



## RAANZ Instructor Oral Exam Syllabus Examination

Revision 1 September 2022

This exam is to ensure the candidate has a full understanding of the operation of Microlight Aircraft.

This exam has no set questions. This allows the examiner to probe as and when required to ensure understanding.

The exam should include the following subjects including but not limited to.

### Principles of Flight

- Thrust, propellers, pitch.
- Drag, parasite and induced.
- Forces on the aircraft in cruise, climb, descent.
- Speeds.  $V_{ne}$ ,  $V_{no}$ ,  $V_a$ ,  $V_x$ ,  $V_y$ ,  $V_f$ ,  $V_s$
- Forces in a turn. G loading and its effect on stall speed.
- Aerofoils, chord, angle of attack, stalling and recovery.
- Aircraft performance. Pressure altitude, Density altitude.
- Aircraft loading. Determination of C of G. Effect of incorrect loading.
- Stability. Longitudinal, lateral, directional. How stability is achieved.
- Controls. Aerodynamic balance, mass balance, flutter.

### VFR Operations

- Types of Airspace in use in NZ. C, D, G including entry requirements.
- Met. requirements for each and services available in each including separation and traffic information.
- MBZ, CFZ, Danger Areas, Restricted areas, GAA

### Preparation and Operation of Microlight Aircraft.

- Assembly of Microlights. Visual symmetry check. Security of locking mechanisms. Correct and secure loading.
- Working knowledge of appropriate CAA Rules including 103, 149, 91 and exemptions from.
- Minimum Safe height requirements.
- Flight planning including wind considerations on ground speed and drift.

### Micro Meteorology.

- Met services available. Including Afor, TAF, Metar, Sigmet
- General weather patterns.
- Wind including; Fohn, katabatic, anabatic, seabreeze, funnel effect. Wind gradient.
- Turbulence including; Mechanical, Thermal, Wake.
- Low level turbulence.
- Cloud formations including; Lenticular, rotor, CB
- Fog. Ingredients for.

**Low Inertia Performance.**

- Importance of Airspeed maintenance
- Induced and Parasite drag and their effect on airspeed maintenance.
- Effect of wind on Low inertia operations including amplified drift, turbulence and ground speed changes.

**The RAANZ certificate structure and use of forms.**

- Working knowledge of RAANZ Exposition, Admin and Field Ops, Certificate structure including; Privileges, issue requirements and renewal requirements.
- Working knowledge of RAANZ constitution.
- Use of CMV form, online and hard copy.

**Interpersonal Skills**

- Communication: written, verbal and listening, non-verbal.
- Empathy
- Dependability.
- Responsibility. Setting a good example.
- Teamwork.