
APPENDIX R62.01
RECREATIONAL PILOT LICENCE
CONVENTIONAL MICROLIGHT AEROPLANES
PRACTICAL TRAINING

1. Aim of training course

The aim of the course is to train a candidate to the level of proficiency required for the issue of a type rating for conventional microlight aeroplanes, and to provide the training necessary to act as pilot-in-command of any conventional microlight aeroplane for which he or she holds a valid class or type rating, engaged in non-revenue flights under visual flight rules.

2. Practical training course

Exercise 1 : Familiarisation with the microlight aeroplane

Aim: To become familiar with the component parts, controls and system of the aeroplane.

- (1) Explanation of the microlight aeroplane
- (2) Cockpit layout
- (3) Systems
- (4) Check lists, drills, controls; and
- (5) emergency drills, consisting of –
 - (a) action in the event of fire on the ground and in the air;
 - (b) equipment or system failures; and
 - (c) escape drills.

Exercise 2 : Preparation for, and action after flight

Aim: To understand how to prepare the aircraft and pilot for flight, and how to leave the aircraft after flight.

- (1) Local rules
- (2) Flight authorisation and microlight aeroplane acceptance
- (3) Serviceability documents
- (4) Required equipment, maps, etc.
- (5) External checks
- (6) Internal checks
- (7) Seat, harness and controls adjustment
- (8) Starting and warming-up checks including safety, people, animals, aircraft and air law
- (9) Seating position – suitable clothing
- (10) Starting and warming-up checks
- (11) Power checks
- (12) Running down and switching off of engine
- (13) Parking, security and picketing
- (14) Completion of authorisation and flight folio sheets

Exercise 3 : Air Experience

Aim: The aim of this sequence is to instil confidence in a learner who has previously flown very little or not at all, to impart some knowledge, and to familiarise the learner with the geography around the training base.

Exercise 4 : Effect of controls

Aim: To understand how each control affects the aircraft in flight.

- (1) Methods of assessing aircraft attitude
- (2) Primary effects when laterally level and when banked;
- (3) Further effects of aileron and rudder – effects of –
 - (a) airspeed
 - (b) slipstream
 - (c) power changes
 - (d) trimming of controls
 - (e) flaps
 - (f) other controls, as applicable
- (4) Use of engine controls
- (5) Airmanship

Exercise 5 : Taxiing

Aim: To safely control the aeroplane while manoeuvring on the ground in different wind conditions and on different surfaces.

- (1) Pre-taxi checks
- (2) Starting, control of speed, and stopping
- (3) Engine handling
- (4) Control of direction and turns
- (5) Turns in confined spaces
- (6) Tail-wheel considerations (if applicable)
- (7) Parking area procedure and precautions
- (8) Effects of wind and use of flying controls
- (9) Effects of ground surface
- (10) Freedom of rudder movement
- (11) Marshalling signals
- (12) Instrument checks
- (13) Air traffic control procedures
- (14) Emergencies (brake and steering failure)
- (15) Airmanship

Exercise 6 : Straight and level flight

Aim: To attain and maintain flight in a straight line and at a constant altitude.

- a. At normal cruising power, attaining and maintaining straight and level flight
- b. Demonstration of inherent stability
- c. Control in pitch, including use of trim
- d. Lateral level, direction and balance, trim
- e. At selected airspeeds (use of power)
- f. During speed and configuration changes
- g. Use of instruments
- h. Airmanship

Exercise 7 : Climbing

Aim: To enter and maintain a steady full-power climb and then return to level flight at a predetermined altitude, and to enter and maintain a steady cruise-climb.

- (1) Entry, maintaining the normal and maximum rate climb and levelling off, with and without flaps (if applicable)
- (2) Levelling off at selected altitudes
- (3) *En route* (cruise) climb
- (4) Maximum angle of climb
- (5) Use of instruments
- (6) Airmanship

Exercise 8 : Descending

Aim: To enter and maintain a steady glide-descent and then, at a predetermined altitude, to return to level flight or to climb, and to enter and maintain a steady cruise descent.

- (1) Entry, maintaining and levelling off
- (2) Levelling off at selected altitudes
- (3) Glide, powered and cruise descent (including effect of power and airspeed)
- (4) Use of instruments for precision
- (5) Side-slipping
- (6) Airmanship

Exercise 9 : Stalling

Aim: To recognise and enter a fully-developed stall from various modes of flight both straight and turning, and to recover with minimum height-loss to a safe flight mode; to become familiar with the 'feel' of the aeroplane in slow flight just above the stall speed; and to recognise the symptoms of the incipient stall and to restore the aeroplane to safe flight before the stall occurs.

A. Slow flight

The objective is to improve the learner's ability to recognise inadvertent flight at critically low speeds and provide practice in maintaining the microlight aeroplane in balance should this situation occur.

- (1) Safety checks
- (2) Introduction to slow flight
- (2) Controlled flight
 - a) clean at stall speed plus 10 MPH
 - b) full flaps at stall speed plus 10 MPH
- (4) Application of full power with correct attitude to achieve flying speed, correcting for torque and pitch
- (5) Airmanship.

B. Stalling

- (1) Airmanship
- (2) Safety checks
- (3) Symptoms
- (4) Recognition
- (5) Clean stall and recovery without power and with power
- (6) Recovery when a wing drops
- (7) Approach to stall in the landing configuration, with and without power, recovery at the incipient stage

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- (8) After engine failure while climbing steeply at full power

Exercise 10 : Medium Turns

Aim: To enter and maintain a medium (up to approximately 30° bank angle) turn whilst maintaining level flight and then to return to straight and level flight on a new predetermined heading.

- (1) Entry and maintaining medium level turns
- (2) Resuming straight and level flight
- (3) Faults in the turn – balance
- (4) Turns onto selected headings, use of either gyro heading indicator or compass
- (5) Use of instruments
- (6) Airmanship.

Exercise 11 : Descending and Climbing Turns

Aim: To enter and maintain a medium (up to approximately 30° bank angle) turn whilst maintaining a climb or descent, or to enter and maintain a turn from a straight climb or descent.

Note: Ideally, climbing turns should not exceed 15 deg bank angle, to optimise rate of climb.

- (1) Entry and maintaining medium descending and climbing turns
- (2) Resuming straight and level flight
- (3) Faults in the turn - balance
- (4) Turns onto selected headings, use of either gyro heading indicator or compass
- (5) Use of instruments
- (6) Airmanship.

Exercise 12 : Take Off and Climb to Downwind Position

Aim: To safely take-off and climb the aeroplane to position on the downwind leg at circuit height; to land safely in the event of an engine failure after take-off or at any time in the circuit; and to decide against continuation of the take-off – taking the appropriate action – if for some reason continuation would be unsafe.

- (15) Pre-take-off checks
- (16) Factors affecting the length of the take-off roll and the initial climb
- (17) Into wind take-off
- (18) Nose wheel / tail wheel considerations
- (19) Drills during and after take-off
- (20) Short take-off and soft-field procedures / techniques, including performance calculations
- (21) Undulating (rough field) considerations
- (22) Noise abatement procedures
- (23) Abandoned take-off
- (24) Engine failure after take-off (EFATO) up to early downwind.
Note: !This exercise may not be practiced by a solo student!
- (11) Airmanship

Exercise 13 : Circuit, Approach and Landing

Aim: To fly an accurate circuit and carry out a safe approach and landing.

- (1) Circuit procedures, downwind, base leg, key points
- (2) Powered approach and landing
- (3) Nose wheel / tail wheel considerations
- (4) Effect of wind on approach and touchdown speeds, use of flaps (if applicable)
- (5) Glide approach and landing
- (6) Short-landing and soft-field procedures / techniques
- (7) Missed approach / go-around
- (8) Correcting bad approaches
 - Hot and High
 - Low and slow.
- (9) Noise abatement procedures
- (10) The hold-off period and touch-down
- (11) Effect of ground surface and gradient on the landing run
- (12) Use of brakes (if applicable)
- (13) Control during ground run
- (14) Airmanship

Exercise 14 – Spin awareness (if applicable)

Aim: To understand and recognise the onset of situations that may lead to an inadvertent spin, and to learn how to instinctively take the necessary control actions to effect a recovery back to normal flight condition before a spin occurs; i.e.: to recover at the incipient stage.

- (1) Cause of spin
- (2) Recognition of incipient spin
- (3) Recovery from the incipient spin
- (4) Airmanship

Exercise 15 : First Solo

Aim: To carry out a safe and accurate solo circuit, approach and landing.

One circuit only. Then full stop.

The student must be checked out for first solo by a Grade A or Grade B instructor, and if possible is in full uninterrupted radio contact with the student during the entire first solo exercise.

Before flying solo a learner must:

- c) in addition to being proficient in exercises 1 to 14
- d) be able to reasonably execute a simulated emergency landing from any position in the circuit.
- e) He or she must also have completed a minimum of 6 (six) hours of dual instruction.
- f) He or she must be the holder of a valid Student Pilot licence and have successfully passed the required exams.

During the next 3 hours of solo flight, the student must remain in the circuit, consolidating Exercise 12 and 13. The student must receive a dual check-out for each of these three hours, and, if possible, the supervising instructor must remain in full, uninterrupted radio contact with the student during this time.

Exercise 16 : Side-slipping

Aim: The learner should be shown and become convinced of the effect of side-slipping on the relationship between heading and ground path. How this out-of-balance manoeuvre can be used to increase the rate of descent for a given airspeed and its usefulness in crosswind landings. (While the learner is learning how to use the controls during a side-slip, the exercise should be performed at altitude.)

- (1) Effects of controls in a side-slip
- (2) Principles involved
- (3) Types of side-slips
- (4) How exercise applies to flying
- (5) Airmanship

Exercise 17 : Steep Turns

Aim: To carry out a co-ordinated level turn at steep angles of bank and to recognise and recover from a spiral dive; and to avoid wake turbulence.

- (1) Steep 360° turns (up to 45° bank angle) maintaining altitude, recovering to straight and level flight.
- (2) Steep descending turns (up to 60° bank angle), completing a minimum of 2 complete orbits, without engine power and without entering spiral dive, then recovering to straight and level flight.
- (3) Wake turbulence / disorientation
- (4) Stalling in the turn and recovery
- (5) Recoveries from unusual attitudes, including spiral dives
- (6) Airmanship

Exercise 18 : Use of instruments

Aim: To develop the habit of checking constantly both navigational and engine instruments in flight whilst keeping a good look-out for other aircraft.

- (1) Navigational instruments
- (2) Engine instruments
- (3) Scanning techniques
- (4) GPS and other basic electronic navigation systems
- (5) Airmanship

Exercise 19 : Low flying

Aim: To safely operate the aeroplane at heights lower than those normally used.

- (1) Emphasis on regulations governing low flying
- (2) Low-level familiarisation
- (3) Effect of drift
- (4) Effect of wind on ground speed
- (5) Effect of wind in inducing apparent skids and slips in turns
- (6) Joining circuit in poor weather;
- (7) Bad-weather circuit
- (8) Airmanship

Exercise 20 : Cross-wind Take-off and Landing

Aim: To be able to handle both cross-wind take-offs and landings, including downwind landings in an emergency; to be able to input the correct amount of control to correct drift to ensure the track is a continuation of the take-off and landing path of the aeroplane.

- (1) Aerodynamic and mechanical considerations
- (2) Cross-wind take-offs
- (3) The circuit
- (3) Approach and cross-wind landings
 - crabbing method
 - forward slipping method
- (5) Airmanship

Exercise 21 : Precautionary landings

Aim: A precautionary landing is one not contemplated before the flight commenced and where engine power is still available, enabling the pilot the opportunity of selecting and inspecting a suitable landing area before executing a landing in an unfamiliar place.

- (1) Occasions necessitating
- (2) Full procedure away from aerodrome to break-off height
- (3) In-flight conditions
- (4) Landing area selection -
 - (a) normal aerodrome;
 - (b) disused aerodrome
 - (c) ordinary field.
 - (d) habitation for after-landing assistance
- (5) Inspection of landing area
- (5) Circuit and approach
- (6) PAN call
- (7) Actions after landing
- (8) Airmanship

Exercise 22 - Forced landing

Aim: To carry out a safe descent and landing in the event of the engine failing during flight.

Note: This exercise to be practiced at the training airfield, and commenced outside of the circuit pattern.

- (1) Forced-landing procedure
- (2) Choice of landing area, provision for change of plan
- (3) Gliding distance
- (4) Descent plan
- (5) Key positions
- (6) Engine cooling
- (7) Use of radio, Mayday call
- (9) Base leg
- (10) Final approach
- (11) Landing
- (12) Actions after landing
- (13) Airmanship

Exercise 23 : Action in Event of Fire

Aim: Fire is extremely rare in modern microlight aeroplanes but it is essential that a pilot has a thorough knowledge of the procedures to be adopted in his or her particular type of aeroplane in order to extinguish a fire both on the ground and in the air.

- (1) Identification of fire
- (2) Isolation / extinguishing of fire
- (3) Flight procedures / emergency actions
- (4) Airmanship

Exercise 24 : Restarting the engine in flight

Note: This exercise must not be practiced by a learner while flying solo. It must be within easy glide to the training field, to be treated as a simulated emergency until engine is successfully restarted.

Aim: Most two-stroke engines will at some time or another stop whilst in flight. It is important that the learner does not panic but is prepared mentally for and able to cope with the situation.

- (1) Engine failure checks
- (2) Engine restart procedures
- (3) Airmanship

Exercise 25 : Unusual and dangerous attitudes / conditions

Aim: To recognise potentially dangerous conditions of flight and to recover safely from unusual attitudes.

Note: this exercise must not be practised by a learner while flying solo.

- (1) Recovery from inadvertent mishandling of controls –
 - (a) at high speeds
 - (b) in stall recovery in various configurations
 - (c) in a steep turn
 - (d) following hitting wake turbulence in a 360° steep turn at 45° to 60° bank angles
- (2) Airmanship

Exercise 26 : Exercise 26 : Loose Formation / Group flying

Aim: to safely fly in loose formation with other aircraft and know safe landing and taking off procedures

- (1) Positioning in front, behind or alongside other aircraft
- (2) Taking off and landing considerations
- (3) Turning
- (4) Wake turbulence
- (5) Awareness of other aircraft
- (6) Blind spots
- (7) Manoeuvres in front of other aircraft and the effect on them
- (8) Radio work
- (9) Air Law

Exercise 27 : Navigation

Aim: To fly accurately and safely in VMC under VFR a predetermined route CAR 62.04.2 (1) (a) and (b), without infringing the rules governing regulated airspace.

A : Basic Navigation

- (1) Flight planning
 - (a) Weather forecast
 - (b) Map selection and preparation
 - (i) choice of route
 - (ii) controlled airspace
 - (iii) danger, prohibited and restricted areas
 - (iv) safety altitudes
 - (c) Calculations
 - (i) magnetic heading(s) and time(s) *en route*
 - (ii) fuel consumption
 - (iii) mass and balance
 - (iv) mass and performance
 - (d) Flight information
 - (i) NOTAMS etc.
 - (ii) radio frequencies
 - (iii) selection of alternate aerodromes
 - (e) Microlight aeroplane documentation
 - (f) Notification of the flight
 - (i) pre-flight administrative procedures
 - (ii) flight plan form
- (2) Departure
 - (a) Organisation of cockpit workload
 - (b) Departure procedures
 - (i) altimeter settings
 - (ii) ATC liaison in controlled / regulated airspace
 - (iii) setting-heading procedure
 - (iv) noting of ETAs
 - (c) Maintenance of altitude and heading
 - (d) Revisions of ETA and heading
 - (e) Log keeping
 - (f) Use of radio
 - (g) Use of nav aids (if applicable)
 - (h) Minimum weather conditions for continuation of flight
 - (i) In-flight decisions
 - (j) Transiting controlled / regulated airspace
 - (k) Uncertainty-of-position procedure
 - (l) Lost procedure
- (3) Arrival
 - (a) Aerodrome joining procedure
 - (i) ATC liaison in controlled / regulated airspace
 - (ii) altimeter setting
 - (iii) entering the traffic pattern
 - (iv) circuit procedures
 - (b) Parking
 - (c) Security of microlight aeroplane

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- (d) Refuelling
 - (e) Closing of flight plan, if applicable
 - (f) Post-flight administrative procedures

(4) Airmanship

B : Navigation at low heights and in reduced visibility

Note: This is not to be accepted as standard cross country technique. The student should know to avoid situations where it may be encountered.

- (1) Actions prior to descending
- (2) Hazards (e.g. obstacles, other aircraft)
- (3) Difficulties of map reading
- (4) Effects of wind and turbulence
- (5) Avoidance of noise-sensitive areas
- (6) Joining the circuit
- (7) Bad-weather circuit and landing
- (8) Airmanship

C : Use of GPS

- (4) Entering weigh-points
- (5) Reading GPS information
- (6) Following GPS routes
- (7) Practical limitations

Note: Exercise 28 and 29 do not need to reflect practical flying. These exercises merely need to be endorsed in the student/ pilot's log book by the instructor. This endorsement can be done by any grade instructor.

Exercise 28: Pre-flight inspections

Aim: To instil in the student the habit of systematic, thorough and regular pre-flights

- (1) Fuselage
 - a. Symmetry
 - b. Structure
 - c. Suspension
 - d. Steering
 - e. Sail / skin
 - f. cables
 - g. tubing
 - h. suspension
 - i. steering
 - j. brackets
 - k. Instrument console, including power supply to instruments, intercom, radio and aerial connections.
 - l. engine mount
 - m. wheels and tyres
 - n. brakes
 - o. seats and seatbelts
 - p. fuel-tank
 - q. battery

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- (2) Engine, exhaust and gearbox
 - a. Oil leaks
 - b. Spark plug caps
 - c. Cables and electrical wiring
 - d. Carb rubbers
 - e. Fan belt / Radiator / Cooling system
 - f. Exhaust blow-by
 - g. Exhaust springs
 - h. Air filters
 - i. Carburetors
 - (3) Systems
 - a. Fuel system
 - b. Electrical system

Exercise 29: Passengers

- (1) Embarking, disembarking, briefing
- (2) Security
- (3) Comfort