.01	System components: design, operation, degraded modes of operation, indications and warnings	×	×	×	×	APM Vol 4, Section 2, Chapter 16 - The Aeroplane Engine
021.07.02.00	Turbine engine					-
021.07.02.01	System components: design, operation, degraded modes of operation, indications and warnings			×	×	-
021.08.00.00	ELECTRICS					APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.01.00	Electrics: general and definitions					APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.01.01	Direct current: voltage, current, resistance, conductivity, Ohm's law, power and work	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.01.02	Alternating current: voltage, current, amplitude, phase, frequency and resistance	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.01.03	Circuits: series and parallel	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.01.04	Magnetic field: effects in an electrical circuit	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.02.00	Batteries					APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.02.01	Types, characteristics and limitations	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.02.02	Battery chargers, characteristics and limitations	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.03.00	Static electricity: general					APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.03.01	Basic principles	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.03.02	Static dischargers	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.03.03	Protection against interference	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.03.04	Lightning effects	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.04.00	Generation: production, distribution and use					APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.04.01	DC generation: types, design, operation, degraded modes of operation, indications and warnings	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.04.02	AC generation: types, design, operation, degraded modes of operation, indications and warnings	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.05.00	Electric components					APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.05.01	Basic elements: basic principles of switches, circuit-breakers and relays	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.06.00	Distribution					APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.08.06.01	General:	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
	(a) bus bar, common earth and priority;	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
	(b) AC and DC comparison.	×	×	×	×	APM Vol 4, Section 2, Chapter 22 - The Electrical System
021.09.00.00	Piston engines					APM Vol 4, Section 2, Chapter 16 - The Aeroplane Engine
021.09.01.00	General					APM Vol 4, Section 2, Chapter 16 - The Aeroplane Engine
021.09.01.01	Types of internal combustion engine: basic principles and definitions	×	×	×	×	APM Vol 4, Section 2, Chapter 16 - The Aeroplane Engine
021.09.01.02	Engine: design, operation, components and materials	×	×	×	×	APM Vol 4, Section 2, Chapter 16 - The Aeroplane Engine
021.09.02.00	Fuel					APM Vol 4, Section 2, Chapter 18 - The Fuel System
021.09.02.01	Types, grades, characteristics and limitations	×	×	×	×	APM Vol 4, Section 2, Chapter 18 - The Fuel System
021.09.02.02	Alternate fuel: characteristics and limitations	×	×	×	×	APM Vol 4, Section 2, Chapter 16 - The Aeroplane Engine
021.09.03.00	Carburettor or injection system					APM Vol 4, Section 2, Chapter 17 - The Carburettor
021.09.03.01	Carburettor: design, operation, degraded modes of operation, indications and warnings	×	×	×	×	APM Vol 4, Section 2, Chapter 17 - The Carburettor
021.09.03.02	Injection: design, operation, degraded modes of operation, indications and warnings	×	×	×	×	APM Vol 4, Section 2, Chapter 17 - The Carburettor
021.09.03.03	Icing	×	×	×	×	APM Vol 4, Section 2, Chapter 17 - The Carburettor
021.09.04.00	Air cooling systems					APM Vol 4, Section 2, Chapter 20 - The Cooling System
021.09.04.01	Design, operation, degraded modes of operation, indications and warnings	×	×	×	×	APM Vol 4, Section 2, Chapter 20 - The Cooling System

020 AIRCRAFT GENERAL KNOWLEDGE (Page 3/6)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
021.09.05.00	Lubrication systems					APM Vol 4, Section 2, Chapter 19 - The Oil System
021.09.05.01	Lubricants: types, characteristics and limitations	×	×	×	×	APM Vol 4, Section 2, Chapter 19 - The Oil System
021.09.05.02	Design, operation, degraded modes of operation, indications and warnings	×	×	×	×	APM Vol 4, Section 2, Chapter 19 - The Oil System
021.09.06.00	Ignition circuits					APM Vol 4, Section 2, Chapter 16 - The Aeroplane Engine
021.09.06.01	Design, operation, degraded modes of operation	×	×	×	×	APM Vol 4, Section 2, Chapter 16 - The Aeroplane Engine
021.09.07.00	Mixture					APM Vol 4, Section 2, Chapter 17 - The Carburettor
021.09.07.01	Definition, characteristic mixtures, control instruments, associated control levers and indications	×	×	×	×	APM Vol 4, Section 2, Chapter 17 - The Carburettor
021.09.08.00	Propellers					APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller and APM Vol 4, Section 2, Chapter 21 - Engine Handling
021.09.08.01	Definitions and general:	×	×			APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller
	(a) aerodynamic parameters;	×	×			APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller
	(b) types;	×	×			APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller
	(c) operating modes.	×	×			APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller
021.09.08.02	Constant speed propeller: design, operation and system components	×	×			APM Vol 4, Section 2, Chapter 21 - Engine Handling
021.09.08.03	Propeller handling: associated control levers, degraded modes of operation, indications and warnings	×	×			APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller and APM Vol 4, Section 2, Chapter 21 - Engine Handling
021.09.09.00	Performance and engine handling					APM Vol 4, Section 2, Chapter 21 - Engine Handling
021.09.09.01	Performance: influence of engine parameters, influence of atmospheric conditions, limitations and power augmentation systems	×	×	×	×	APM Vol 4, Section 2, Chapter 21 - Engine Handling
021.09.09.02	Engine handling: power and mixture settings during various flight phases and operational limitations	×	×	×	×	APM Vol 4, Section 2, Chapter 21 - Engine Handling
021.10.00.00	Turbine engines					-
021.10.01.00	Definitions			×	×	-
021.10.01.01	Coupled turbine engine: design, operation, components and materials			×	×	-
021.10.01.02	Free turbine engine: design, operation, components and materials			×	×	-
021.10.02.00	Fuel					-
021.10.02.01	Types, characteristics and limitations			×	×	-
021.10.03.00	Main engine components					-
021.10.03.01	Compressor:			×	×	-
	(a) types, design, operation, components and materials;			×	×	-
	(b) stresses and limitations;			×	×	-
	(c) stall, surge and means of prevention.			×	×	-
021.10.03.02	Combustion chamber:			×	×	-
	(a) types, design, operation, components and materials;			×	×	-
	(b) stresses and limitations;			×	×	-
	(c) emission problems.			×	×	-
021.10.03.03	Turbine:			×	×	-
	(a) types, design, operation, components and materials;			×	×	-
	(b) stresses, creep and limitations.			×	×	-
021.10.03.04	Exhaust:			×	×	-
	(a) design, operation and materials;			×	×	-
	(b) noise reduction.			×	×	-
021.10.03.05	Fuel control units: types, operation and sensors			×	×	-
021.10.03.06	Helicopter air intake: different types, design, operation, materials and optional equipments			×	×	-
021.10.04.00	Additional components and systems					-
021.10.04.01	Helicopter additional components and systems: lubrication system, ignition circuit, starter, accessory gearbox, free wheel units: design, operation and components			×	×	-

020 AIRCRAFT GENERAL KNOWLEDGE (Page 4/6)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
021.10.05.00	Performance aspects					-
021.10.05.01	Torque, performance aspects, engine handling and limitations:			×	×	-
	(a) engine ratings;			×	×	-
	(b) engine performance and limitations;			×	×	-
	(c) engine handling.			×	×	-
021.11.00.00	Protection and detection systems					-
021.11.01.00	Fire detection systems					-
021.11.01.01	Operation and indications			×	×	-
	Helicopter: Miscellaneous systems					-
021.12.00.00	Rotor design			×	×	-
021.13.00.00	Rotor heads					-
021.13.01.00	Main rotor					-
021.13.01.01	Types			×	×	-
021.13.01.02	Structural components and materials, stresses and structural limitations			×	×	-
021.13.01.03	Design and construction			×	×	-
021.13.01.04	Adjustment			×	×	-
021.13.02.00	Tail rotor					-
021.13.02.01	Types			×	×	-
021.13.02.02	Structural components and materials, stresses and structural limitations			×	×	-
021.13.02.03	Design and construction			×	×	-
021.13.02.04	Adjustment			×	×	-
021.14.00.00	Transmission					-
021.14.01.00	Main gear box					-
021.14.01.01	Different types, design, operation and limitations			×	×	-
021.14.02.00	Rotor brake					-
021.14.02.01	Different types, design, operation and limitations			×	×	-
021.15.00.00	Auxiliary systems			×	×	-
021.16.00.00	Drive shaft and associated installation			×	×	-
021.16.01.00	Intermediate and tail gear box					-
021.16.01.01	Different types, design, operation and limitations			×	×	-
021.17.00.00	Blades					-
021.17.01.00	Main rotor blade					-
021.17.01.01	Design and construction			×	×	-
021.17.01.02	Structural components and materials			×	×	-
021.17.01.03	Stresses			×	×	-
021.17.01.04	Structural limitations			×	×	-
021.17.01.05	Adjustment			×	×	-
021.17.01.06	Tip shape			×	×	-
021.17.02.00	Tail rotor blade					-
021.17.02.01	Design and construction			×	×	-
021.17.02.02	Structural components and materials			×	×	-
021.17.02.03	Stresses			×	×	-
021.17.02.04	Structural limitations			×	×	-
021.17.02.05	Adjustment			×	×	-
022.00.00.00	INSTRUMENTATION					APM Vol 4, Section 3 – Flight Instruments
022.01.00.00	Instrument and indication systems					APM Vol 4, Section 3 – Flight Instruments
022.01.01.00	Pressure gauge					APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.01.01.01	Different types, design, operation, characteristics and accuracy	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments

020 AIRCRAFT GENERAL KNOWLEDGE (Page 5/6)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
022.01.02.00	Temperature sensing					APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.01.02.01	Different types, design, operation, characteristics and accuracy	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.01.03.00	Fuel gauge					APM Vol 4, Section 2, Chapter 18 - The Fuel System
022.01.03.01	Different types, design, operation, characteristics and accuracy	×	×	×	×	APM Vol 4, Section 2, Chapter 18 - The Fuel System
022.01.04.00	Flow meter					APM Vol 4, Section 2, Chapter 18 - The Fuel System
022.01.04.01	Different types, design, operation, characteristics and accuracy	×	×	×	×	APM Vol 4, Section 2, Chapter 18 - The Fuel System
022.01.05.00	Position transmitter					APM Vol 6, Section 2, Chapter 12 - Survival
022.01.05.01	Different types, design, operation, characteristics and accuracy	×	×	×	×	APM Vol 6, Section 2, Chapter 12 - Survival
022.01.06.00	Torque meter					-
022.01.06.01	Design, operation, characteristics and accuracy			×	×	-
022.01.07.00	Tachometer					APM Vol 4, Section 2, Chapter 16 - The Aeroplane Engine
022.01.07.01	Design, operation, characteristics and accuracy	×	×	×	×	APM Vol 4, Section 2, Chapter 16 - The Aeroplane Engine
022.02.00.00	Measurement of aerodynamic parameters					APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.01.00	Pressure measurement					APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.01.01	Static pressure, dynamic pressure, density and definitions	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.01.02	Design, operation, errors and accuracy	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.02.00	Temperature measurement: aeroplane					APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.02.01	Design, operation, errors and accuracy	×	×			APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.02.02	Displays	×	×			APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.03.00	Temperature measurement: helicopter					-
022.02.03.01	Design, operation, errors and accuracy			×	×	-
022.02.03.02	Displays			×	×	-
022.02.04.00	Altimeter					APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.04.01	Standard atmosphere	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.04.02	The different barometric references (QNH, QFE and 1013.25)	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.04.03	Height, indicated altitude, true altitude, pressure altitude and density altitude	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.04.04	Design, operation, errors and accuracy	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.04.05	Displays	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.05.00	Vertical speed indicator					APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.05.01	Design, operation, errors and accuracy	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.05.02	Displays	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.06.00	Air speed indicator					APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.06.01	The different speeds IAS, CAS, TAS: definition, usage and relationships	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.06.02	Design, operation, errors and accuracy	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
022.02.06.03	Displays	×	×	×	×	APM Vol 4, Section 3, Chapter 25 - Pressure Instruments
	Magnetism: direct reading compass					APM Vol 4, Section 3, Chapter 27 - The Magnetic Compass
022.03.00.00	Earth magnetic field	×	×	×	×	APM Vol 4, Section 3, Chapter 27 - The Magnetic Compass
022.03.01.00	Direct reading compass					APM Vol 4, Section 3, Chapter 27 - The Magnetic Compass
022.03.01.01	Design, operation, data processing, accuracy and deviation	×	×	×	×	APM Vol 4, Section 3, Chapter 27 - The Magnetic Compass
022.03.01.02	Turning and acceleration errors	×	×	×	×	APM Vol 4, Section 3, Chapter 27 - The Magnetic Compass
022.04.00.00	Gyroscopic instruments					APM Vol 4, Section 3, Chapter 26 - Gyroscopic Instruments
022.04.01.00	Gyroscope: basic principles					APM Vol 4, Section 3, Chapter 26 - Gyroscopic Instruments
022.04.01.01	Definitions and design	×	×	×	×	APM Vol 4, Section 3, Chapter 26 - Gyroscopic Instruments
022.04.01.02	Fundamental properties	×	×	×	×	APM Vol 4, Section 3, Chapter 26 - Gyroscopic Instruments
022.04.01.03	Drifts	×	×	×	×	APM Vol 4, Section 3, Chapter 26 - Gyroscopic Instruments

020 AIRCRAFT GENERAL KNOWLEDGE (Page 6/6)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
022.04.02.00	Turn and bank indicator					APM Vol 4, Section 3, Chapter 26 - Gyroscopic Instruments
022.04.02.01	Design, operation and errors	×	×	×	×	APM Vol 4, Section 3, Chapter 26 - Gyroscopic Instruments
022.04.03.00	Attitude indicator					APM Vol 4, Section 3, Chapter 26 - Gyroscopic Instruments
022.04.03.01	Design, operation, errors and accuracy	×	×	×	×	APM Vol 4, Section 3, Chapter 26 - Gyroscopic Instruments
022.04.04.00	Directional gyroscope					APM Vol 4, Section 3, Chapter 26 - Gyroscopic Instruments
022.04.04.01	Design, operation, errors and accuracy	×	×	×	×	APM Vol 4, Section 3, Chapter 26 - Gyroscopic Instruments
022.05.00.00	Communication systems					APM Vol 7, Section 1, Chapter 1, Section 5, Chapters 12 & 13
022.05.01.00	Transmission modes: VHF, HF and SATCOM					APM Vol 7, Section 1, Chapter 1, Section 5, Chapters 12 & 13
022.05.01.01	Principles, bandwidth, operational limitations and use	×	×	×	×	APM Vol 7, Section 1, Chapter 1, Section 5, Chapters 12 & 13
022.05.02.00	Voice communication					APM Vol 7, Section 1, Chapter 1, Section 5, Chapters 12 & 13
022.05.02.01	Definitions, general and applications	×	×	×	×	APM Vol 7, Section 1, Chapter 1, Section 5, Chapters 12 & 13
022.06.00.00	Alerting systems and proximity systems					APM Vol 7, Section 1, Chapter 1 - Cockpit Radios
022.06.01.00	Flight warning systems					APM Vol 7, Section 1, Chapter 1 - Cockpit Radios
022.06.01.01	Design, operation, indications and alarms	×	×	×	×	APM Vol 7, Section 1, Chapter 1 - Cockpit Radios
022.06.02.00	Stall warning					APM Vol 4, Section 3, Chapter 28 - Appendix
022.06.02.01	Design, operation, indications and alarms	×	×			APM Vol 4, Section 3, Chapter 28 - Appendix
022.06.03.00	Radio-altimeter					-
022.06.03.01	Design, operation, errors, accuracy and indications			×	×	-
022.06.04.00	Rotor or engine over speed alert system					-
022.06.04.01	Design, operation, displays and alarms			×	×	-
022.07.00.00	Integrated instruments: electronic displays					APM Vol 4, Section 3, Chapter 28 - Appendix and APM Vol 5, Section 1, Chapter 2 - The Instruments
022.07.01.00	Display units					APM Vol 4, Section 3, Chapter 28 - Appendix and APM Vol 5, Section 1, Chapter 2 - The Instruments
022.07.01.01	Design, different technologies and limitations	×	×	×	×	APM Vol 4, Section 3, Chapter 28 - Appendix and APM Vol 5, Section 1, Chapter 2 - The Instruments

030 FLIGHT PERFORMANCE & PLANNING (Page 1/3)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
030.00.00.00	FLIGHT PERFORMANCE AND PLANNING					APM Vol 4
031.00.00.00	MASS AND BALANCE: AEROPLANES OR HELICOPTERS					APM Vol 4
031.01.00.00	Purpose of mass and balance considerations					APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.01.01.00	Mass limitations					APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.01.01.01	Importance in regard to structural limitations	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.01.01.02	Importance in regard to performance limitations	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.01.02.00	CG limitations					APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.01.02.01	Importance in regard to stability and controllability	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance and APM Vol 4, Section 1, Chapter 7 - Stability
031.01.02.02	Importance in regard to performance	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.02.00.00	Loading					APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.02.01.00	Terminology					APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.02.01.01	Mass terms	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.02.01.02	Load terms (including fuel terms)	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.02.02.00	Mass limits					APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.02.02.01	Structural limitations	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.02.02.02	Performance limitations	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.02.02.03	Baggage compartment limitations	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.02.03.00	Mass calculations					APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.02.03.01	Maximum masses for take-off and landing	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.02.03.02	Use of standard masses for passengers, baggage and crew	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.02.04.00	Fundamentals of CG calculations					APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.02.04.01	Definition of centre of gravity	×	×	×	×	APM Vol 4, Section 1, Chapter 2 - Weight
031.02.04.02	Conditions of equilibrium (balance of forces and balance of moments)	×	×	×	×	APM Vol 4, Section 1, Chapter 7 - Stability
031.02.04.03	Basic calculations of CG	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.03.00.00	Mass and balance details of aircraft					APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.03.01.00	Contents of mass and balance documentation					APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.03.01.01	Datum and moment arm	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.03.01.02	CG position as distance from datum	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.03.02.00	Extraction of basic mass and balance data from aircraft documentation					APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.03.02.01	BEM	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.03.02.02	CG position or moment at BEM	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.03.02.03	Deviations from standard configuration	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.04.00.00	Determination of CG position					APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.04.01.00	Methods					APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.04.01.01	Arithmetic method	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.04.01.02	Graphic method	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.04.02.00	Load and trim sheet					APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.04.02.01	General considerations	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
031.04.02.02	Load sheet and CG envelope for light aeroplanes and for helicopters	×	×	×	×	APM Vol 4, Section 4, Chapter 34 - Mass and Balance
032.00.00.00	PERFORMANCE: AEROPLANES					APM Vol 4, Section 4 - Airworthiness, Flight Performance and Planning
032.01.01.00	Introduction					APM Vol 4, Section 4 - Airworthiness, Flight Performance and Planning
032.01.01.01	Performance classes	×	×			APM Vol 4, Section 4, Chapter 34 - Mass and Balance
032.01.01.02	Stages of flight	×	×			APM Vol 4, Section 4, Chapter 32 - Take-Off and Landing Performance, Chapter 33 - En route Performance. APM Vol 4 Section 1, Chapter 3 - Aerofoil Lift, Chapter 4/5 - Drag, Chapter 10 - Straight and Level, Chapter 11 - Climbing, Chapter 12 - Descending

030 FLIGHT PERFORMANCE & PLANNING (Page 2/3)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
032.01.01.03	Effect of aeroplane mass, wind, altitude, runway slope and runway conditions	×	×			APM Vol 4, Section 4, Chapter 31 - The Atmosphere, Chapter 32 - Take-Off and Landing Performance, Chapter 33 - En route Performance.
032.01.01.04	Gradients	×	×			APM Vol 4, Section 4, Chapter 32 - Take-Off and Landing Performance
032.01.02.00	SE aeroplanes					APM Vol 4, Section 4, Chapter 30 - Airframe Limitations, Chapter 32 - Take-Off and Landing Performance, Chapter 33 - En route Performance. APM Vol 4 Section 1, Chapter 10 - Straight and Level, Chapter 11 - Climbing, Chapter 12 - Descending
032.01.02.01	Definitions of terms and speeds	×	×			APM Vol 4, Section 4, Chapter 30 - Airframe Limitations, Chapter 32 - Take-Off and Landing Performance, Chapter 33 - En route Performance. APM Vol 4 Section 1, Chapter 10 - Straight and Level, Chapter 11 - Climbing, Chapter 12 - Descending
032.01.03.00	Take-off and landing performance					APM Vol 4, Section 4, Chapter 32 - Take-Off and Landing Performance
032.01.03.01	Use of aeroplane flight manual data	×	×			APM Vol 4, Section 4, Chapter 32 - Take-Off and Landing Performance
032.01.04.00	Climb and cruise performance					APM Vol 4, Section 4, Chapter 32 - Take-Off and Landing Performance, Chapter 33 - En route Performance
032.01.04.01	Use of aeroplane flight data	×	×			APM Vol 4, Section 4, Chapter 32 - Take-Off and Landing Performance, Chapter 33 - En route Performance
032.01.04.02	Effect of density altitude and aeroplane mass	×	×			APM Vol 4, Section 4, Chapter 31 - The Atmosphere, Chapter 32 - Take-Off and Landing Performance, Chapter 33 - En route Performance
032.01.04.03	Endurance and the effects of the different recommended power or thrust settings	×	×			APM Vol 4, Section 4, Chapter 33 - En route Performance
032.01.04.04	Still air range with various power or thrust settings	×	×			APM Vol 4, Section 4, Chapter 33 - En route Performance
033.00.00.00	FLIGHT PLANNING AND FLIGHT MONITORING					APM Vol 3 and Vol 4
033.01.00.00	Flight planning for VFR flights					APM Vol 3
033.01.01.00	VFR navigation plan					APM Vol 3
033.01.01.01	Routes, airfields, heights and altitudes from VFR charts	×	×	×	×	APM Vol 3, Section 2, Chapter 5 - Introduction to Introduction to Navigation Under Visual Flight Rules, Chapter 6 - The Route Plan, Chapter 7 - Vertical Navigation
033.01.01.02	Courses and distances from VFR charts	×	×	×	×	APM Vol 3, Section 2, Chapter 6 - The Route Plan
033.01.01.03	Aerodrome charts and aerodrome directory	×	×	×	×	APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation, APM Vol 2, Section 1, Chapter 3 - Aerodromes, APM Vol 6, Operational Procedures, Chapter 2 - Noise Abatement Procedures
033.01.01.04	Communications and radio navigation planning data	×	×	×	×	APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation, APM Vol 3, Section 4 - En Route Navigation with Radio Navigation Aids
033.01.01.04	Completion of navigation plan	×	×	×	×	APM 3, Section 2 - Pre Flight Planning
033.01.02.00	Fuel planning					APM Vol 3, Section 2, Chapter 10 - Timing and Fuel Management
033.01.02.01	General knowledge	×	×	×	×	APM Vol 3, Section 2, Chapter 10 - Timing and Fuel Management
033.01.03.00	Pre-flight calculation of fuel required					APM Vol 3, Section 2, Chapter 10 - Timing and Fuel Management
033.01.03.01	Calculation of extra fuel	×	×	×	×	APM Vol 3, Section 2, Chapter 10 - Timing and Fuel Management
033.01.03.02	Completion of the fuel section of the navigation plan (fuel log) and calculation of total fuel	×	×	×	×	APM Vol 3, Section 2, Chapter 10 - Timing and Fuel Management
033.02.00.00	Pre-flight preparation					APM Vol 3, Section 2 - Pre Flight Planning
033.02.01.00	AIP and NOTAM briefing					APM Vol 2, Section 1, Chapter 1 - Aviation Law and Legislation
033.02.01.01	Ground facilities and services	×	×	×	×	APM Vol 2, Section 1, Chapter 3 - Aerodromes, APM Vol 3, Section 2, Chapter 5 - Introduction to Pre Flight Planning, Chapter 6 - The Route Plan
033.02.01.02	Departure, destination and alternate aerodromes	×	×	×	×	APM Vol 2, Section 1, Chapter 3 - Aerodromes, APM Vol 3, Section 2, Chapter 5 - Introduction to Pre Flight Planning, Chapter 6 - The Route Plan
033.02.01.03	Airway routings and airspace structure	×	×	×	×	APM Vol 2, Section 1, Chapter 5 - Airspace

030 FLIGHT PERFORMANCE & PLANNING (Page 3/3)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
033.02.02.00	Meteorological briefing					APM Vol 3, Section 3, Chapter 14 - Navigation in Bad Weather and Degraded Visual Environments, APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
033.02.02.01	Extraction and analysis of relevant data from meteorological documents	×	×	×	×	APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
033.03.00.00	ICAO flight plan (ATS flight plan)					APM Vol 3, Section 2, Chapter 11 - The Flight Plan Form
033.03.01.00	Individual flight plan					APM Vol 3, Section 2, Chapter 11 - The Flight Plan Form
033.03.01.01	Format of flight plan	×	×	×	×	APM Vol 3, Section 2, Chapter 11 - The Flight Plan Form
033.03.01.02	Completion of the flight plan	×	×	×	×	APM Vol 3, Section 2, Chapter 11 - The Flight Plan Form
033.03.01.03	Submission of the flight plan	×	×	×	×	APM Vol 3, Section 2, Chapter 11 - The Flight Plan Form
033.04.00.00	Flight monitoring and in-flight replanning					APM Vol 3, Section 3 - En Route Navigation
033.04.01.00	Flight monitoring					APM Vol 3, Section 3 - En Route Navigation
033.04.01.01	Monitoring of track and time	×	×	×	×	APM Vol 3, Section 3, Chapter 12 - En Route Navigation Techniques
033.04.01.02	In-flight fuel management	×	×	×	×	APM Vol 3, Section 2, Chapter 10 - Timing and Fuel Management, APM Vol 3, Section 3, Chapter 12 - En Route Navigation Techniques
033.04.01.03	In-flight re-planning in case of deviation from planned data	×	×	×	×	APM Vol 3, Section 3, Chapter 13 - Off Track Heading Corrections
034.00.00.00	PERFORMANCE: HELICOPTERS					-----
034.01.00.00	General					-----
034.01.01.00	Introduction					-----
034.01.01.01	Stages of flight			×	×	-----
034.01.01.02	Effect on performance of atmospheric, airport or heliport and helicopter conditions			×	×	-----
034.02.00.00	Applicability of airworthiness requirements			×	×	-----
034.03.00.00	Definitions and terminology			×	×	-----
034.03.01.00	Performance: SE helicopters					-----
034.03.01.01	Definitions of terms			×	×	-----
	(a) masses;			×	×	-----
	(b) velocities: V_x , V_y ;			×	×	-----
	(c) velocity of best range and of maximum endurance;			×	×	-----
	(d) power limitations;			×	×	-----
	(e) altitudes.			×	×	-----
034.03.02.00	Take-off, cruise and landing performance			×	×	-----
034.03.02.01	Use and interpretation of diagrams and tables:			×	×	-----
	(a) Take-off:			×	×	-----
	(1) take-off run and distance available;			×	×	-----
	(2) take-off and initial climb;			×	×	-----
	(3) effects of mass, wind and density altitude;			×	×	-----
	(4) effects of ground surface and gradient.			×	×	-----
	(b) Landing:			×	×	-----
	(1) effects of mass, wind, density altitude and approach speed;			×	×	-----
	(2) effects of ground surface and gradient.			×	×	-----
	(c) In-flight:			×	×	-----
	(1) relationship between power required and power available;			×	×	-----
	(2) performance diagram;			×	×	-----
	(3) effects of configuration, mass, temperature and altitude;			×	×	-----
	(4) reduction of performance during climbing turns;			×	×	-----
	(5) autorotation;			×	×	-----
	(6) adverse effects (icing, rain and condition of the airframe).			×	×	-----

040 HUMAN PERFORMANCE (Page 1/3)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
040.00.00.00	HUMAN PERFORMANCE					APM Vol 6
040.01.00.00	Human factors: basic concepts					APM Vol 6, Introduction
040.01.01.00	Human factors in aviation					APM Vol 6, Introduction
040.01.01.01	Becoming a competent pilot	×		×		APM Vol 6, Introduction
040.01.02.00	Basic aviation physiology and health maintenance					APM Vol 6, Section 1, Chapter 1 - Human Physiology and High Altitudes
040.01.02.01	The atmosphere:	×		×		APM Vol 6, Section 1, Chapter 1 - Human Physiology and High Altitudes
	(a) composition;	×		×		APM Vol 6, Section 1, Chapter 1 - Human Physiology and High Altitudes
	(b) gas laws.	×		×		APM Vol 6, Section 1, Chapter 1 - Human Physiology and High Altitudes
040.01.02.02	Respiratory and circulatory systems:					APM Vol 6, Section 1, Chapter 1 - Human Physiology and High Altitudes
	(a) oxygen requirement of tissues;	×		×		APM Vol 6, Section 1, Chapter 1 - Human Physiology and High Altitudes
	(b) functional anatomy;	×		×		APM Vol 6, Section 1, Chapter 1 - Human Physiology and High Altitudes
	(c) main forms of hypoxia (hypoxic and anaemic):	×		×		APM Vol 6, Section 1, Chapter 1 - Human Physiology and High Altitudes
	(1) sources, effects and countermeasures of carbon monoxide;	×		×		APM Vol 6, Section 1, Chapter 1 - Human Physiology and High Altitudes
	(2) counter measures and hypoxia;	×		×		APM Vol 6, Section 1, Chapter 1 - Human Physiology and High Altitudes
	(3) symptoms of hypoxia.	×		×		APM Vol 6, Section 1, Chapter 1 - Human Physiology and High Altitudes
	(d) hyperventilation;	×		×		APM Vol 6, Section 1, Chapter 1 - Human Physiology and High Altitudes
	(e) the effects of accelerations on the circulatory system;	×		×		APM Vol 6, Section 1, Chapter 1 - Human Physiology and High Altitudes
	(f) hypertension and coronary heart disease.	×		×		APM Vol 6, Section 1, Chapter 1 - Human Physiology and High Altitudes
040.02.01.00	Man and environment					APM Vol 6, Section 1, Chapter 6 - Information Processing, Chapter 2 - Eyesight and Visual Illusions, Chapter 3 - Hearing and Balance
040.02.01.01	Central, peripheral and autonomic nervous systems	×		×		APM Vol 6, Section 1, Chapter 6 - Information Processing
040.02.01.02	Vision:					APM Vol 6, Section 1, Chapter 2 - Eyesight and Visual Illusions
	(a) functional anatomy;	×		×		APM Vol 6, Section 1, Chapter 2 - Eyesight and Visual Illusions
	(b) visual field, foveal and peripheral vision;	×		×		APM Vol 6, Section 1, Chapter 2 - Eyesight and Visual Illusions
	(c) binocular and monocular vision;	×		×		APM Vol 6, Section 1, Chapter 2 - Eyesight and Visual Illusions
	(d) monocular vision cues;	×		×		APM Vol 6, Section 1, Chapter 2 - Eyesight and Visual Illusions
	(e) night vision;	×		×		APM Vol 6, Section 1, Chapter 2 - Eyesight and Visual Illusions
	(f) visual scanning and detection techniques and importance of 'look-out';	×		×		APM Vol 6, Section 1, Chapter 2 - Eyesight and Visual Illusions
	(g) defective vision.	×		×		APM Vol 6, Section 1, Chapter 2 - Eyesight and Visual Illusions
040.02.01.03	Hearing:					APM Vol 6, Section 1, Chapter 3 - Hearing and Balance
	(a) descriptive and functional anatomy;	×		×		APM Vol 6, Section 1, Chapter 3 - Hearing and Balance
	(b) flight related hazards to hearing;	×		×		APM Vol 6, Section 1, Chapter 3 - Hearing and Balance
	(c) hearing loss.	×		×		APM Vol 6, Section 1, Chapter 3 - Hearing and Balance
040.02.01.04	Equilibrium:					APM Vol 6, Section 1, Chapter 3 - Hearing and Balance
	(a) functional anatomy;	×		×		APM Vol 6, Section 1, Chapter 3 - Hearing and Balance
	(b) motion and acceleration;	×		×		APM Vol 6, Section 1, Chapter 3 - Hearing and Balance
	(c) motion sickness.	×		×		APM Vol 6, Section 1, Chapter 3 - Hearing and Balance
040.02.01.05	Integration of sensory inputs:	×		×		APM Vol 6, Section 1, Chapter 3 - Hearing and Balance
	(a) spatial disorientation: forms, recognition and avoidance;	×		×		APM Vol 6, Section 1, Chapter 3 - Hearing and Balance
	(b) illusions: forms, recognition and avoidance:	×		×		APM Vol 6, Section 1, Chapter 3 - Hearing and Balance
	(1) physical origin;	×		×		APM Vol 6, Section 1, Chapter 3 - Hearing and Balance
	(2) physiological origin;	×		×		APM Vol 6, Section 1, Chapter 3 - Hearing and Balance
	(3) psychological origin.	×		×		APM Vol 6, Section 1, Chapter 3 - Hearing and Balance
	(c) approach and landing problems.	×		×		APM Vol 6, Section 1, Chapter 3 - Hearing and Balance

040 HUMAN PERFORMANCE (Page 2/3)

B.C. = BRIDGE COURSE

Syllabus Reference	Syllabus Details & Associated Learning Objective	AEROPLANE		HELICOPTER		
		PPL	B.C.	PPL	B.C.	
040.03.00.00	Health and hygiene					APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
040.03.01.01	Personal hygiene: personal fitness	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
040.03.01.02	Body rhythm and sleep:	×		×		APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep
	(a) rhythm disturbances;	×		×		APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep
	(b) symptoms, effects and management.	×		×		APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep
040.03.01.03	Problem areas for pilots:	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
	(a) common minor ailments including cold, influenza and gastro-intestinal upset;	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
	(b) entrapped gases and barotrauma, (scuba diving);	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
	(c) obesity;	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
	(d) food hygiene;	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
	(e) infectious diseases;	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
	(f) nutrition;	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
	(g) various toxic gases and materials.	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
040.03.01.04	Intoxication:	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
	(a) prescribed medication;	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
	(b) tobacco;	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
	(c) alcohol and drugs;	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
	(d) caffeine;	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
	(e) self-medication.	×		×		APM Vol 6, Section 1, Chapter 4 - Am I Fit to Fly?
040.04.00.00	Basic aviation psychology					APM Vol 6, Section 1, Chapter 6 - Information Processing
040.04.01.00	Human information processing					APM Vol 6, Section 1, Chapter 6 - Information Processing
040.04.01.01	Attention and vigilance:	×		×		APM Vol 6, Section 1, Chapter 6 - Information Processing
	(a) selectivity of attention;	×		×		APM Vol 6, Section 1, Chapter 6 - Information Processing
	(b) divided attention.	×		×		APM Vol 6, Section 1, Chapter 6 - Information Processing
040.04.01.02	Perception:	×		×		APM Vol 6, Section 1, Chapter 6 - Information Processing
	(a) perceptual illusions;	×		×		APM Vol 6, Section 1, Chapter 6 - Information Processing
	(b) subjectivity of perception;	×		×		APM Vol 6, Section 1, Chapter 6 - Information Processing
	(c) processes of perception.	×		×		APM Vol 6, Section 1, Chapter 6 - Information Processing
040.04.01.03	Memory:	×		×		APM Vol 6, Section 1, Chapter 6 - Information Processing
	(a) sensory memory;	×		×		APM Vol 6, Section 1, Chapter 6 - Information Processing
	(b) working or short term memory;	×		×		APM Vol 6, Section 1, Chapter 6 - Information Processing
	(c) long term memory to include motor memory (skills).	×		×		APM Vol 6, Section 1, Chapter 6 - Information Processing
040.05.00.00	Human error and reliability					APM Vol 6, Section 1, Chapter 7 - Judgement and Decision-Making
040.05.01.01	Reliability of human behaviour	×		×		APM Vol 6, Section 1, Chapter 7 - Judgement and Decision-Making
040.05.01.02	Error generation: social environment (group, organisation)	×		×		APM Vol 6, Section 1, Chapter 7 - Judgement and Decision-Making
040.06.00.00	Decision making					APM Vol 6, Section 1, Chapter 7 - Judgement and Decision-Making
040.06.01.01	Decision-making concepts:	×		×		APM Vol 6, Section 1, Chapter 7 - Judgement and Decision-Making
	(a) structure (phases);	×		×		APM Vol 6, Section 1, Chapter 7 - Judgement and Decision-Making
	(b) limits;	×		×		APM Vol 6, Section 1, Chapter 7 - Judgement and Decision-Making
	(c) risk assessment;	×		×		APM Vol 6, Section 1, Chapter 7 - Judgement and Decision-Making
	(d) practical application.	×		×		APM Vol 6, Section 1, Chapter 7 - Judgement and Decision-Making

040 HUMAN PERFORMANCE (Page 3/3)

B.C. = BRIDGE COURSE

Syllabus Reference	Syllabus Details & Associated Learning Objective	AEROPLANE		HELICOPTER		
		PPL	B.C.	PPL	B.C.	
040.07.00.00	Avoiding and managing errors: cockpit management					APM Vol 6, Section 1, Chapter 8 - Airmanship and Threat and Error Management
040.07.01.01	Safety awareness:	×		×		APM Vol 6, Section 1, Chapter 8 - Airmanship and Threat and Error Management
	(a) risk area awareness;	×		×		APM Vol 6, Section 1, Chapter 8 - Airmanship and Threat and Error Management
	(b) situational awareness.	×		×		APM Vol 6, Section 1, Chapter 8 - Airmanship and Threat and Error Management
040.07.01.02	Communication: verbal and non-verbal communication	×		×		APM Vol 6, Section 1, Chapter 8 - Airmanship and Threat and Error Management
040.08.00.00	Human behaviour					APM Vol 6, Section 1, Chapter 7 - Judgement and Decision-Making
040.08.01.01	Personality and attitudes:	×		×		APM Vol 6, Section 1, Chapter 7 - Judgement and Decision-Making
	(a) development;	×		×		APM Vol 6, Section 1, Chapter 7 - Judgement and Decision-Making
	(b) environmental influences.	×		×		APM Vol 6, Section 1, Chapter 7 - Judgement and Decision-Making
040.08.01.02	Identification of hazardous attitudes (error proneness)	×		×		APM Vol 6, Section 1, Chapter 7 - Judgement and Decision-Making
040.09.01.00	Human overload and underload					APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep
040.09.01.01	Arousal	×		×		APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep
040.09.01.02	Stress:	×		×		APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep
	(a) definition(s);	×		×		APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep
	(b) anxiety and stress;	×		×		APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep
	(c) effects of stress.	×		×		APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep
040.09.01.03	Fatigue and stress management:	×		×		APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep
	(a) types, causes and symptoms of fatigue;	×		×		APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep
	(b) effects of fatigue;	×		×		APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep
	(c) coping strategies;	×		×		APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep
	(d) management techniques;	×		×		APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep
	(e) health and fitness programmes;	×		×		APM Vol 6, Section 1, Chapter 5 - Stress Management, Fatigue and Sleep

050 METEOROLOGY (Page 1/4)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
050.00.00.00	METEOROLOGY					APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.01.00.00	The atmosphere					APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.01.01.00	Composition, extent and vertical division					APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.01.01.01	Structure of the atmosphere	×		×		APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.01.01.02	Troposphere	×		×		APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.01.02.00	Air temperature					APM Vol 2, Section 2, Chapter 17 - Heating Effects in the Atmosphere
050.01.02.01	Definition and units	×		×		APM Vol 2, Section 2, Chapter 17 - Heating Effects in the Atmosphere
050.01.02.02	Vertical distribution of temperature Transfer of heat	×		×		APM Vol 2, Section 2, Chapter 17 - Heating Effects in the Atmosphere
050.01.02.03	Lapse rates, stability and instability	×		×		APM Vol 2, Section 2, Chapter 17 - Heating Effects in the Atmosphere
050.01.02.04	Development of inversions and types of inversions	×		×		APM Vol 2, Section 2, Chapter 17 - Heating Effects in the Atmosphere
050.01.02.05	Temperature near the earth's surface, surface effects, diurnal and seasonal variation, effect of clouds and effect of wind	×		×		APM Vol 2, Section 2, Chapter 17 - Heating Effects in the Atmosphere
050.01.03.00	Atmospheric pressure					APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.01.03.01	Barometric pressure and isobars	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.01.03.02	Pressure variation with height	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.01.03.03	Reduction of pressure to mean sea level	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.01.03.04	Relationship between surface pressure centres and pressure centres aloft	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.01.04.00	Air density					APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.01.04.01	Relationship between pressure, temperature and density	×		×		APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.01.04.02	ISA	×		×		APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.02.00.00	ICAO standard atmosphere	×		×		APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.02.01.00	Altimetry					APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.02.01.01	Terminology and definitions	×		×		APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.02.01.02	Altimeter and altimeter settings	×		×		APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.02.01.03	Calculations	×		×		APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.02.01.04	Effect of accelerated airflow due to topography	×		×		APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.03.00.00	WIND					APM Vol 2, Section 2, Chapter 18 - Wind
050.03.01.00	Definition and measurement of wind					APM Vol 2, Section 2, Chapter 18 - Wind
050.03.01.01	Definition and measurement	×		×		APM Vol 2, Section 2, Chapter 18 - Wind
050.03.02.00	Primary cause of wind					APM Vol 2, Section 2, Chapter 18 - Wind
050.03.02.01	Primary cause of wind, pressure gradient, coriolis force and gradient wind	×		×		APM Vol 2, Section 2, Chapter 18 - Wind
050.03.02.02	Variation of wind in the friction layer	×		×		APM Vol 2, Section 2, Chapter 18 - Wind
050.03.02.03	Effects of convergence and divergence	×		×		APM Vol 2, Section 2, Chapter 18 - Wind
050.03.03.00	General global circulation					APM Vol 2, Section 2, Chapter 17 - Heating Effects in the Atmosphere
050.03.03.01	General circulation around the globe	×		×		APM Vol 2, Section 2, Chapter 17 - Heating Effects in the Atmosphere
050.03.04.00	Local winds					APM Vol 2, Section 2, Chapter 18 - Wind
050.03.04.01	Anabatic and katabatic winds, mountain and valley winds, Venturi effects, land and sea breezes	×		×		APM Vol 2, Section 2, Chapter 18 - Wind
050.03.05.00	Mountain waves (standing waves, lee waves)					APM Vol 2, Section 2, Chapter 18 - Wind
050.03.05.01	Origin and characteristics	×		×		APM Vol 2, Section 2, Chapter 18 - Wind
050.03.06.00	Turbulence					APM Vol 2, Section 2, Chapter 18 - Wind
050.03.06.01	Description and types of turbulence	×		×		APM Vol 2, Section 2, Chapter 18 - Wind
050.03.06.02	Formation and location of turbulence	×		×		APM Vol 2, Section 2, Chapter 18 - Wind

050 METEOROLOGY (Page 2/4)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
050.04.00.00	THERMODYNAMICS					APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.04.01.00	Humidity					APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.04.01.01	Water vapour in the atmosphere	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.04.01.02	Mixing ratio	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.04.01.03	Temperature/dew point, relative humidity	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.04.02.00	Change of state of aggregation					APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.04.02.01	Condensation, evaporation, sublimation, freezing and melting, latent heat	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.04.03.00	Adiabatic processes					APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.04.03.01	Adiabatic processes, stability of the atmosphere	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.05.00.00	CLOUDS AND FOG					APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.05.01.00	Cloud formation and description					APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.05.01.01	Cooling by adiabatic expansion and by advection	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.05.01.02	Cloud types and cloud classification	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.05.01.03	Influence of inversions on cloud development	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.05.02.00	Fog, mist, haze					APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.05.02.01	General aspects	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.05.02.02	Radiation fog	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.05.02.03	Advection fog	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.05.02.04	Steaming fog	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.05.02.05	Frontal fog	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.05.02.06	Orographic fog (hill fog)	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.06.00.00	PRECIPITATION					APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.06.01.00	Development of precipitation					APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.06.01.01	Processes of development of precipitation	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.06.02.00	Types of precipitation					APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.06.02.01	Types of precipitation, relationship with cloud types	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.07.00.00	AIR MASSES AND FRONTS					APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.07.01.00	Air masses					APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.07.01.01	Description, classification and source regions of air masses	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.07.01.02	Modifications of air masses	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.07.02.00	Fronts					APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.07.02.01	General aspects	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.07.02.02	Warm front, associated clouds and weather	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.07.02.03	Cold front, associated clouds and weather	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.07.02.04	Warm sector, associated clouds and weather	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.07.02.05	Weather behind the cold front	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.07.02.06	Occlusions, associated clouds and weather	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.07.02.07	Stationary front, associated clouds and weather	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.07.02.08	Movement of fronts and pressure systems, life cycle	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.07.02.09	Changes of meteorological elements at a frontal wave	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.08.00.00	PRESSURE SYSTEMS					APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.08.01.00	Anticyclone					APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.08.01.01	Anticyclones, types, general properties, cold and warm anticyclones, ridges and wedges, subsidence	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.08.02.00	Non frontal depressions					APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.08.02.01	Thermal, orographic, polar depressions, troughs	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather

050 METEOROLOGY (Page 3/4)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
050.09.00.00	CLIMATOLOGY					APM Vol 2, Section 2
050.09.01.00	Climatic zones					APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.09.01.01	General seasonal circulation in the troposphere	×		×		APM Vol 2, Section 2, Chapter 17 - Heating Effects in the Atmosphere
050.09.02.00	Typical weather situations in the mid-latitudes					APM Vol 2, Section 2, Chapter 16 - Aviation Meteorology
050.09.02.01	Westerly situation	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.09.02.02	High pressure area	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.09.02.03	Flat pressure pattern	×		×		APM Vol 2, Section 2, Chapter 21 - Air Masses, Pressure Systems & Frontal Weather
050.09.03.00	Local winds and associated weather					APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.09.03.01	e.g. Foehn	×		×		APM Vol 2, Section 2, Chapter 19 - Cloud and Precipitation
050.10.00.00	FLIGHT HAZARDS					APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.01.00	Icing					APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.01.01	Conditions for ice accretion	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.01.02	Types of ice accretion	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.01.03	Hazards of ice accretion, avoidance	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.02.00	Turbulence					APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.02.01	Effects on flight, avoidance	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.03.00	Wind shear					APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.03.01	Definition of wind shear	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.03.02	Weather conditions for wind shear	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.03.03	Effects on flight, avoidance	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.04.00	Thunderstorms					APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.04.01	Conditions for and process of development, forecast, location, type specification	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.04.02	Structure of thunderstorms, life history, squall lines, electricity in the atmosphere, static charges	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.04.03	Electrical discharges	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.04.04	Development and effects of downbursts	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.04.05	Thunderstorm avoidance	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.05.00	Inversions					APM Vol 2, Section 2, Chapter 17 - Heating Effects in the Atmosphere, Chapter 20 - Visibility
050.10.05.01	Influence on aircraft performance	×		×		APM Vol 6, Operational Procedures, Chapter 4 - Windshear and Microburst
050.10.06.00	Hazards in mountainous areas					APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.06.01	Influence of terrain on clouds and precipitation, frontal passage	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.06.02	Vertical movements, mountain waves, wind shear, turbulence, ice accretion	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.06.03	Development and effect of valley inversions	×		×		APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
050.10.07.00	Visibility reducing phenomena					APM Vol 2, Section 2, Chapter 20 - Visibility
050.10.07.01	Reduction of visibility caused by precipitation and obscuration	×		×		APM Vol 2, Section 2, Chapter 20 - Visibility
050.10.07.02	Reduction of visibility caused by other phenomena	×		×		APM Vol 2, Section 2, Chapter 20 - Visibility
050.11.00.00	METEOROLOGICAL INFORMATION					APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.01.00	Observation					APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.01.01	Surface observations	×		×		APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.01.02	Radiosonde observations	×		×		APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.01.03	Satellite observations	×		×		APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.01.04	Weather radar observations	×		×		APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.01.05	Aircraft observations and reporting	×		×		APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports

050 METEOROLOGY (Page 4/4)

B.C. = BRIDGE COURSE

Syllabus Reference	Syllabus Details & Associated Learning Objective	AEROPLANE		HELICOPTER		
		PPL	B.C.	PPL	B.C.	
050.11.02.00	Weather charts					APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.02.01	Significant weather charts	×		×		APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.02.02	Surface charts	×		×		APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.03.00	Information for flight planning					APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.03.01	Aviation weather messages	×		×		APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.03.02	Meteorological broadcasts for aviation	×		×		APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.03.03	Use of meteorological documents	×		×		APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.03.04	Meteorological warnings	×		×		APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.04.00	Meteorological services					APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports
050.11.04.01	World area forecast system and meteorological offices	×		×		APM Vol 2, Section 2, Chapter 23 - Weather Forecasts and Reports

060 NAVIGATION (Page 1/4)

B.C. = BRIDGE COURSE

Syllabus Reference	Syllabus Details & Associated Learning Objective	AEROPLANE		HELICOPTER		
		PPL	B.C.	PPL	B.C.	
060.00.00.00	NAVIGATION					APM Vol 3
061.00.00.00	GENERAL NAVIGATION					APM Vol 3
061.01.00.00	Basics of navigation					APM Vol 3, Section 1, Chapter 1 - The Earth, Chapter 2 - Aeronautical Charts, Chapter 3 - Time, Chapter 4 - The Magnetic Compass and Direction
061.01.01.00	The solar system					APM Vol 3, Section 1, Chapter 1 - The Earth
061.01.01.01	Seasonal and apparent movements of the sun	×		×		APM Vol 3, Section 1, Chapter 1 - The Earth
061.01.02.00	The earth					APM Vol 3, Section 1, Chapter 1 - The Earth
061.01.02.01	Great circle, small circle and rhumb line	×		×		APM Vol 3, Section 1, Chapter 1 - The Earth
061.01.02.02	Latitude and difference of latitude	×		×		APM Vol 3, Section 1, Chapter 1 - The Earth
061.01.02.03	Longitude and difference of longitude	×		×		APM Vol 3, Section 1, Chapter 1 - The Earth
061.01.02.04	Use of latitude and longitude co-ordinates to locate any specific position	×		×		APM Vol 3, Section 1, Chapter 1 - The Earth
061.01.03.00	Time and time conversions					APM Vol 3, Section 1, Chapter 3 - Time
061.01.03.01	Apparent time	×		×		APM Vol 3, Section 1, Chapter 3 - Time
061.01.03.02	UTC	×		×		APM Vol 3, Section 1, Chapter 3 - Time
061.01.03.03	LMT	×		×		APM Vol 3, Section 1, Chapter 3 - Time
061.01.03.04	Standard times	×		×		APM Vol 3, Section 1, Chapter 3 - Time
061.01.03.05	Dateline	×		×		APM Vol 3, Section 1, Chapter 3 - Time
061.01.03.06	Definition of sunrise, sunset and civil twilight	×		×		APM Vol 3, Section 1, Chapter 3 - Time
061.01.04.00	Directions					APM Vol 3, Section 1, Chapter 4 - The Magnetic Compass and Direction
061.01.04.01	True north, magnetic north and compass north	×		×		APM Vol 3, Section 1, Chapter 4 - The Magnetic Compass and Direction
061.01.04.02	Compass deviation	×		×		APM Vol 3, Section 1, Chapter 4 - The Magnetic Compass and Direction
061.01.04.03	Magnetic poles, isogonals, relationship between true and magnetic	×		×		APM Vol 3, Section 1, Chapter 4 - The Magnetic Compass and Direction
061.01.05.00	Distance					APM Vol 3, Section 1, Chapter 1 - The Earth
061.01.05.01	Units of distance and height used in navigation: nautical miles, statute miles, kilometres, metres and ft	×		×		APM Vol 3, Section 1, Chapter 1 - The Earth, Section 2, Chapter 7 - Vertical Navigation
061.01.05.02	Conversion from one unit to another	×		×		APM Vol 3, Section 1, Chapter 1 - The Earth, Section 2, Chapter 6 - The Route Plan
061.01.05.03	Relationship between nautical miles and minutes of latitude and minutes of longitude	×		×		APM Vol 3, Section 1, Chapter 1 - The Earth
061.02.00.00	Magnetism and compasses					APM Vol 3, Section 1, Chapter 4 - The Magnetic Compass and Direction
061.02.01.00	General principles					APM Vol 3, Section 1, Chapter 4 - The Magnetic Compass and Direction
061.02.01.01	Terrestrial magnetism	×		×		APM Vol 3, Section 1, Chapter 4 - The Magnetic Compass and Direction
061.02.01.02	Resolution of the earth's total magnetic force into vertical and horizontal components	×		×		APM Vol 3, Section 1, Chapter 4 - The Magnetic Compass and Direction
061.02.01.03	Variation-annual change	×		×		APM Vol 3, Section 1, Chapter 2 - Aeronautical Charts
061.02.02.00	Aircraft magnetism					APM Vol 3, Section 1, Chapter 4 - The Magnetic Compass and Direction
061.02.02.01	The resulting magnetic fields	×		×		APM Vol 3, Section 1, Chapter 4 - The Magnetic Compass and Direction
061.02.02.02	Keeping magnetic materials clear of the compass	×		×		APM Vol 3, Section 1, Chapter 4 - The Magnetic Compass and Direction
061.03.00.00	Charts					APM Vol 3, Section 1, Chapter 2 - Aeronautical Charts
061.03.01.00	General properties of miscellaneous types of projections					APM Vol 3, Section 1, Chapter 2 - Aeronautical Charts
061.03.01.01	Direct Mercator	×		×		APM Vol 3, Section 1, Chapter 2 - Aeronautical Charts
061.03.01.02	Lambert conformal conic	×		×		APM Vol 3, Section 1, Chapter 2 - Aeronautical Charts
061.03.02.00	The representation of meridians, parallels, great circles and rhumb lines					APM Vol 3, Section 1, Chapter 2 - Aeronautical Charts, Section 2, Chapter 6 - The Route Plan
061.03.02.01	Direct Mercator	×		×		APM Vol 3, Section 1, Chapter 2 - Aeronautical Charts, Section 2, Chapter 6 - The Route Plan
061.03.02.02	Lambert conformal conic	×		×		APM Vol 3, Section 1, Chapter 2 - Aeronautical Charts, Section 2, Chapter 6 - The Route Plan

060 NAVIGATION (Page 2/4)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
061.03.03.00	The use of current aeronautical charts					APM Vol 3, Section 1, Chapter 2 - Aeronautical Charts
061.03.03.01	Plotting positions	×		×		APM Vol 3, Section 1, Chapter 1 - The Earth
061.03.03.02	Methods of indicating scale and relief (ICAO topographical chart)	×		×		APM Vol 3, Section 1, Chapter 2 - Aeronautical Charts
061.03.03.03	Conventional signs	×		×		APM Vol 3, Section 1, Chapter 2 - Aeronautical Charts
061.03.03.04	Measuring tracks and distances	×		×		APM Vol 3, Section 2, Chapter 6 - The Route Plan
061.03.03.05	Plotting bearings and distances	×		×		APM Vol 3, Section 2, Chapter 6 - The Route Plan
061.04.00.00	DR navigation					APM Vol 3, Section 2, Section 3
061.04.01.00	Basis of DR					APM Vol 3, Section 2, Chapter 5 - Introduction to Navigation Under Visual Flight Rules, Chapter 6 - The Route Plan, Chapter 9 - Drift, Heading and Groundspeed Calculations, Chapter 10 - Timing and Fuel Management
061.04.01.01	Track	×		×		APM Vol 3, Section 2, Chapter 6 - The Route Plan
061.04.01.02	Heading (compass, magnetic and true)	×		×		APM Vol 3, Section 1, Chapter 4 - The Magnetic Compass and Direction, Chapter 9 - Drift, Heading and Groundspeed Calculations
061.04.01.03	Wind velocity	×		×		APM Vol 3, Section 2, Chapter 9 - Drift, Heading and Groundspeed Calculations
061.04.01.04	Air speed (IAS, CAS and TAS)	×		×		APM Vol 3, Section 2, Chapter 8 - Airspeed
061.04.01.05	Groundspeed	×		×		APM Vol 3, Section 2, Chapter 9 - Drift, Heading and Groundspeed Calculations
061.04.01.06	ETA	×		×		APM Vol 3, Section 2, Chapter 10 - Timing and Fuel Management
061.04.01.07	Drift and wind correction angle	×		×		APM Vol 3, Section 2, Chapter 9 - Drift, Heading and Groundspeed Calculations, Section 3, Chapter 12 - En Route Navigation Techniques
061.04.01.08	DR position fix	×		×		APM Vol 3, Section 3, Chapter 12 - En Route Navigation Techniques
061.04.02.00	Use of the navigational computer					APM Vol 3, Section 2, Chapter 8 - Airspeed, Chapter 9 - Drift, Heading and Groundspeed Calculations, Chapter 10 - Timing and Fuel Management
061.04.02.01	Speed	×		×		APM Vol 3, Section 2, Chapter 8 - Airspeed
061.04.02.02	Time	×		×		APM Vol 3, Section 2, Chapter 10 - Timing and Fuel Management
061.04.02.03	Distance	×		×		APM Vol 3, Section 2, Chapter 10 - Timing and Fuel Management
061.04.02.04	Fuel consumption	×		×		APM Vol 3, Section 2, Chapter 10 - Timing and Fuel Management
061.04.02.05	Conversions	×		×		APM Vol 3, Section 2, Chapter 8 - Airspeed, Chapter 10 - Timing and Fuel Management
061.04.02.06	Air speed	×		×		APM Vol 3, Section 2, Chapter 8 - Airspeed
061.04.02.07	Wind velocity	×		×		APM Vol 3, Section 2, Chapter 9 - Drift, Heading and Groundspeed Calculations
061.04.02.08	True altitude	×		×		APM Vol 3, Section 2, Chapter 7 - Vertical Navigation
061.04.03.00	The triangle of velocities					APM Vol 3, Section 2, Chapter 9 - Drift, Heading and Groundspeed Calculations
061.04.03.01	Heading	×		×		APM Vol 3, Section 2, Chapter 9 - Drift, Heading and Groundspeed Calculations
061.04.03.02	Ground speed	×		×		APM Vol 3, Section 2, Chapter 9 - Drift, Heading and Groundspeed Calculations
061.04.03.03	Wind velocity	×		×		APM Vol 3, Section 2, Chapter 9 - Drift, Heading and Groundspeed Calculations
061.04.03.04	Track and drift angle	×		×		APM Vol 3, Section 2, Chapter 9 - Drift, Heading and Groundspeed Calculations
061.04.04.00	Measurement of DR elements					APM Vol 3, Section 2, Chapter 7 - Vertical Navigation, Chapter 8 - Airspeed, Chapter 9 - Drift, Heading and Groundspeed Calculations
061.04.04.01	Calculation of altitude	×		×		APM Vol 3, Section 2, Chapter 7 - Vertical Navigation
061.04.04.02	Determination of appropriate speed	×		×		APM Vol 3, Section 2, Chapter 8 - Airspeed, Chapter 9 - Drift, Heading and Groundspeed Calculations
	In-flight navigation					APM Vol 3, Section 3
061.05.00.00	Use of visual observations and application to in-flight navigation	×		×		APM Vol 3, Section 3, Chapter 12 - En Route Navigation Techniques
061.05.01.00	Navigation in cruising flight, use of fixes to revise navigation data					APM Vol 3, Section 3, Chapter 12 - En Route Navigation Techniques
061.05.01.01	Ground speed revision	×		×		APM Vol 3, Section 3, Chapter 12 - En Route Navigation Techniques
061.05.01.02	Off-track corrections	×		×		APM Vol 3, Section 3, Chapter 13 - OffTrack Heading Corrections
061.05.01.03	Calculation of wind speed and direction	×		×		APM Vol 3, Section 2, Chapter 9 - Drift, Heading and Groundspeed Calculations Section 3, Chapter 12 - En Route Navigation Techniques
061.05.01.04	ETA revisions	×		×		APM Vol 3, Section 3, Chapter 12 - En Route Navigation Techniques

060 NAVIGATION (Page 3/4)

B.C. = BRIDGE COURSE

Syllabus Reference	Syllabus Details & Associated Learning Objective	AEROPLANE		HELICOPTER		
		PPL	B.C.	PPL	B.C.	
061.06.00.00	Flight log	×		×		APM Vol 3, Section 2 - Pre Flight Planning, Section 3 - En Route Navigation
061.07.00.00	RADIO NAVIGATION					APM Vol 3, Section 4 - En Route Navigation with Radio Navigation Aids
061.07.00.00	Basic radio propagation theory					APM Vol 3, Section 4, Chapter 18 - Radar
061.07.01.00	Antennas					APM Vol 3, Section 4 - En Route Navigation with Radio Navigation Aids
061.07.01.01	Characteristics	×		×		APM Vol 3, Section 4 - En Route Navigation with Radio Navigation Aids
061.07.02.00	Wave propagation					APM Vol 3, Section 4 - En Route Navigation with Radio Navigation Aids
061.07.02.01	Propagation with the frequency bands	×		×		APM Vol 3, Section 4 - En Route Navigation with Radio Navigation Aids
061.08.00.00	Radio aids					APM Vol 3, Section 4 - En Route Navigation with Radio Navigation Aids
061.08.01.00	Ground DF					APM Vol 3, Section 4, Chapter 23 - VHF Direction Finding
061.08.01.01	Principles	×		×		APM Vol 3, Section 4, Chapter 23 - VHF Direction Finding
061.08.01.02	Presentation and interpretation	×		×		APM Vol 3, Section 4, Chapter 23 - VHF Direction Finding
061.08.01.03	Coverage	×		×		APM Vol 3, Section 4, Chapter 23 - VHF Direction Finding
061.08.01.04	Range	×		×		APM Vol 3, Section 4, Chapter 23 - VHF Direction Finding
061.08.01.05	Errors and accuracy	×		×		APM Vol 3, Section 4, Chapter 23 - VHF Direction Finding
061.08.01.06	Factors affecting range and accuracy	×		×		APM Vol 3, Section 4, Chapter 23 - VHF Direction Finding
061.08.02.00	NDB/ADF					APM Vol 3, Section 4, Chapter 22 - The NDB and the ADF
061.08.02.01	Principles	×		×		APM Vol 3, Section 4, Chapter 22 - The NDB and the ADF
061.08.02.02	Presentation and interpretation	×		×		APM Vol 3, Section 4, Chapter 22 - The NDB and the ADF
061.08.02.03	Coverage	×		×		APM Vol 3, Section 4, Chapter 22 - The NDB and the ADF
061.08.02.04	Range	×		×		APM Vol 3, Section 4, Chapter 22 - The NDB and the ADF
061.08.02.05	Errors and accuracy	×		×		APM Vol 3, Section 4, Chapter 22 - The NDB and the ADF
061.08.02.06	Factors affecting range and accuracy	×		×		APM Vol 3, Section 4, Chapter 22 - The NDB and the ADF
061.08.03.00	VOR					APM Vol 3, Section 4, Chapter 20 - The VOR
061.08.03.01	Principles	×		×		APM Vol 3, Section 4, Chapter 20 - The VOR
061.08.03.02	Presentation and interpretation	×		×		APM Vol 3, Section 4, Chapter 20 - The VOR
061.08.03.03	Coverage	×		×		APM Vol 3, Section 4, Chapter 20 - The VOR
061.08.03.04	Range	×		×		APM Vol 3, Section 4, Chapter 20 - The VOR
061.08.03.05	Errors and accuracy	×		×		APM Vol 3, Section 4, Chapter 20 - The VOR
061.08.03.06	Factors affecting range and accuracy	×		×		APM Vol 3, Section 4, Chapter 20 - The VOR
061.08.04.00	DME					APM Vol 3, Section 4, Chapter 21 - DME
061.08.04.01	Principles	×		×		APM Vol 3, Section 4, Chapter 21 - DME
061.08.04.02	Presentation and interpretation	×		×		APM Vol 3, Section 4, Chapter 21 - DME
061.08.04.03	Coverage	×		×		APM Vol 3, Section 4, Chapter 21 - DME
061.08.04.04	Range	×		×		APM Vol 3, Section 4, Chapter 21 - DME
061.08.04.05	Errors and accuracy	×		×		APM Vol 3, Section 4, Chapter 21 - DME
061.08.04.06	Factors affecting range and accuracy	×		×		APM Vol 3, Section 4, Chapter 21 - DME
061.09.00.00	Radar					APM Vol 3, Section 4, Chapter 18 - Radar
061.09.01.00	Ground radar					APM Vol 3, Section 4, Chapter 18 - Radar
061.09.01.01	Principles	×		×		APM Vol 3, Section 4, Chapter 18 - Radar
061.09.01.02	Presentation and interpretation	×		×		APM Vol 3, Section 4, Chapter 18 - Radar
061.09.01.03	Coverage	×		×		APM Vol 3, Section 4, Chapter 18 - Radar
061.09.01.04	Range	×		×		APM Vol 3, Section 4, Chapter 18 - Radar
061.09.01.05	Errors and accuracy	×		×		APM Vol 3, Section 4, Chapter 18 - Radar
061.09.01.06	Factors affecting range and accuracy	×		×		APM Vol 3, Section 4, Chapter 18 - Radar
061.09.02.00	Secondary surveillance radar and transponder					APM Vol 3, Section 4, Chapter 18 - Radar
061.09.02.01	Principles	×		×		APM Vol 3, Section 4, Chapter 18 - Radar
061.09.02.02	Presentation and interpretation	×		×		APM Vol 3, Section 4, Chapter 18 - Radar
061.09.02.03	Modes and codes	×		×		APM Vol 3, Section 4, Chapter 18 - Radar

060 NAVIGATION (Page 4/4)

B.C. = BRIDGE COURSE

Syllabus Reference	Syllabus Details & Associated Learning Objective	AEROPLANE		HELICOPTER		
		PPL	B.C.	PPL	B.C.	
061.10.00.00	GNSS					APM Vol 3, Section 4, Chapter 19 - Global Positioning System (GPS)
061.10.01.00	GPS, GLONASS OR GALILEO					APM Vol 3, Section 4, Chapter 19 - Global Positioning System (GPS)
061.10.01.01	Principles	×		×		APM Vol 3, Section 4, Chapter 19 - Global Positioning System (GPS)
061.10.01.02	Operation	×		×		APM Vol 3, Section 4, Chapter 19 - Global Positioning System (GPS)
061.10.01.03	Errors and accuracy	×		×		APM Vol 3, Section 4, Chapter 19 - Global Positioning System (GPS)
061.10.01.04	Factors affecting accuracy	×		×		APM Vol 3, Section 4, Chapter 19 - Global Positioning System (GPS)

070 OPERATIONAL PROCEDURES (Page 1/2)

B.C. = BRIDGE COURSE

Syllabus Reference	Syllabus Details & Associated Learning Objective	AEROPLANE		HELICOPTER		
		PPL	B.C.	PPL	B.C.	
070.00.00.00	OPERATIONAL PROCEDURES					APM Vol 6, Operational Procedures
070.01.00.00	General					APM Vol 6, Operational Procedures
070.01.01.00	Operation of aircraft: ICAO Annex 6, General requirements					APM Vol 6, Operational Procedures, Chapter 1 - Operation of Aircraft
070.01.01.01	Definitions	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 1 - Operation of Aircraft
070.01.01.02	Applicability	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 1 - Operation of Aircraft
070.02.00.00	Special operational procedures and hazards (general aspects)	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 2 - Noise Abatement Procedures
070.03.00.00	Noise abatement					APM Vol 6, Operational Procedures, Chapter 2 - Noise Abatement Procedures
070.03.01.01	Noise abatement procedures	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 2 - Noise Abatement Procedures
070.03.01.02	Influence of the flight procedure (departure, cruise and approach)	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 2 - Noise Abatement Procedures
070.03.01.03	Runway incursion awareness (meaning of surface markings and signals)	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 2 - Noise Abatement Procedures
070.04.00.00	Fire or smoke					APM Vol 6, Operational Procedures, Chapter 3 - Fire or Smoke
070.04.01.01	Carburettor fire	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 3 - Fire or Smoke
070.04.01.02	Engine fire	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 3 - Fire or Smoke
070.04.01.03	Fire in the cabin and cockpit, (choice of extinguishing agents according to fire classification and use of the extinguishers)	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 3 - Fire or Smoke
070.04.01.04	Smoke in the cockpit and (effects and action to be taken) and smoke in the cockpit and cabin (effects and actions taken)	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 3 - Fire or Smoke
070.05.01.00	Windshear and microburst					APM Vol 6, Operational Procedures, Chapter 4 - Windshear and Microburst
070.05.01.01	Effects and recognition during departure and approach	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 4 - Windshear and Microburst
070.05.01.02	Actions to avoid and actions taken during encounter	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 4 - Windshear and Microburst
070.06.00.00	Wake turbulence					APM Vol 6, Operational Procedures, Chapter 5 - Wake Turbulence
070.06.01.01	Cause	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 5 - Wake Turbulence
070.06.01.02	List of relevant parameters	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 5 - Wake Turbulence
070.06.01.03	Actions taken when crossing traffic, during take-off and landing	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 5 - Wake Turbulence
070.07.00.00	Emergency and precautionary landings					APM Vol 6, Operational Procedures, Chapter 6 - Emergency and Precautionary Landings
070.07.01.01	Definition	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 6 - Emergency and Precautionary Landings
070.07.01.02	Cause	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 6 - Emergency and Precautionary Landings
070.07.01.03	Passenger information	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 6 - Emergency and Precautionary Landings
070.07.01.04	Evacuation	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 6 - Emergency and Precautionary Landings
070.07.01.05	Action after landing	×	×	×	×	APM Vol 6, Operational Procedures, Chapter 6 - Emergency and Precautionary Landings
070.08.00.00	Contaminated runways					APM Vol 6, Operational Procedures, Chapter 7 - Contaminated Runways
070.08.01.01	Kinds of contamination	×	×			APM Vol 6, Operational Procedures, Chapter 7 - Contaminated Runways
070.08.01.02	Estimated surface friction and friction coefficient	×	×			APM Vol 6, Operational Procedures, Chapter 7 - Contaminated Runways
070.09.00.00	Rotor downwash			×	×	-
070.10.00.00	Operation influence by meteorological conditions (Helicopter)					-
070.10.01.01	White out, sand or dust			×	×	-
070.10.01.02	Strong winds			×	×	-
070.10.01.03	Mountain environment			×	×	-

070 OPERATIONAL PROCEDURES (Page 2/2)

B.C. = BRIDGE COURSE

Syllabus Reference	Syllabus Details & Associated Learning Objective	AEROPLANE		HELICOPTER		
		PPL	B.C.	PPL	B.C.	
070.11.00.00	Emergency procedures					-
070.11.01.00	Influence by technical problems					-
070.11.01.01	Engine failure			×	×	-
070.11.01.02	Fire in cabin, cockpit or engine			×	×	-
070.11.01.03	Tail, rotor or directional control failure			×	×	-
070.11.01.04	Ground resonance			×	×	-
070.11.01.05	Blade stall			×	×	-
070.11.01.06	Settling with power (vortex ring)			×	×	-
070.11.01.07	Overpitch			×	×	-
070.11.01.08	Overspeed: rotor or engine			×	×	-
070.11.01.09	Dynamic rollover			×	×	-
070.11.01.10	Mast bumping			×	×	-

080 PRINCIPLES OF FLIGHT (Page 1/5)

B.C. = BRIDGE COURSE

Syllabus Reference	Syllabus Details & Associated Learning Objective	AEROPLANE		HELICOPTER		
		PPL	B.C.	PPL	B.C.	
080.00.00.00	PRINCIPLES OF FLIGHT					APM Vol 4
081.00.00.00	PRINCIPLES OF FLIGHT: AEROPLANE					APM Vol 4
081.01.00.00	Subsonic aerodynamics					APM Vol 4
081.01.01.00	Basics concepts, laws and definitions					APM Vol 4, Section 1 - Principles of Flight
081.01.01.01	Laws and definitions:	×	×			APM Vol 4, Section 1 - Principles of Flight
	(a) conversion of units;	×	×			APM Vol 4, Section 4, Chapter 31 - The Atmosphere, Chapter 34 - Mass and Balance, APM Vol 3, Section 2, Chapter 8 - Airspeed
	(b) Newton's laws;	×	×			APM Vol 4, Section 1, Chapter 1 - The Forces Acting on an Aeroplane
	(c) Bernoulli's equation and venture;	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(d) static pressure, dynamic pressure and total pressure;	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(e) density;	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(f) IAS and TAS.	×	×			APM Vol 4, Section 1, Chapter 5 - Lift/ Drag Ratio, Section 3, Chapter 25 - Pressure Instruments
081.01.01.02	Basics about airflow:	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(a) streamline;	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(b) two-dimensional airflow;	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(c) three-dimensional airflow.	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
081.01.01.03	Aerodynamic forces on surfaces:	×	×			APM Vol 4, Section 1, Chapter 2 - Weight, Chapter 3 - Aerofoil Lift, Chapter 4 - Drag, Chapter 5 - Lift / Drag Ratio, Chapter 6 - Thrust from the Propeller
	(a) resulting airforce;	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(b) lift;	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(c) drag;	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(d) angle of attack.	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
081.01.01.04	Shape of an aerofoil section:	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(a) thickness to chord ratio;	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(b) chord line;	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(c) camber line;	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(d) camber;	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(e) angle of attack.	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
081.01.01.05	The wing shape:	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(a) aspect ratio;	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(b) root chord;	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(c) tip chord;	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(d) tapered wings;	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(e) wing planform.	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
081.02.01.00	The two-dimensional airflow about an aerofoil					APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
081.02.01.01	Streamline pattern	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
081.02.01.02	Stagnation point	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
081.02.01.03	Pressure distribution	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
081.02.01.04	Centre of pressure	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
081.02.01.05	Influence of angle of attack	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
081.02.01.06	Flow separation at high angles of attack	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
081.02.01.07	The lift – a graph	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
081.03.01.00	The coefficients					APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift, Chapter 4 - Drag
081.03.01.01	The lift coefficient C_L ; the lift formula	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
081.03.01.02	The drag coefficient C_D ; the drag formula	×	×			APM Vol 4, Section 1, Chapter 4 - Drag

080 PRINCIPLES OF FLIGHT (Page 2/5)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
081.04.01.00	The three-dimensional airflow round a wing and a fuselage					APM Vol 4, Section 1, Chapter 4 - Drag
081.04.01.01	Streamline pattern:	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(a) span-wise flow and causes;	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(b) tip vortices and angle of attack;	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(c) upwash and downwash due to tip vortices;	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(d) wake turbulence behind an aeroplane (causes, distribution and duration of the phenomenon).	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
081.04.01.02	Induced drag:	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(a) influence of tip vortices on the angle of attack;	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(b) the induced local α ;	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(c) influence of induced angle of attack on the direction of the lift vector;	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(d) induced drag and angle of attack.	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
081.05.01.00	Drag					APM Vol 4, Section 1, Chapter 4 - Drag
081.05.01.01	The parasite drag:	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(a) pressure drag;	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(b) interference drag;	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
	(c) friction drag.	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
081.05.01.02	The parasite drag and speed	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
081.05.01.03	The induced drag and speed	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
081.05.01.04	The total drag	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
081.06.01.00	The ground effect					APM Vol 4, Section 4, Chapter 36 - Ground Effect
081.06.01.01	Effect on take off and landing characteristics of an aeroplane	×	×			APM Vol 4, Section 4, Chapter 36 - Ground Effect
081.07.01.00	The stall					APM Vol 4, Section 1, Chapter 14 - Stalling
081.07.01.01	Flow separation at increasing angles of attack:	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(a) the boundary layer:	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(1) laminar layer;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(2) turbulent layer;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(3) transition.	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(b) separation point;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(c) influence of angle of attack;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(d) influence on:	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(1) pressure distribution;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(2) location of centre of pressure;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(3) C_{l_i} ;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(4) C_{p_i} ;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(5) pitch moments.	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(e) buffet;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(f) use of controls.	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
081.07.01.02	The stall speed:	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(a) in the lift formula;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(b) 1g stall speed;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(c) influence of:	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(1) the centre of gravity;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(2) power setting;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(3) altitude (IAS);	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(4) wing loading;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(5) load factor n:	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling

080 PRINCIPLES OF FLIGHT (Page 3/5)

Syllabus Reference	Syllabus Details & Associated Learning Objective	AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
		PPL	B.C.	PPL	B.C.	
	(i) definition;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(ii) turns;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(iii) forces.	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
081.07.01.03	The initial stall in span-wise direction:	×	×			APM Vol 4, Section 1, Chapter 4 - Drag, Chapter 14 - Stalling
	(a) influence of planform;	×	×			APM Vol 4, Section 1, Chapter 4 - Drag, Chapter 14 - Stalling
	(b) geometric twist (wash out);	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(c) use of ailerons.	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
081.07.01.04	Stall warning:	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(a) importance of stall warning;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(b) speed margin;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(c) buffet;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(d) stall strip;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(e) flapper switch;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(f) recovery from stall.	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
081.07.01.05	Special phenomena of stall:	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(a) the power-on stall;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(b) climbing and descending turns;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(c) t-tailed aeroplane;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(d) avoidance of spins:	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(1) spin development;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(2) spin recognition;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(3) spin recovery.	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(e) ice (in stagnation point and on surface):	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(1) absence of stall warning;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(2) abnormal behaviour of the aircraft during stall.	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
081.08.01.00	C_L augmentation					APM Vol 4, Section 1, Chapter 9 - Flaps
081.08.01.01	Trailing edge flaps and the reasons for use in take-off and landing:	×	×			APM Vol 4, Section 1, Chapter 9 - Flaps
	(a) influence on C_L - α -graph;	×	×			APM Vol 4, Section 1, Chapter 9 - Flaps
	(b) different types of flaps;	×	×			APM Vol 4, Section 1, Chapter 9 - Flaps
	(c) flap asymmetry;	×	×			APM Vol 4, Section 1, Chapter 9 - Flaps
	(d) influence on pitch movement.	×	×			APM Vol 4, Section 1, Chapter 9 - Flaps
081.08.01.03	Leading edge devices and the reasons for use in take-off and landing	×	×			APM Vol 4, Section 1, Chapter 9 - Flaps
081.09.01.00	The boundary layer					APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
081.09.01.01	Different types:	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(a) laminar;	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
	(b) turbulent.	×	×			APM Vol 4, Section 1, Chapter 3 - Aerofoil Lift
081.10.00.00	Special circumstances					APM Vol 4, Section 1, Chapter 4 - Drag, Chapter 10 - Straight and Level, Chapter 14 - Stalling
081.10.00.01	Ice and other contamination:	×	×			APM Vol 4, Section 1, Chapter 4 - Drag, Chapter 10 - Straight and Level, Chapter 14 - Stalling, APM 2, Section 2, Chapter 22 - Hazardous Conditions
	(a) ice in stagnation point;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling
	(b) ice on the surface (frost, snow and clear ice);	×	×			APM Vol 4, Section 1, Chapter 10 - Straight and Level
	(c) rain;	×	×			APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
	(d) contamination of the leading edge;	×	×			APM Vol 4, Section 1, Chapter 10 - Straight and Level, Section 1, Chapter 14 - Stalling
	(e) effects on stall;	×	×			APM Vol 4, Section 1, Chapter 14 - Stalling

080 PRINCIPLES OF FLIGHT (Page 4/5)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
	(f) effects on loss of controllability;	×	×			APM 2, Section 2, Chapter 22 - Hazardous Conditions
	(g) effects on control surface moment;	×	×			APM 2, Section 2, Chapter 22 - Hazardous Conditions
	(h) influence on high lift devices during takeoff, landing and low speeds.	×	×			APM Vol 4, Section 1, Chapter 10 - Straight and Level, APM Vol 2, Section 2, Chapter 22 - Hazardous Conditions
081.11.00.00	Stability					APM Vol 4, Section 1, Chapter 7 - Stability
081.11.01.00	Condition of equilibrium in steady horizontal flight					APM Vol 4, Section 1, Chapter 7 - Stability
081.11.01.01	Precondition for static stability	×	×			APM Vol 4, Section 1, Chapter 7 - Stability
081.11.01.02	Equilibrium:	×	×			APM Vol 4, Section 1, Chapter 7 - Stability
	(a) lift and weight;	×	×			APM Vol 4, Section 1, Chapter 7 - Stability
	(b) drag and thrust.	×	×			APM Vol 4, Section 1, Chapter 7 - Stability
081.12.00.00	Methods of achieving balance					APM Vol 4, Section 1, Chapter 7 - Stability, Chapter 8 - Control
081.12.01.01	Wing and empennage (tail and canard)	×	×			APM Vol 4, Section 1, Chapter 7 - Stability, Chapter 8 - Control
081.12.01.02	Control surfaces	×	×			APM Vol 4, Section 1, Chapter 7 - Stability, Chapter 8 - Control
081.12.01.03	Ballast or weight trim	×	×			APM Vol 4, Section 4, Chapter 34 - Mass and Balance
081.13.00.00	Static and dynamic longitudinal stability					APM Vol 4, Section 1, Chapter 7 - Stability
081.13.01.01	Basics and definitions:	×	×			APM Vol 4, Section 1, Chapter 7 - Stability
	(a) static stability, positive, neutral and negative;	×	×			APM Vol 4, Section 1, Chapter 7 - Stability
	(b) precondition for dynamic stability;	×	×			APM Vol 4, Section 1, Chapter 7 - Stability
	(c) dynamic stability, positive, neutral and negative.	×	×			APM Vol 4, Section 1, Chapter 7 - Stability
081.13.01.02	Location of centre of gravity:	×	×			APM Vol 4, Section 1, Chapter 7 - Stability
	(a) aft limit and minimum stability margin;	×	×			APM Vol 4, Section 1, Chapter 7 - Stability
	(b) forward position;	×	×			APM Vol 4, Section 1, Chapter 7 - Stability
	(c) effects on static and dynamic stability.	×	×			APM Vol 4, Section 1, Chapter 7 - Stability
081.14.00.00	Dynamic lateral or directional stability					APM Vol 4, Section 1, Chapter 7 - Stability
081.14.01.01	Spiral dive and corrective actions	×	×			APM Vol 4, Section 1, Chapter 7 - Stability, APM Vol 1, Exercise 15c Recovery from Unusual Attitudes
081.15.00.00	Control					APM Vol 4, Section 1, Chapter 8 - Control
081.15.01.00	General					APM Vol 4, Section 1, Chapter 8 - Control
081.15.01.00	Basics, the three planes and three axes	×	×			APM Vol 4, Section 1, Chapter 7 - Stability
081.15.01.02	Angle of attack change	×	×			APM Vol 4, Section 1, Chapter 8 - Control, Chapter 10 - Straight and Level
081.16.01.00	Pitch control					APM Vol 4, Section 1, Chapter 8 - Control
081.16.01.01	Elevator	×	×			APM Vol 4, Section 1, Chapter 8 - Control
081.16.01.02	Downwash effects	×	×			APM Vol 4, Section 1, Chapter 4 - Drag
081.16.01.03	Location of centre of gravity	×	×			APM Vol 4, Section 1, Chapter 8 - Control
081.17.01.00	Yaw control					APM Vol 4, Section 1, Chapter 8 - Control
081.17.01.01	Pedal or rudder	×	×			APM Vol 4, Section 1, Chapter 8 - Control
081.17.02.00	Roll control					APM Vol 4, Section 1, Chapter 8 - Control
081.17.02.01	Ailerons: function in different phases of flight	×	×			APM Vol 4, Section 1, Chapter 8 - Control
081.17.02.02	Adverse yaw	×	×			APM Vol 4, Section 1, Chapter 8 - Control
081.17.02.03	Means to avoid adverse yaw:	×	×			APM Vol 4, Section 1, Chapter 8 - Control
	(a) frise ailerons;	×	×			APM Vol 4, Section 1, Chapter 8 - Control
	(b) differential ailerons deflection.	×	×			APM Vol 4, Section 1, Chapter 8 - Control
081.18.01.00	Means to reduce control forces					APM Vol 4, Section 1, Chapter 8 - Control
081.18.00.01	Aerodynamic balance:	×	×			APM Vol 4, Section 1, Chapter 8 - Control
	(a) balance tab and anti-balance tab;	×	×			APM Vol 4, Section 1, Chapter 8 - Control
	(b) servo tab.	×	×			APM Vol 4, Section 1, Chapter 8 - Control
081.19.01.00	Mass balance					APM Vol 4, Section 1, Chapter 8 - Control
081.19.00.00	Reasons to balance: means	×	×			APM Vol 4, Section 1, Chapter 8 - Control

080 PRINCIPLES OF FLIGHT (Page 5/5)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
081.20.01.00	Trimming					APM Vol 4, Section 1, Chapter 8 - Control
081.20.01.01	Reasons to trim	×	×			APM Vol 4, Section 1, Chapter 8 - Control
081.20.01.02	Trim tabs	×	×			APM Vol 4, Section 1, Chapter 8 - Control
081.21.00.00	Limitations					APM Vol 4, Section 1, Chapter 9 - Flaps, Chapter 10 - Straight and Level, Chapter 11 - Climbing, Chapter 12 - Descending, Chapter 13 - Turning, Chapter 14 - Stalling, Section 4, Chapter 30 - Airframe Limitations
081.21.01.00	Operating limitations					APM Vol 4, Section 1, Chapter 9 - Flaps, Chapter 10 - Straight and Level, Chapter 11 - Climbing, Chapter 12 - Descending, Chapter 13 - Turning, Chapter 14 - Stalling, Section 4, Chapter 30 - Airframe Limitations
081.21.01.01	Flutter	×	×			APM Vol 4, Section 1, Chapter 8 - Control
081.21.01.02	V_{FE}	×	×			APM Vol 4, Section 1, Chapter 9 - Flaps
081.21.01.03	V_{NO} , V_{NE}	×	×			APM Vol 4, Section 4, Chapter 30 - Airframe Limitations
081.22.01.00	Manoeuvring envelope					APM Vol 4, Section 4, Chapter 30 - Airframe Limitations
081.22.01.01	Manoeuvring load diagram:	×	×			APM Vol 4, Section 4, Chapter 30 - Airframe Limitations
	(a) load factor;	×	×			APM Vol 4, Section 4, Chapter 30 - Airframe Limitations
	(b) accelerated stall speed;	×	×			APM Vol 4, Section 4, Chapter 30 - Airframe Limitations
	(c) V_A ;	×	×			APM Vol 4, Section 4, Chapter 30 - Airframe Limitations
	(d) manoeuvring limit load factor or certification category.	×	×			APM Vol 4, Section 4, Chapter 30 - Airframe Limitations
081.22.01.02	Contribution of mass	×	×			APM Vol 4, Section 4, Chapter 30 - Airframe Limitations
081.23.01.00	Gust envelope					APM Vol 4, Section 4, Chapter 30 - Airframe Limitations
081.23.01.01	Gust load diagram	×	×			APM Vol 4, Section 4, Chapter 30 - Airframe Limitations
081.23.01.02	Factors contributing to gust loads	×	×			APM Vol 4, Section 4, Chapter 30 - Airframe Limitations
081.24.00.00	Propellers					APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller
081.24.01.00	Conversion of engine torque to thrust					APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller
081.24.01.01	Meaning of pitch	×	×			APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller
081.24.01.02	Blade twist	×	×			APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller
081.24.01.03	Effects of ice on propeller	×	×			APM 2, Section 2, Chapter 22 - Hazardous Conditions
081.25.01.00	Engine failure or engine stop					APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller
081.25.01.01	Windmilling drag	×	×			APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller
081.26.01.00	Moments due to propeller operation					APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller
081.26.01.01	Torque reaction	×	×			APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller
081.26.01.02	Asymmetric slipstream effect	×	×			APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller
081.26.01.03	Asymmetric blade effect	×	×			APM Vol 4, Section 1, Chapter 6 - Thrust from the Propeller
081.27.00.00	Flight mechanics					APM Vol 4, Section 1, Chapter 10 - Straight and Level, Chapter 11 - Climbing, Chapter 12 - Descending, Chapter 13 - Turning, Chapter 14 - Stalling
081.27.01.00	Forces acting on an aeroplane					APM Vol 4, Section 1, Chapter 10 - Straight and Level, Chapter 11 - Climbing, Chapter 12 - Descending, Chapter 13 - Turning, Chapter 14 - Stalling
081.27.01.01	Straight horizontal steady flight	×	×			APM Vol 4, Section 1, Chapter 10 - Straight and Level
081.27.01.02	Straight steady climb	×	×			APM Vol 4, Section 1, Chapter 11 - Climbing
081.27.01.03	Straight steady descent	×	×			APM Vol 4, Section 1, Chapter 12 - Descending
081.27.01.04	Straight steady glide	×	×			APM Vol 4, Section 1, Chapter 12 - Descending
081.27.01.05	Steady coordinated turn:	×	×			APM Vol 4, Section 1, Chapter 13 - Turning
	(a) bank angle;	×	×			APM Vol 4, Section 1, Chapter 13 - Turning
	(b) load factor;	×	×			APM Vol 4, Section 1, Chapter 13 - Turning
	(c) turn radius;	×	×			APM Vol 4, Section 1, Chapter 13 - Turning
	(d) rate one turn.	×	×			APM Vol 4, Section 1, Chapter 13 - Turning

090 COMMUNICATIONS (Page 1/1)

		AEROPLANE		HELICOPTER		B.C. = BRIDGE COURSE
Syllabus Reference	Syllabus Details & Associated Learning Objective	PPL	B.C.	PPL	B.C.	
090.00.00.00	COMMUNICATIONS					APM Vol 7
090.01.00.00	VFR COMMUNICATIONS					APM Vol 7, Section 1, Chapter 1 - Cockpit Radios
090.01.01.00	Definitions					APM Vol 7, Section 1, Chapter 1 - Cockpit Radios
090.01.01.01	Meanings and significance of associated terms	×		×		APM Vol 7, Section 1, Chapter 2 - What to Say
090.01.01.02	ATS abbreviations	×		×		APM Vol 7, Section 1, Chapter 2 - What to Say
090.01.01.03	Q-code groups commonly used in RTF airground communications	×		×		APM Vol 7, Section 1, Chapter 3 - Aerodrome Operations
090.01.01.04	Categories of messages	×		×		APM Vol 7, Section 1, Chapter 2 - What to Say
090.02.01.00	General operating procedures					APM Vol 7, Section 1, Chapter 2 - What to Say
090.02.01.01	Transmission of letters	×		×		APM Vol 7, Section 1, Chapter 2 - What to Say
090.02.01.02	Transmission of numbers (including level information)	×		×		APM Vol 7, Section 1, Chapter 2 - What to Say
090.02.01.03	Transmission of time	×		×		APM Vol 7, Section 1, Chapter 2 - What to Say
090.02.01.04	Transmission technique	×		×		APM Vol 7, Section 1, Chapter 2 - What to Say
090.02.01.05	Standard words and phrases (relevant RTF phraseology included)	×		×		APM Vol 7, Section 1, Chapter 2 - What to Say
090.02.01.06	R/T call signs for aeronautical stations including use of abbreviated call signs	×		×		APM Vol 7, Section 1, Chapter 3 - Aerodrome Operations
090.02.01.07	R/T call signs for aircraft including use of abbreviated call signs	×		×		APM Vol 7, Section 1, Chapter 3 - Aerodrome Operations
090.02.01.08	Transfer of communication	×		×		APM Vol 7, Section 1, Chapter 3 - Aerodrome Operations
090.02.01.09	Test procedures including readability scale	×		×		APM Vol 7, Section 1, Chapter 3 - Aerodrome Operations
090.02.01.10	Read back and acknowledgement requirements	×		×		APM Vol 7, Section 1, Chapter 3 - Aerodrome Operations
090.03.01.00	Relevant weather information terms (VFR)					APM Vol 7, Section 1, Chapter 4 - Aerodrome Information
090.03.01.01	Aerodrome weather	×		×		APM Vol 7, Section 1, Chapter 4 - Aerodrome Information
090.03.01.02	Weather broadcast	×		×		APM Vol 7, Section 1, Chapter 4 - Aerodrome Information
090.04.00.00	Action required to be taken in case of communication failure	×		×		APM Vol 7, Section 3, Chapter 9 - Radio Failure Procedures
090.04.01.00	Distress and urgency procedures					APM Vol 7, Section 3, Chapter 8 - Emergency Procedures
090.04.01.01	Distress (definition, frequencies, watch of distress frequencies, distress signal and distress message)	×		×		APM Vol 7, Section 3, Chapter 8 - Emergency Procedures
090.04.01.02	Urgency (definition, frequencies, urgency signal and urgency message)	×		×		APM Vol 7, Section 3, Chapter 8 - Emergency Procedures
090.05.00.00	General principles of VHF propagation and allocation of frequencies	×		×		APM Vol 7, Section 5, Chapter 12 - Radio Fundamentals and APM Vol 7, Section 5, Chapter 13 - Radio Wave Propagation & Long-Range Communications

POOLEYS–AIR PILOT PUBLISHING
AIR PILOT'S MANUALS & POOLEYS AVIATION ACADEMY



POOLEYS
Air Pilot Publishing

Pooleys-Air Pilot Publishing
Elstree Aerodrome | Hertfordshire | WD6 3AW
Tel: +44(0)20 8953 4870 | www.pooleys.com
Email: sales@pooleys.com/support@pooleysaviationacademy.com