

## 1. Table of Contents – Training, Microlight

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## 2. Novice Pilot Certificate

### 1. **Object**

The object of this section is to specify:

- (a) the requirements for issue
- (b) the recent experience requirements;
- (c) the requirements for renewal; and
- (d) the privileges of the Novice Pilot Certificate.

### 2. **Requirements for issue**

An applicant for the issue of a Novice Pilot Certificate must meet the requirements relating to age and provide a medical declaration (as set out in Sect. 5 – 4).

### 3. **Recent Experience Requirements**

- (a) The holder of the Novice Pilot Certificate must not exercise the privileges of their certificate:
  - (i) To engage in solo flight within a 10 mile radius of an airfield unless he/she is the holder of a signed and valid 90 day, max 5 hour flight time, solo authorisation form and that he/she has signed a pilot declaration (as set out in SAC Form 8.7);
  - (ii) Or hold a 90 day solo authorisation form until he/she has passed the SAC “Air Law” examination and received either flight or ground instruction from a Microlight instructor in the following exercises:

#### **Fixed Wing:**

- (i) Assembly and pre-flight of microlight Aircraft;
- (ii) Ground handling;
- (iii) Taxiing;
- (iv) Effect of Controls;
- (v) Straight and level flight;
- (vi) Climbing and descending;
- (vii) Level climbing and descending turns;
- (viii) Stall recognition and recovery;
- (ix) Takeoff, circuit and landing;
- (x) Going around again;
- (xi) Engine failure both during and after takeoff;
- (xii) Forced landing without power;
- (xiii) Circuit rejoining procedure
- (xiv) Rules of the Air;
- (xv) Solo.

**Rotorcraft**

Helicopters - Refer Section 6.2

Gyroplanes - Refer Section 6.3

- (b) The novice pilots solo authorisation form must be signed by a Microlight Instructor and will remain valid for 90 days or 5 solo flight hours which ever is reached first. At the end of each 90 day period or 5 solo flight hours the pilot may obtain an extension for a further 90 days. An instructor must sign all extensions.

**4. Requirements for Re-validation**

- (a) An applicant for the re validation of a Novice Pilot Certificate must satisfy SAC that they have a current medical declaration, and have a current solo authorisation signed by an instructor. A copy of the medical certificate shall accompany the request for revalidation.
- (b) Examples of both the solo authorisation form and the pilot declaration are shown in Section 8.

**5. Privileges**

- (a) Fixed Wing

A Novice Pilot Certificate authorises the holder to act, under the supervision of an instructor, as pilot-in-command of a Microlight Aircraft that is not carrying a passenger for the purposes of:

- (i) increasing their skill in order to qualify for the issue of certificate of higher qualification; or
- (ii) engaging in flying practice in order to re qualify for a certificate that is no longer valid.

- (b) Rotorcraft

Helicopters - Refer Section 6.2

Gyroplanes - Refer Section 6.3

**Note:** The prohibition against the carriage of a passenger by the holder of a Novice Pilot Certificate shall not apply to the carriage of an instructor.

## **6. Novice Pilot Certificate Ratings**

- (a) All Novice Pilot Certificates must be endorsed with the ratings in accordance with the schedule following:
  - (i) **Group A:** Valid for the operation of Weight Shift Microlight Aircraft only.
  - (ii) **Group B:** Valid for the operation of Three Axis Control Microlight Aircraft only.
  - (iii) **Group C:** Valid for the operation of Combined Control Microlight Aircraft only.
  - (iv) **Group G:** Valid for the operation of Microlight Gyroplanes only.
  - (v) **Group H:** Valid for the operation of Microlight Helicopters only.
  - (vi) **Group P:** Valid for the operation of Powered Parachutes only.
  - (vii) **High performance Microlights** of all the above groups are subject to type ratings.  
Refer Section 6.0 - 4
- (b) The holder of a Novice Pilot Certificate may only engage in solo flight in microlight aircraft types included in the same group as the type on which he/she was trained.
- (c) The pilots' logbook shall be appropriately endorsed by an instructor.

### 3. Intermediate Pilot Certificate

#### 1. **Object**

The object of this section is to specify:

- (a) the requirements for issue;
- (b) the recent experience requirements;
- (c) the requirements for renewal;
- (d) the examination syllabus;
- (e) the night test requirements; and
- (f) the privileges of the intermediate Plot Certificate.

#### 2. **Requirements for Issue**

- (a) An applicant for the issue of an intermediate Pilot Certificate must hold a valid Novice Pilot Certificate or must hold a valid Flight Crew licence in any other aircraft type category; and must demonstrate to an instructor:
  - (i) Their general knowledge and ability to perform competently those normal and emergency flight manoeuvres applicable to the type of Microlight Aircraft on which they are being flight tested;
  - (ii) Flight tests conducted on single seat microlight aircraft must include all elements of the flight test syllabus. The applicant must be briefed by the examiner to carry out the various manoeuvres to a sequence in an area in the examiners field of view.
- (b) The syllabus for the flight test is set out in Section 6.1 – 3.2
- (c) Prior to undertaking the flight test for an Intermediate Pilot Certificate an applicant will be required to pass a written examination in the following subjects:
  - (i) Aviation Law;
  - (ii) Microlight Air Navigation;
  - (iii) Meteorology;
  - (iv) Aircraft Technical Knowledge - Microlight Aircraft.
- (d) Fixed Wing

When the applicant for the issue of an Intermediate Pilot Certificate is the holder of a valid Private Pilots Licence part 61 - Aeroplane, they will only be required to:

- (i) complete a minimum of two hours microlight type conversion; and
- (ii) have their logbooks endorsed for the rating group of the aircraft they have converted to.

### **Rotorcraft**

Helicopters - Refer Section 6.2  
Gyroplanes - Refer Section 6.3

- (e) The detailed syllabus of examination in the above subject is set out in Section 6.1 – 3.1.
- (f) Prior to undertaking a flight test for an Intermediate Pilot Certificate an applicant must:
  - (i) have completed at least 25 hours flight experience in Microlight Aircraft, and
  - (ii) if having trained as a Student for the issue of a Part 61 license, have completed at least 20 hours flight time of which 10 hours must have been in Microlight Aircraft.
- (g) Rotorcraft
  - Helicopters - Refer Section 6.2
  - Gyroplanes - Refer Section 6.3

### **3. Recent Experience Requirements**

- (a) The holder of an intermediate Pilots Certificate must carry out at least three take-offs and landings in Microlight Aircraft in each 90 day period in order to remain current before carrying passengers.

### **4. Requirements for Re-validation**

- (a) An applicant for the re-validation of an Intermediate Pilot Certificate must satisfy SAC that they have a current medical declaration by forwarding a copy to the

Secretary/Administrator together with a completed, Biennial Flight Review signed by the applicant and the Instructor. (SAC Form 8.4)

- (b) It shall be the responsibility of the pilot certificate holder to ensure the Medical certificate and Biennial flight review requirements are met before acting as pilot-in-command.

## **5. Intermediate pilot Certificate – Ratings**

- (a) All Intermediate Pilot Certificates must be endorsed with ratings in accordance with the schedule below.
- (i) **Group A:** Valid for the operation of Weight Shift Microlight Aircraft only.
  - (ii) **Group B:** Valid for the operation of Three Axis Control Microlight Aircraft only.
  - (iii) **Group C:** Valid for the operation of Combined Control Microlight Aircraft only.
  - (iv) **Group G:** Valid for the operation of Microlight Gyroplanes only.
  - (v) **Group H:** Valid for the Operation of Microlight Helicopters only.
  - (vi) **Group P:** Valid for the operation of Powered Parachutes.
  - (vii) **High performance Microlights** of all the above groups are subject to type ratings. Refer Section 6.0 – 4.

## **6. Privileges**

### **(a) Fixed Wing**

An Intermediate Pilot Certificate authorises the holder to exercise the privileges to act, but not for remuneration, as the pilot-in-command of a Microlight Aircraft. An Intermediate Pilot Certificate permits the holder to fly within 10 NM of his/her takeoff point.

(b) **Rotorcraft**

Helicopters - Refer Section 6.2  
Gyroplanes - Refer Section 6.3

**7. Carriage of Passengers**

(a) Fixed Wing

Pilots wishing to carry passengers must have demonstrated to a Sport Aviation Corp instructor, competency in a two-seat Microlight Aircraft and have 35 hours PIC minimum. Holders of valid Flight Crew Licences PPL and above, must have completed a type conversion and a minimum of 2 hours pilot-in-command of a Microlight.

**Rotorcraft**

Helicopters - Refer Section 6.2  
Gyroplanes - Refer Section 6.3

(b) Following the successful completion of this flight test a new certificate shall be issued.

### 3.1 Intermediate Pilot Certificate Syllabus

#### 1. **Aviation Law and Publications**

1.1 Candidates are required to have a broad knowledge of the purpose and general knowledge of the following documents or groups of documents:

- (a) Civil Aviation Rules
- (b) NZ Aeronautical Information Publication (NZAIP Vol. 1)
- (c) NZAIP Vol. 4
- (d) Aeronautical Information Circulars
- (e) NZ Aeronautical Information Publication (AIP Supplements)

1.2 Candidates are required to have a practical working knowledge of the Civil Aviation Rules and documents issued thereunder which are pertinent to the sport and recreation operation of microlight aeroplanes under visual meteorological conditions, and which are listed hereunder:

- (a) Civil Aviation Rules

<u>Rule</u>	<u>Title</u>
<b>Part 1</b>	<b>Definitions and Abbreviations</b>
<b>Part 91</b>	<b>General Operating and Flight Rules</b>
91.123	<i>Flight Instruction</i>
91.127	<i>Use of Aerodromes</i>
91.129	<i>Restricted and danger areas</i>
91.131	<i>Low flying areas</i>
91.133	<i>Military operational areas</i>
91.135	<i>Conditional areas</i>
91.137	<i>Volcanic hazard areas</i>
91.139	<i>General aviation areas</i>
91.141	<i>Aerodrome traffic zones</i>
91.203	<i>Authority of the pilot-in-command</i>
91.205	<i>Crew members at stations</i>
91.207	<i>Occupation of seats and wearing of restraints</i>
91.217	<i>Pre-flight action</i>
91.219	<i>Familiarity with operating limitations and emergency equipment</i>
91.221	<i>Flying equipment and operating information</i>

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91.223	<i>Operating on and in the vicinity of an aerodrome</i>
91.225	<i>Operations at aerodromes with air traffic services</i>
91.227	<i>Operating near other aircraft</i>
91.229	<i>Right-of-way rules</i>
91.235	<i>Dropping of objects</i>
91.241	<i>Compliance with ATC clearances and instructions</i>
91.243	<i>ATC light signals</i>
91.245	<i>Operations in designated and classified airspace</i>
91.246	<i>Operations in RNP designated airspace</i>
91.247	<i>Use of SSR Transponder and altitude reporting equipment</i>
91.249	<i>Aircraft call signs</i>
91.301	<i>VFR meteorological minima</i>
91.303	<i>Special VFR weather minima</i>
91.307	<i>VFR flight plan</i>
91.307	<i>Position reports</i>
91.311	<i>Minimum heights for VFR flights</i>
91.311	<i>VFR cruising altitude and flight level</i>
91.315	<i>Operating in snow and ice conditions</i>

**Part 103      Microlight Aircraft Certification and Operating Rules**

103.101	<i>Registration</i>
103.105	<i>Documents to be carried</i>
103.105	<i>Placards</i>
103.151	<i>Fuel requirements</i>
103.153	<i>Minimum heights</i>
	103.153 <i>Flight Criteria</i>
103.159	<i>Carriage of passengers</i>
103.217	<i>Maintenance and inspection requirements</i>
103.221	<i>Instrument and equipment requirements</i>

**2.      *Microlight Air Navigation and Flight Planning***

- 2.1      Form of the Earth:  
            Latitude and Longitude
  
- 2.2      Direction on the earth:  
            Navigation by compass

- 2.3 Topographical maps:  
Practical use of the maps, measuring tracks and distances, knowledge of the principal chart symbols, contour lines.
- 2.4 Operations under VFR-  
Control Areas Class C and D  
Control Zones C, and D, Airspace  
Uncontrolled Airspace, Class G  
Mandatory Broadcast Zones (MBZ)

### **3. *Meteorology***

- 3.1 Composition of the atmosphere.
- 3.2 Atmospheric pressure:  
Unit of measure, variation with height, pressure altitude, the effects of, I.S.A.
- 3.3 Atmospheric temperature:  
Units of measure, variation with height, density altitude, and effects of, I.S.A.
- 3.4 Pressure systems and fronts:  
Depression or low pressure, anti-cyclone or high pressure, cold and warm fronts, the general characteristics of pressure systems and fronts as they occur over NZ, horizontal pressure, isobars.
- 3.5 Wind:  
Wind velocity, wind shear, backing and veering, sea breezes, Föhn winds, valley winds, anabatic and catabatic winds.
- 3.6 Clouds:  
Cloud classifications, effect of haze, smoke and fog on visibility, visibility, fog.
- 3.7 Turbulence:  
Mechanical, terrain, convectional, local winds, slipstream, wake, the evaluation and recognition of potential areas of low-level turbulence and its potential effect on the operation of microlight aeroplanes, mountain waves.

- 3.8 Aviation meteorological briefings:  
Terms and abbreviations used in meteorological forecasts and reports, procedures for obtaining pre-flight meteorological information.

#### **4. Aircraft Technical Knowledge – Microlight Aeroplanes**

- 4.1 Properties of the air:  
Density:  
Variation of density with changes of temperature, pressure and height.
- 4.2 Principles of Flight:  
Meaning and significance of terms associated with aerodynamics, thrust, drag, lift, weight, aerofoils, angle of attack, centre of pressure, stalling, spinning and drag (induced, parasitic).
- 4.3 Propellers:  
Pitch, effect on engine performance of fine and coarse pitch propellers, reduction drives, propeller care.
- 4.4 Engines:  
Principles of operation and associated systems, including ignition, cooling, carburettion, fuel, oil, carburettor heat, control of engines and indications of performance, use of mixture control.
- 4.5 Airframe:  
Recognition of airframe defects generally with particular emphasis on landing gear, flying controls and their associated cables and push rods, wing and tail surface attachment points, bracing struts and wires and engine mounts.
- 4.6 Loading:  
Knowledge of the terms 'centre of gravity' and 'centre of gravity limits', the importance of centre of gravity position, knowledge of the precautions that should be taken when loading aeroplanes (e.g. security of loads), factors affecting take-off, climb and landing performance.
- 4.7 Airmanship:  
General airmanship relating to the operation of microlight aeroplanes

### **3.2. Flight Test - Intermediate Pilot Certificate**

#### **1. General**

- 1.1 An applicant for the initial issue of an Intermediate Pilot Certificate shall pass a practical test, the syllabus for which is set out below.
- 1.2 The test shall include an oral general knowledge test followed immediately by a pilot competency test.

#### **2. General Knowledge Test**

- 1.1 Demonstrate:
  - (a) Aeroplane documents including knowledge of loading.
  - (b) Aeroplane inspection and pre-flight check.

#### **3. Piloting Technique Test**

- 3.1 Demonstrate:
  - (a) Taxiing
  - (b) Takeoff into wind
  - (c) Engine failure after takeoff
  - (d) Straight and level
  - (e) Level, climbing and descending turns including steep level turns.
- 3.2 Demonstration of the approach to the stall with power off and with partial power. Recovery in both cases to be carried out at the onset with minimum height loss (within the stalling limitations of the microlight aeroplane type as specified by the manufacturer).
- 3.3 Forced landing without power onto the field of operation from a height and position nominated by the examiner before takeoff.
- 3.4 Demonstration of two circuits:
  - (a) Takeoff into wind, circuit, overshoot from 50 ft, re-circuit. (The examiner to specify the circuit parameters).
  - (b) Carry out a precision landing (i.e. short field approach and landing).
  - (c) Precision engine-off (engine may be at idle) landing.

## **4. Advanced Pilot Certificate**

### **1. Object**

The object of this section is to specify:

- (a) the requirement for issue;
- (b) the recent experience requirements;
- (c) the requirements for renewal; and
- (d) the privileges of the Advanced Pilot Certificate.

### **2. Requirements for Issue**

- (a) An applicant seeking withdrawal of the restricted category of his/her intermediate Pilot Certificate:
  - (i) Must complete the cross-country flights as set out in Section 6.1 – 4.1
  - (ii) Must demonstrate to a person approved for the purpose his/her general knowledge and ability to perform competently such normal and emergency flight manoeuvres as may be considered necessary for the issue of an Advanced Pilot Certificate.

### **3. Recent Experience Requirements**

- (a) The holder of an Advanced Pilot Certificate must carry out at least three takeoffs and landings in a Microlight Aircraft of the same type in each 90 day period in order to remain current before carrying passengers.

### **4. Requirements for Re-validation**

- (a) An applicant for the re-validation of an Advanced Pilot Certificate must satisfy SAC that they have a current medical declaration by forwarding a copy to the Secretary/Administrator together with a completed, Biennial Flight Review signed by the applicant and the Instructor. (SAC Form 8.4)
- (b) It shall be the responsibility of the pilot certificate holder to ensure the Medical certificate and Biennial flight review requirements are met before acting as pilot-in-command.

## **5. Advanced Pilot Certificate – Ratings**

- (a) An Advanced Pilot Certificate shall be endorsed with ratings in accordance with the schedule below:
  - (i) **Group A:** Valid for the operation of Weight Shift Microlight Aircraft only.
  - (ii) **Group B:** Valid for the operation of Three Axis Control Microlight Aircraft only.
  - (iii) **Group C:** Valid for the operation of Combined Control Microlight Aircraft only.
  - (iv) **Group G:** Valid for the operation of Microlight Gyroplanes only.
  - (v) **Group H:** Valid for the operation of Microlight Helicopters only.
  - (vi) **Group P:** Valid for the operation of Powered Parachutes only
  - (vii) **High performance Microlights** of all the above groups are subject to type ratings. Refer Section 6.0 - 4

## **6. Privileges**

- (a) An Advanced Pilot Certificate authorises the holder to exercise the privileges to act, but not for remuneration, as pilot-in-command of a Microlight Aircraft and shall be endorsed 'not for the carriage of passengers' unless the requirements of Para. 7 below are met.

## **7. Carriage of Passengers**

### **(a) Fixed Wing**

Pilots wishing to carry passengers must have demonstrated to a Sport Aviation Corp. instructor competency in a two-seat Microlight Aircraft and have 35 hours PIC minimum. Holders of valid Flight Crew Licences, PPL and above, must have completed a type conversion and a minimum of 2 hours pilot-in-command of a Microlight that has been certified as airworthy.

### **Rotorcraft**

Helicopters - Refer Section 6.2

Gyroplanes - Refer Section 6.3

- (b) Following the successful completion of this flight test a new certificate will be issued.

## 4.1. Advanced Pilot Certificate - Cross Country & Navigation Syllabus

### 1. *General*

- (a) An applicant for the issue of an Advanced Pilot certificate shall have satisfactorily completed the cross-country navigation flight training in accordance with the following syllabus.
- (b) Low performance Microlight aircraft need only comply with Stages 1 and 2 of the navigation exercises.  
(Total 3 hours dual and 3 hours solo)
- (c) High performance Microlight aircraft need to comply with Stages 1, 2 and 3 of the Navigation exercises.
- (d) Meteorological conditions – Navigation ***solo flights are not*** to be undertaken unless the forecasts are at least: ***2000 foot ceiling and 16 kilometres visibility.***

### 2. *Exercises to be completed*

- (a) **Stage 1: Elementary navigation exercises**  
**Experience** – At least 1 hour dual flight instruction and 1 hour solo flight time.  
  
**Pre-flight preparation** – Preparation of flight plan, weather evaluation, fuel requirements, fuel management, maintenance of heading and map reading.
- (b) **Stage 2: Basic navigation exercises**  
**Experience** - At least 2 hours dual flight instruction and 2 hours solo flight time.  
  
**Instruction** - Dual flight instruction and solo practice in basic cross-country navigation.  
  
**Pre-flight preparation** – Weather evaluation, selection of routes, cruising levels, minimum safe altitudes and check points, preparation and lodging of flight plans, fuel requirements and reserves, relevant air traffic rules and procedures including entry, transit and exit lanes through controlled airspace, radio communication procedures, emergency and diversion procedures, and action on becoming unsure of position.

**In-flight procedures** - Log keeping, map reading, maintenance of compass heading, elimination of track errors, revisions of ETA, position reporting and adherence to air traffic clearances.

**Dual flight instruction** – To include at least one landing at a controlled or flight service aerodrome and one landing at a non-controlled aerodrome at least 25 nm from the point of departure.

**Meteorological conditions** – Navigation solo flights are not to be undertaken unless the forecasts are at least 2000 foot ceiling and 16 kilometres visibility.

**(e) Stage 3: Advanced navigation exercises**

Experience - At least 2 hours dual flight instruction and 2 hours solo flight.

**Instruction** – Dual flight instruction in advanced navigation including part high level and part low level navigation, preferably with one landing en-route. At least one flight is to be made into controlled airspace or an MBZ in an aircraft equipped with a two-way radio.

Note: If the student has not qualified for flight into controlled airspace the cross country endorsement must read “not valid for controlled airspace”.

**Pre-flight Preparation** – as for Stage 2.

**In-flight procedures** – As for Stage 2 but with emphasis on high level map reading, estimations of distances and revisions of ETA. Introduction to emergencies such as deterioration of weather with an unscheduled landing and resulting diversion back to base at low level under simulated meteorological conditions of 600 foot cloud base and flight visibility less than 5000 metres.

Solo advanced navigation – Following dual flight instruction, this should include a period at high level only but not necessarily over the same route and preferable with an intermediate landing en-route. This exercise should not be authorised until the supervising instructor is satisfied with the student’s ability to undertake such a flight.

- (f) Low performance microlights** – Notwithstanding the exercises detailed above, students carrying out the cross country and navigation syllabus in a low performance

Microlight may modify certain parameters to suit the performance of their aircraft as follows:

- (1) If Instructors elect to use an aerodrome in a MBZ rather than a controlled aerodrome. See paragraph (4).
- (2) Instructors and students should concentrate on competency in low level map reading and flight planning.
- (3) Cross country flight planning should be developed around the limited performance and endurance of the individual aircraft.
- (4) The student may elect to opt out of the requirement to qualify in controlled airspace if the training is taking place outside controlled airspace and a controlled/flight service aerodrome in a NORDO aircraft. If this option is taken the pilot's logbook and Microlight certificate shall be endorsed:

***“Not valid for flight into controlled airspace”***

This limitation must be lifted by pilot qualification if a High Performance Rating is subsequently sought.

### **3. Logbook Certification**

Upon satisfactory completion of the syllabus of cross-country flight training, the flight instructor completing the training shall endorse the applicant's logbook in the following manner:

<b>CROSS-COUNTRY ENDORSEMENT</b>
I hereby Certify that:
_____ has Full Name of Applicant
Satisfactorily completed the syllabus of cross-country navigation flight training in accordance with Section 6.1 – 4.1 of the SAC Exposition and is eligible to make application to have an Advanced Pilot Certificate issued by SAC.
Limitations: <b>”not valid for controlled airspace”</b> (Instructor to delete as applicable)
Signed: _____
Date: _____
SAC Instructor Certificate Nr.: _____

## 5. Microlight Instructor Certificate

### 1. **Object**

The object of this section is to specify:

- (a) the requirements for issue;
- (b) the recent experience requirements;
- (c) the examination syllabus;
- (d) the flight test requirements; and
- (e) the privileges of the Microlight Instructor Certificate.

### 2. **Requirements for issue**

2.1 An applicant for the issue of a Microlight Instructor Certificate:

#### **Fixed Wing**

- (a) shall be the holder of an Advanced Microlight Pilot Certificate; or
- (b) shall hold a Part 61 Flight instructor Rating Aeroplane Category A, B, or C **and** a SAC Microlight Pilot Certificate.
- (c) shall demonstrate to a Sport Aviation Corp Ltd Authorised Testing Officer his/her ability to give ground instruction on Microlight aircraft and demonstrate their ability to fly a Microlight aircraft within the 'groupings' for which they have ratings and complete the exercises listed in the syllabus. (A new Instructor must complete 10 hours of dual flight instruction and lesson planning with a SAC ATO)

**Note:** Applicants holding current Part 61 Flight Instructor Ratings are exempt the written examinations for a Microlight Flight Certificate but must still comply with the experience requirements, group/type rating, flight test, and oral examination for issue of a Microlight Instructor Certificate.

#### **Rotorcraft**

Helicopters - Refer Section 6.2 – 3,4  
Gyroplanes – Refer Section 6.3 – 5,1

2.2 The syllabus for the flight test is set out in Section 6.1 – 5.2.

2.3 Prior to undertaking the flight test for a Microlight Instructor Certificate an applicant is required:

**Fixed Wing**

- (a) to pass an oral examination in principles of flight;
- (b) to pass an oral examination in VFR operations with particular emphasis on airspace considerations;
- (c) to pass an oral and practical examination in the preparation an operation of Microlight aircraft;
- (d) to pass an oral examination on micro-meteorology;
- (e) to pass a written exam on all aspects of Microlight training;
- (f) to attend a course/seminar in instruction techniques.

2.3 The detailed syllabus of examination in the above subjects is set out in Section 6.1 – 5.1

2.4 Prior to undertaking a flight test for a Microlight Instructors Certificate an applicant must have completed.

- (a) not less than 200 hours flight in Microlight Aircraft which must include at least 10 hours of cross-country flying, if all experience has been in Microlight aircraft: or
- (b) 200 hours flight time in aircraft of which 25 hours must be in Microlight aircraft and which must include at least 10 hours cross-country flying.

2.5 Where the applicant is the holder of a valid Flight instructor Rating Aeroplane Category A, B, or C issued under part 61 they must complete a minimum of 5 hours flight time in Microlight Aircraft before undertaking supervision of Microlight operations.

2.6 An applicant who does not hold a current or valid flight instructor rating - aeroplane Category A, B or C but who has previously held such a rating will be required to complete 10 hours flight time in Microlight Aircraft before undertaking supervision of Microlight operations.

**Rotorcraft**

Helicopters - Refer Section 6.2  
Gyroplanes - Refer Section 6.3

### **3. Recent Experience Requirements**

- 3.1 The holder of a Microlight Instructor Certificate must not exercise the privileges of his/her certificate to act as an instructor in Microlight Aircraft unless:
- (a) within the immediate preceding 90 days he/she has carried out at least three take-offs and landings in a Microlight Aircraft of similar configuration and ;
  - (b) within the immediate preceding 13 months he/she has demonstrated to an authorised testing officer (ATO) designated by SAC his/her competency to carry out the duties appropriate to a Microlight Instructor Certificate in accordance with the syllabus set out in Section 6.1 – 5.1

### **4. Requirements for Re-validation**

- (a) An applicant for the re-validation of an Instructor Certificate must satisfy SAC that they have a current medical declaration by forwarding a copy to the Secretary/Administrator together with a completed, Instructor Flight Review signed by the applicant and the ATO (SAC Form 8.4). The Operations Officer may except an equivalent flight review from another Microlight Organisation or part 61 testing officer.
- (b) It shall be the responsibility of the pilot certificate holder to ensure the Medical certificate and flight review requirements are met before acting as pilot-in-command.

### **5. Privileges**

- 5.1 Provisional Instructors for at least the first 6 months and for at least the first 50 hours of instructional flying, must be directly supervised by their flight instructor or ATO by being on the same airfield, at the time that any instructional flight commences, being directly responsible for authorising such flights and for the flight instruction actions of the Provisional flight instructor who is under supervision. A Microlight Instructor Certificate must be considered a Provisional Certificate until 50 hours and minimum 6 months of satisfactory Instructor performance with a minimum 2 students trained to 1<sup>st</sup> solo. A satisfactory flight test is then required with a SAC ATO before the Provisional instructor classification may be lifted and application made to SAC for consideration.

I hereby certify that, in accordance with SAC Exposition 6.1, 5, 5.1	
Provisional Instructor.....is under my supervision, and for at least the first 6 consecutive months and for at least the first 50 hours of instructional flying, is under my direct supervision.	
ATO Name.....	SAC No.....
Signed .....	Date .....

5.2 A Microlight Instructor Certificate authorises the holder to:

- (a) give flight and ground instruction in Microlight Aircraft;
- (b) authorise solo flight by the holder of a Novice Pilot; Certificate.
- (c) Issue a type rating to qualified pilots if he/she holds a valid rating in that aircraft.

**Note:** A Provisional Instructor may only authorise solo flight other than first solo, and authorise type ratings.  
A Provisional Instructor may not test for issue of flight Certificates or BFR renewals.

5.3 Part 61 “A” Cat Instructors who hold a SAC Microlight Instructor rating may self rate on any Microlight aircraft for the purposes of training a Pilot on that aircraft.

## 6. *Microlight Instructor Certificate - Ratings*

6.1 All Microlight Instructor Certificates will be endorsed with ratings in accordance with the schedule below:

- (a) **Group A:** Valid for the operation of Weight Shift Microlight Aircraft only.
- (b) **Group B:** Valid for the operation of Three Axis Control Microlight Aircraft only.
- (c) **Group C:** Valid for the operation of Combined Control Microlight Aircraft only.
- (d) **Group G:** Valid for the operation of Microlight Gyroplanes only.
- (e) **Group H:** Valid for the operation of Microlight Helicopters only.
- (f) **Group P:** Valid for the operation of Powered Paragliders only;
- (g) **High performance Microlights** of all the above groups are subject to type ratings. Refer Section 6.0 – 4

**7. Microlight Instructor – Categories**

- (a) **ATO:** Has equivalence with Pt 61 “A” Category instructor
- (b) **Instructor:** Has equivalence with Part 61 “B” Category instructor
- (c) **Provisional:** Has equivalence with Part 61 “C” Category instructor”( may not authorise first solo and is under supervision of an instructor or ATO)

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## 5.1 Microlight Instructor Certificate Syllabus

### 1. **Aviation Law and Publications**

1.1 Candidates are required to have a broad knowledge of the purpose and general knowledge of the following documents or groups of documents:

- (a) Civil Aviation Rules
- (b) NZ Aeronautical Information Publication NZAIP Vol. 1
- (c) NZAIP Vol. 4
- (d) Aeronautical Information Circulars
- (e) NZ Aeronautical Information Publication (AIP Supplements)

1.2 Candidates are required to have a practical working knowledge of the Civil Aviation Rules and documents issued thereunder which are pertinent to the sport and recreation operation of microlight aeroplanes under visual meteorological conditions, and which are listed hereunder:

- (a) Civil Aviation Rules

<u>Rule</u>	<u>Title</u>
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<b>Part 1</b>	<b>Definitions and Abbreviations</b>
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<b>Part 91</b>	<b>General Operating and Flight Rules</b>
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<i>91.123</i>	<i>Flight Instruction</i>
<i>91.127</i>	<i>Use of Aerodromes</i>
<i>91.129</i>	<i>Restricted and danger areas</i>
	<i>Low flying areas</i>
<i>91.133</i>	<i>Military operational areas</i>
	<i>Conditional areas</i>
<i>91.137</i>	<i>Volcanic hazard areas</i>
	<i>General aviation areas</i>
<i>91.141</i>	<i>Aerodrome traffic zones</i>
<i>91.203</i>	<i>Authority of the pilot-in-command</i>
<i>91.205</i>	<i>Crew members at stations</i>
<i>91.207</i>	<i>Occupation of seats and wearing of restraints</i>
<i>91.217</i>	<i>Pre-flight action</i>
<i>91.219</i>	<i>Familiarity with operating limitations and emergency equipment</i>
<i>91.222</i>	<i>Flying equipment and operating information</i>
<i>91.223</i>	<i>Operating on and in the vicinity of an aerodrome</i>
<i>91.225</i>	<i>Operations at aerodromes with air traffic services</i>
<i>91.227</i>	<i>Operating near other aircraft</i>
<i>91.229</i>	<i>Right-of-way rules</i>
<i>91.235</i>	<i>Dropping of objects</i>

91.241	<i>Compliance with ATC clearances and instructions</i>
91.243	<i>ATC light signals</i>
91.245	<i>Operations in designated and classified airspace</i>
91.246	<i>Operations in RNP designated airspace</i>
91.247	<i>Use of SSR Transponder and altitude reporting equipment</i>
91.249	<i>Aircraft call signs</i>
91.301	<i>VFR meteorological minima</i>
91.303	<i>Special VFR weather minima</i>
91.307	<i>VFR flight plan</i>
91.308	<i>Position reports</i>
91.311	<i>Minimum heights for VFR flights</i>
91.312	<i>VFR cruising altitude and flight level</i>
91.315	<i>Operating in snow and ice conditions</i>

**Part 103      Microlight Aircraft Certification and Operating Rules**

103.101	<i>Registration</i>
103.105	<i>Documents to be carried</i>
103.106	<i>Placards</i>
103.152	<i>Fuel requirements</i>
103.153	<i>Minimum heights</i>
103.154	<i>Flight Criteria</i>
103.160	<i>Carriage of passengers</i>
103.217	<i>Maintenance and inspection requirements</i>
103.221	<i>Instrument and equipment requirements</i>

**2.      *Microlight Air Navigation and Flight Planning***

- 2.1      Form of the Earth:  
            Latitude and Longitude
  
- 2.2      Direction on the earth:  
            Navigation by compass
  
- 2.3      Topographical maps:  
            Practical use of the maps, measuring tracks and distances, knowledge of the principal chart symbols, contour lines.
  
- 2.4      Operations under VFR:  
            Control Area Class C and D

Control Zones Class C and D  
Uncontrolled airspace Class G  
Mandatory Broadcast Zones (MBZ)

### **3. Meteorology**

- 3.1 Composition of the atmosphere.
- 3.2 Atmospheric pressure:  
Unit of measure, variation with height, pressure altitude, the effects of, I.S.A.
- 3.3 Atmospheric temperature:  
Units of measure, variation with height, density altitude, and effects of, I.S.A.
- 3.4 Pressure systems and fronts:  
Depression or low pressure, anti-cyclone or high pressure, cold and warm fronts, the general characteristics of pressure systems and fronts as they occur over NZ, horizontal pressure, isobars.
- 3.5 Wind:  
Wind velocity, wind shear, backing and veering, sea breezes, Föhn winds, valley winds, anabatic and catabatic winds.
- 3.6 Clouds:  
Cloud classifications, effect of haze, smoke and fog on visibility, visibility, fog.
- 3.7 Turbulence-  
Mechanical, terrain, convectional, local winds, slipstream, wake, the evaluation and recognition of potential areas of low-level turbulence and its potential effect on the operation of microlight aeroplanes, mountain waves.
- 3.8 Aviation meteorological briefings:  
Terms and abbreviations used in meteorological forecasts and reports, procedures for obtaining pre-flight meteorological information.

#### **4. Aircraft Technical Knowledge – Microlight Aeroplanes**

- 4.1 Properties of the air:  
Density:  
Variation of density with changes of temperature, pressure, and height.
- 4.2 Principles of Flight:  
Meaning and significance of terms associated with aerodynamics, thrust, drag, lift, weight, aerofoils, angle of attack, centre of pressure, stalling, spinning and drag (induced, parasitic).
- 4.3 Propellers:  
Pitch, effect on engine performance of fine and coarse pitch propellers, reduction drives, propeller care.
- 4.4 Engines:  
Principles of operation and associated systems, including ignition, cooling, carburetion, fuel, oil, carburettor heat, control of engines and indications of performance, use of mixture control.
- 4.5 Airframe:  
Recognition of airframe defects generally with particular emphasis on landing gear, flying controls and their associated cables and push rods, wing and tail surface attachment points, bracing struts and wires and engine mounts.
- 4.6 Loading:  
Knowledge of the terms 'centre of gravity' and 'centre of gravity limits', the importance of centre of gravity position, knowledge of the precautions that should be taken when loading aeroplanes (e.g. security of loads), factors affecting take-off, climb and landing performance.
- 4.7 Airmanship:  
General airmanship relating to the operation of microlight aeroplanes.

## 5.2 Flight Test - Microlight Instructor Certificate

### 1. General

1.1 The flight manoeuvres and other aspects on which the applicant for a Microlight Instructor Certificate must be required to demonstrate competency in are:

- (a) Setting up and pre-flight inspection of Microlight Aircraft
- (b) Ground handling of Microlight Aircraft
- (c) Effect of controls
- (d) Taxiing
- (e) Takeoff
- (f) Climbing, level flight, descending, gliding
- (g) Level, climbing and descending turns including steep level turns
- (h) Stalling:
  - (i) Power off
  - (ii) With partial power, recovery at onset in both cases
  - (iii) Incipient Spin recognition and recovery  
(Within the stalling limitations of the Microlight Aircraft as specified by the manufacturer or a check flight in General Aviation type aircraft).
- (i) Landing:
  - (i) Normal
  - (ii) Short field precision landing; and
  - (iii) Precision engine-off (engine may be at idle) landing.
- (j) Going around again.
- (k) Emergency procedures:  
Engine failure both during and after takeoff.
- (l) Weight and Balance
- (m) Flight Planning
- (n) Meteorology
- (o) Rules of the Air

### 2. Exemptions

Part 61 Instructors who hold a SAC Microlight Instructor rating and have maintained currency under part 61 must provide proof of their flight check to remain current. They do not need to be flight checked by SAC for a renewal.

## **6. Authorised Testing Officers**

### **1. General**

SAC will from time to time appoint suitably qualified and experienced instructors as Authorised Testing Officers.

### **2. Experience Requirements**

Minimum flight experience requirements for an Authorised Testing Officer (ATO) will normally be 500 hours Pilot in Command of which will include 100 hours of pilot instructional training.

**Note:** Where aircraft of new configuration and flight handling characteristics are introduced, the SAC Executive may, in the interests of sporting aviation, vary these requirements on a case by case basis by recognising a persons experience and previous qualifications. A person so appointed would be required to develop a training programme on type for inclusion in the SAC Exposition.

### **3. Duties**

Authorised Testing Officers shall:

- (a) Carry out training for new Instructors in lesson planning and preparation, knowledge of SAC pilot certification procedures and flight testing on new instructors before recommending the issue of an instructor certificate.
- (b) Carry out flight tests on other instructors for the purpose of assessment or upgrading their qualifications.
- (c) Maintain the standard of instruction as laid down in the SAC Exposition within their local sphere of influence.
- (d) Supervise new instructors and ensure the standard of instruction conforms to the SAC Exposition.
- (e) Carry out ground instructional/lecturing duties as required by the SAC executive.

### **4. Privileges**

- 4.1 An Authorised Testing Officer may self-rate themselves on an aircraft type which is new to their area providing they hold a microlight certificate valid for the appropriate category.

4.2 An Authorised Testing Officer may accept evidence from a person having foreign type experience and training, when a new type or category aircraft is introduced, for the purpose of recommending the issue of a microlight certificate or issuing a type rating. (see Sec 6.0, 3, 3(a)).

**5. *Renewal***

- (a) An Authorised Testing Officer is appointed as required by SAC and shall be flight tested by another SAC ATO every 2 years after which the appointment may be terminated.
- (b) All re-appointments will be at the discretion of the SAC Operations Officer.

## 7. Reserved

## 8. The SAC Certificates & Ratings

Certificate/Rating	Pre-requisites	Min. Experience	Flight Privileges/Conditions	Cross-Country
Novice Certificate	Medical, Fit & Proper 16 Years	-	No passengers. All flights Instructor approved. Remote supervision permitted (Telephone approval and de-brief each session).	-
Intermediate Certificate	As above. Passed all exams.	25hrs total	10NM & home field restriction. Instructor sign-off for wider specific areas/fields/routes.	-
Advanced Certificate, Low Performance	As above. FRTO	35hrs total	Available with Low Performance Type Rating only. Endorsed: - <i>"Not valid for flight into controlled airspace"</i>	Cross countries as per Sec. 6.1 – 4.1
Advanced Certificate, High performance	As above FRTO	35hrs total	Available with low and/or high performance type ratings	Stage 1, 2 & 3 cross countries
Passenger Rating	Intermediate Advanced, PPL & above	35hrs PIC minimum. For PPL & above, aircraft rating + 2 hrs solo	10NM Restriction on Intermediate	-
Provisional Instructor Rating	Advanced Certificate	200hrs total Under direct supervision of an Instructor/ATO for 50 hrs and min 6 mnths	Instruction restricted to those exercises in which he/she has demonstrated competence to teach by a dual check with an ATO.- No 1 <sup>st</sup> solos or flight tests, only type ratings	-
Instructor Rating	Advanced Certificate	250hrs including 50hrs and 6 months instructing and at least 2 students through to first solo and completed 10hrs dual with an ATO. Formal Instructional Techniques Training	May carry out: 1 <sup>st</sup> solos Type ratings Flight Tests BFR's  All Instructor privileges	-
ATO Rating	Advanced Certificate. Senior Instructor Rating. Person of Standing. SAC Appointment	500hrs P.I.C 100hrs instructing	May self rate on any Microlight aircraft.  Train new Instructors Test Instructors Area Ambassador for SAC	