

APPENDIX 3. AIRCRAFT RATINGS AND ENDORSEMENTS**SECTION 3.1 CLASS RATINGS****Unit 3.1.1 MECR: multi-engine aeroplane class rating – all aircraft categories****1. Reserved****2. General operational knowledge****2.1 Principles of asymmetric flight**

- 2.1.1 Describe basic principles of asymmetric flight, changes in thrust and drag vectors and the effect on balanced flight.
- 2.1.2 State airspeed limitations necessary to ensure control of the aircraft.
- 2.1.3 Explain the effects on aircraft performance associated with engine failure.
- 2.1.4 Describe the effects of bank or sideslip on:
 - (a) vertical stabiliser (fin) and stall speed;
 - (b) rudder effectiveness;
 - (c) control load and aircraft trim.
- 2.1.5 Describe the factors effecting minimum control speeds or other speed specified to achieve optimum performance following the failure of an engine.
- 2.1.6 Describe the concept of 'commitment height' during approach and landing where applicable and the factors determining that height.
- 2.1.7 Knowledge of the aircraft certification performance requirements.

3. Aircraft systems**3.1 Aeroplane and engine systems**

- 3.1.1 Describe the normal and non-normal operation of the following systems if installed in the aircraft:
 - (a) fuel;
 - (b) electrical;
 - (c) flight control (primary and secondary);
 - (d) hydraulic;
 - (e) flight instruments;
 - (f) avionics;
 - (g) braking;
 - (h) de-icing;
 - (i) oxygen;
 - (j) cabin airconditioning and pressurisation;
 - (k) other systems installed in the aircraft.
- 3.1.2 Describe the operation and limitations of following engine systems where installed:
 - (a) fuel;
 - (b) oil;
 - (c) starter (including air start for turbo-jets);
 - (d) ignition;
 - (e) propeller;
 - (f) mixture – piston engine only;
 - (g) turbochargers.
- 3.1.3 Knowledge of the aeroplane limitations specified in the aircraft flight manual.