Subject No 40 Flight Planning (Aeroplane)

Note: This syllabus is based on Flight Planning for an oceanic IFR flight for a multi engine turbine air transport type aeroplane.

Each subject has been given a subject number and each topic within that subject a topic number. These reference numbers will be used on 'knowledge deficiency reports' and will provide valuable feed back to the examination candidate.

This syllabus presupposes a knowledge and understanding already attained at PPL/CPL/IR and BTK syllabuses level.

Sub Topic	Syllabus Item
	Planning Concepts
40.2	**Definitions**
40.2.2	Define and be able to use the following terms in the correct context:
	(a) long range cruise (LRC);
	(b) specific range;
	(c) point of no return (PNR);
	(d) equi-time point (ETP);
	(e) diversion decision point (DDP);
	(f) extended diversion time operations (EDTO);
	(g) cost index (CI);
	(h) Performance Deterioration Allowance (PDA);
	(i) contingency fuel;
	(j) ISA and temperature deviation (e.g. ISA +10).
40.4	**Aerodynamics and turbine engine characteristics**
40.4.2	(a) Explain the variation of aircraft performance with height and weight.
	(b) Describe the relationship between height and weight factors and power, speed and fuel consumption.
40.6	**Aircraft performance**
40.6.2	Describe, and be able to interpret graphs and tabulated data methods, of presenting aircraft performance data such as those relating to power, speed, height and temperature.
40.8	**Cruise management**
40.8.2	Explain the various cruise options for turbine aircraft, their advantages and

Sub Topic	Syllabus Item
	disadvantages and their appropriate use.
40.8.4	Explain the use of aircraft performance data and meteorological data for the determination of optimum conditions for climbing, cruising and descending.
40.10	**EDTO**
40.10.2	Explain the concept of EDTO.
40.10.4	Explain the additional considerations required for an EDTO flight plan.
	Manual Flight Planning
40.12	**Climb**
40.12.2	Given appropriate preliminary information, use representative aircraft data to determine: (a) time/distance/fuel to a given altitude, or altitude reached after a given time or distance; (b) fuel/distance/time requirements for intermediate level changes.
40.14	**Cruise**
40.14.2	Given appropriate preliminary information, use representative aircraft data to determine: (a) maximum and optimum cruise levels; (b) sector times and distances; (c) TAS and fuel consumption at specific altitudes; (d) maximum weight or temperature at which specific performance and/or altitudes can be attained; (e) holding speeds and fuel consumption at specific and optimum altitudes.
40.16	**Descent**
40.16.2	Given appropriate preliminary information, use representative aircraft data to determine: (a) appropriate descent points; (b) time and fuel used during descent.
40.18	**Fuel Consumption**
40.18.2	Given appropriate preliminary information, use representative aircraft data to determine: (a) sector fuel consumption;

Sub Topic	Syllabus Item
	(b) total fuel consumption;
	(c) alternate and reserve fuel requirements;
	(d) total fuel required.
40.20	**Payload**
40.20.2	Given appropriate preliminary information, use representative aircraft data to determine:
	(a) maximum ZFW;
	(b) available payload.
40.22	**Equi -Time Points**
40.22.2	Given appropriate preliminary information, use representative aircraft data to determine the following ETP's:
	(a) normal cruise (ETP);
	(b) depressurised cruise (ETPD);
	(c) engine-out descent and cruise (ETP1);
	(d) engine-out depressurised cruise (ETP1D).
40.24	**Return points**
40.24.2	Given appropriate preliminary information, use representative aircraft data to determine the PNR.
40.26	**Diversion Decision Point**
40.26.2	Given appropriate preliminary information, use representative aircraft data to determine a DDP.
	Computerised Flight Planning
40.28	**Flight Data Extraction**
40.28.2	Given a completed computer-generated flight plan and representative aircraft data, obtain any of the following:
	(a) type of cruise profile, including speed;
	(b) preliminary cruise level;
	(c) time/distance/fuel to preliminary cruise level;
	(d) step-climb point;
	(e) EET to any enroute waypoint, and destination;

Sub Topic	Syllabus Item
	(f) AUW at any waypoint, and at destination;
	(g) fuel information; including fuel flow, fuel used enroute, fuel to destination, contingency, DDP fuel, extra holding, diversion fuel, minimum reserve, critical fuel and total fuel required;
	(h) time/distance to ETP's;
	(i) minimum fuel at ETP's;
	(j) available payload.
40.30	**Revision Calculations**
40.30.2	Use a complete computer-generated flight plan and representative aircraft data to calculate the following:
	(a) revised enroute ETP's;
	(b) time/fuel to different alternate;
	(c) revised fuel requirements.