

8 Pilot Flight Training

8.1 Training

All HGFA Training will be conducted to an approved HGFA training syllabus, as amended from time to time.

8.1.1.1 Pilots Piloting CAO 95.8 Aircraft

Prior to a Student Pilot undertaking solo flight, he or she is required to reach the levels of competency as indicated in the Syllabus of:

- (a) Basic Aeronautical Knowledge, and
- (b) Practical Flight Training.

8.1.1.2 Pilots Piloting CAO 95.10 & 95.32 Aircraft

Prior to a Student Pilot attempting solo flight in a weightshift microlight or powered paraglider, he or she is required to reach the levels of competency as indicated in the Syllabus of;

- (a) Basic Aeronautical Knowledge, and
- (b) (WM) Practical Flight Training, or
- (c) PPG Training Workbook – Foot & Wheel

8.1.1.3 Flight Tests

Prior to the student being issued with any HGFA Pilot Certificate he or she will be required to undergo a flight test conducted by a Flight Instructor or Chief Flight Instructor. The student pilot will be required to demonstrate his / her aircraft control and judgement skills to the standard required by the appropriate Flight Training Syllabus and to the satisfaction of the Instructor.

8.1.1.4 Flight Tests, Instructors

Instructors will be required to demonstrate to the HGFA Operations Manager or his/her delegate, his or her ability to conduct flight instruction for given skill sequences as well as an ability to perform all basic skill manoeuvres to the highest standard and the satisfaction of the HGFA Operations Manager (or delegate).

8.1.1.5 HGFA Radio Operators Certificate

Carriage and use of VHF radio is mandatory for all HGFA aircraft operations in the vicinity of Registered, Certified and Military aerodromes as defined in CAR166.

Use of aeronautical VHF aeronautical frequencies is illegal unless the pilot is appropriately licensed or certified.

A HGFA Radio Operator Endorsement complies with the relevant CAO requirements for use of aeronautical band radios.

8.2 Training Facilities (HG/PG/PPG/WM)

8.2.1 Establishment of Flight Training Facilities

HGFA student pilots and other certificate holders may only be given flight training at approved Flight Training Facilities (FTF). Prior to the commencement of flight training, the flight training facility must be given written approval to operate by the HGFA Operations Manager.

8.2.1.1 Training Facility Application

An application for inspection of a flight training facility must include:

- (a) A signed application declaration on the appropriate form;
- (b) Payment of the inspection fee as determined by the HGFA Committee; and
- (c) Particulars of the training facility, including:
- (d) description of classroom and contents;
- (e) details of training aircraft;
- (f) site names and location addresses; and
- (g) site usage agreements and conditions of operation for any nominated sites managed by HGFA Clubs.

Where a training facility utilises weightshift microlights, the following details must also be provided:

- (a) details of runway/s (including dimensions and a description of surrounding terrain and hazards);
- (b) map of training area/s;
- (c) written approval/s for use from the landholders, runway owner/s; and
- (d) procedures to be implemented to ensure appropriate crowd control and public safety.

8.2.1.2 Equipment and Documentation (HG/PG/PPG)

Prior to the inspection of the flight training facility by the HGFA Operations Manager (or delegate) the proposed Flight Training Facility must have the following equipment in place:

- (a) Classroom facilities of sufficient size and comfort to enable the proper instruction of trainee pilots.
- (b) These classroom facilities may be permanent or mobile and must contain:
- (c) sufficient tables and chairs to accommodate at least four trainees, plus instructional staff;
- (d) a blackboard or whiteboard (recommended size 1200 mm x 1800 or larger);
- (e) facilities for the storage for records.
- (f) A comprehensive First Aid Kit must be located wherever students are undergoing training.

Note: 1/. Facility owners should contact a reputable first aid organisation such as St John's Ambulance Service for advice on what is appropriate to include in their First Aid Kit.

2/. The above list of equipment and document storage, is to be maintained in good working order and up to date at all times, for HGFA approval of the Flight Training Facilities to be maintained. Failure to do so may lead to suspension of an FTF's approval to operate.

8.2.1.3 Equipment and Documentation (WM)

Prior to the inspection of the flight training facility by the HGFA Operations Manager (or delegate) the proposed Flight Training Facility must have the following equipment in place:

- (a) Classroom facilities of sufficient size and comfort to enable the proper instruction of trainee pilots.
- (b) These classroom facilities may be permanent or mobile and must contain:
- (c) Sufficient tables and chairs to accommodate at least four (4) trainees, plus instructional staff;
- (d) A blackboard or whiteboard (recommended size 1200 mm x 1800 or larger);
- (e) Wall Maps defining the training area and local area procedures; and
- (f) Lockable filing cabinets in which training records can be stored safely

(g) A comprehensive First Aid Kit must be located wherever students are undergoing training.

Note: 1/. Facility owners should contact a reputable first aid organisation such as St John's Ambulance Service for advice on what is appropriate to include in their First Aid Kit.

2/. The above list of equipment and document storage, is to be maintained in good working order and up to date at all times, for HGFA approval of the Flight Training Facilities to be maintained. Failure to do so may lead to suspension of an FTF's approval to operate.

8.2.1.4 Satellite Flight Training Facilities

Permanent Satellite Flight Training Facilities must be set up in the same manner as the parent Flight Training Facility.

Temporary Satellite Flight Training Facilities may be established without all of the onsite equipment and documentation requirements as specified in sections [8.2.1.2](#) or [8.2.1.3](#).

Operations from any one Temporary Satellite Flight Training Facility shall not exceed one period of 14 continuous days in any one calendar month, unless approved by the HGFA Operations Manager.

8.2.1.5 Operations

Satellite Flight Training Facilities:

- (a) may only be controlled by a nominated Flight Instructor acting under the instructions of his or her Chief Flight Instructor approved by the HGFA Operations Manager in writing
- (b) may only engage a Flight Experience, Apprentice or other Flight Instructors with written approval for the HGFA Operations Manager
- (c) Flight Instructors must report by phone or in writing to the Chief Flight Instructor at the commencement of each day's activities, or during the day as appropriate.
- (d) Flight Instructors must report by phone or in writing to the Chief Flight Instructor at the completion of each day's activities.

8.2.1.6 Approval

Prior to the commencement of flight training operations at a permanent Satellite Flight Training Facility written approval for operations must be obtained from the HGFA Operations Manager.

8.2.2 Training Facilities (WM)

Weightshift Microlight flight training facilities will be established and operated in accordance with the HGFA / RA-Aus Memorandum of Understanding (MOU-01 -- See [1.3](#) - Operational Documents Register).

8.2.2.1 Site Control

At training facilities:

- (a) where aircraft operations are operating from a training field, the Chief Flight Instructor (CFI) of the Training Facility will have the authority to control and direct HGFA weightshift microlight operations and where the CFI is not the designated Duty Pilot the CFI will ensure a Duty Pilot is appointed.
- (b) the Duty Pilot will have the authority to control and direct operations that are conducted in accordance with CAOs and relevant legislation, this manual and any conditions set down by the owner of the airfield or aerodrome.
- (c) where other aircraft or other aeronautical operations other than those under HGFA oversight are being conducted from the flying field then the weightshift microlight Duty Pilot shall co-ordinate with these other operators, or their nominated Duty Pilot, to ensure that all operations are conducted in a safe and orderly manner.
- (d) where required as a result of mixed operations from a flying field, a Duty Pilot shall be elected from those Pilot Certificate holders present.

8.2.3 Facility Inspections (HG/PG/PPG)

- (a) All HGFA approved flight training facilities must be operated in accordance with HGFA requirements and this manual.
- (b) Flight Training Facilities will undergo a site audit every 2 years at a minimum, unless an exemption is granted by the Operations Manager.
- (c) Audits will be conducted by the Operations Manager or an approved delegate.
- (d) The CFI of a Flight Training Facility must complete a Flight Training Facility Audit Report (HGFA Doc. **FAC-03** - See [1.3](#) - Operational Documents Register) every 12 months and lodge it with the HGFA office by the 30th of June each year.
- (e) All documentation and equipment must be made available for inspection and audit by the HGFA Operations Manager or his / her delegate on request.
- (f) Copies of aircraft, student and flight records, training documentation and proof of standards compliance must be provided upon request by the Operations Manager, his or her delegate or a CASA representative.
- (g) The Training Facility will also supply what ever supporting documents are deemed necessary by the HGFA administration to clarify or support proof of standards and training requirements have been met.
- (h) Equipment and document storage, is to be maintained in good working order and up to date, for HGFA approval of the Flight Training Facilities to be maintained
- (i) Supply supporting documentation upon request from the Operations Manager or HGFA Administration as proof of training and standards compliance. Failure to supply is considered a breach of operational standards by the Training Facility and can give cause for withdrawal of the Training Facility approval to operate by the Operations Manager.

8.2.4 Facility Inspections (WM)

- (j) All HGFA approved flight training facilities must be operated in accordance with HGFA requirements and this manual.
- (k) Flight Training Facilities will undergo a site audit every 2 years at a minimum, unless an exemption is granted by the Operations Manager.
- (l) Audits will be conducted by the Operations Manager or an approved delegate.
- (m) The CFI of a Flight Training Facility must complete a Flight Training Facility Audit Report (HGFA Doc. **FAC-10** - See [1.3](#) - Operational Documents Register) every 12 months and lodge it with the HGFA office by the 30th of June each year.
- (n) All documentation and equipment must be made available for inspection and audit by the HGFA Operations Manager or his / her delegate on request.
- (o) Copies of aircraft, student and flight records, training documentation and proof of standards compliance must be provided upon request by the Operations Manager, his or her delegate or a CASA representative.
- (p) The Training Facility will also supply what ever supporting documents are deemed necessary by the HGFA administration to clarify or support proof of standards and training requirements have been met.
- (q) Equipment and document storage, is to be maintained in good working order and up to date, for HGFA approval of the Flight Training Facilities to be maintained
- (r) Supply supporting documentation upon request from the Operations Manager or HGFA Administration as proof of training and standards compliance. Failure to supply is considered a breach of operational standards by the Training Facility and can give cause for withdrawal of the Training Facility approval to operate by the Operations Manager.

8.3 Flight Training Syllabus

8.3.1 Theory

8.3.1.1 Basic Aeronautical Knowledge (HG/PG/PPG)

Because the gross motor control skills of flying foot launch and weight shift aircraft are not too difficult to acquire, it is of paramount importance that the student pilot does not fly into situations beyond his/her theoretical understanding and hence beyond the point of making appropriate and safe judgements and decisions.

The advancement of student pilots without sufficient understanding or knowledge is as potentially risky as advancement without sufficient physical control skills, therefore much planning should go into the scheduling, preparation and delivery of theory support lessons.

The following syllabus outlines, the subject areas and specific teaching points that are to be covered in the pilot training program. The qualifying letters are used to indicate the degree of knowledge and understanding necessary for each topic at the key stages of progress toward acquiring HGFA Pilot Certificates:

- (a) Basic understanding of the subject matter, sufficient, with some assistance from the instructor, for the solution of simple practical problems.
- (b) Sound understanding of the subject material, sufficient, without assistance, for the solution of more complex problems and the application toward flight strategies.
- (c) Thorough understanding of the subject matter, capable without assistance, to provide detailed explanations of strategies, problem solutions and forward planning, by both explanation and practical application.
- (d) Practical application of relevant procedures and knowledge.

Table 2: Syllabus of Aeronautical Knowledge (SYL-01)

| Subject Area | Flights >200' AGL | Sup'v-HG PG2 & PG3. | Int-HG & PG4. | Adv-HG & PG5. | PPG Pilot Cert. |
|---|-------------------|---------------------|---------------|---------------|-----------------|
| 1. An understanding of the following terms: | | | | | |
| Aerofoils – camber, span & chord | A | B | C | C | C |
| Aspect ratio | A | B | C | C | C |
| Weight, lift and drag as forces acting on an aircraft | C | C | C | C | C |
| Parasitic & induced drag | A | B | C | C | C |
| Wing tip vortices | B | C | C | C | C |
| Angle of attack – relative airflow | B | C | C | C | C |
| Stalling angle of attack | C | C | C | C | C |
| Wing loading | A | B | C | C | C |
| Pitch, roll and yaw | C | C | C | C | C |
| Wash-out (wing twist) | B | C | C | C | C |
| Wing sweep | A | B | C | C | C |
| Anhedral & dihedral | A | A | B | C | C |
| Trim speed | B | C | C | C | C |

| | | | | | |
|---|---|---|---|---|---|
| Glide angle & L/D ratio | B | C | C | C | C |
| Variable billow (VB & VG) | A | B | C | C | C |
| | | | | | |
| 2. Relationship of the following factors in the production of lift and drag by an aerofoil: | | | | | |
| Angle of attack | C | C | C | C | C |
| Air density | A | B | B | C | C |
| Angle of bank | A | B | C | C | C |
| Velocity | A | B | C | C | C |
| Surface area/shape | A | B | C | C | C |
| | | | | | |
| 3. The relationship of the following factors: | | | | | |
| Airspeed, ground speed and wind strength | C | C | C | C | C |
| Angle of attack and stall | C | C | C | C | C |
| Angle of attack and brake position/bar position and pressures | C | C | C | C | C |
| Aircraft dive recovery and wing design features | A | C | C | C | C |
| Wind strength direction and glide angle penetration | B | C | C | C | C |
| Wash out and stall recovery | B | C | C | C | C |
| Wing tip vortices, induced drag and ground effect | B | C | C | C | C |
| Centre of Gravity and Centre of Pressure (and pendulum stability) related to aircraft control | B | C | C | C | C |
| Centre of Gravity and hang point of positioning and limits) | A | A | B | C | C |
| Altitude indicated air speed ground speed & glide performance | A | B | B | B | B |
| Air speed stall speed and G loading | | B | C | C | C |
| Effects of wing loading on take-off, flight and landing | - | B | C | C | C |
| Consideration for security of loads/equipment | - | B | C | C | C |
| | | | | | |
| 4. An understanding of the primary controls and how they should be used: | | | | | |
| Weight shift control, Use of brakes/back risers | C | C | C | C | C |
| Glide adjustments both airspeed and altitude | P | B | C | C | C |
| How the aircraft is turned & the relationship between angle of bank, airspeed and rate radius of turn | B | B | C | C | C |
| The effects of power settings and angle of attack to achieve varying angles of climb and descent | - | - | - | - | C |
| How to improve or degrade turn efficiency (control of slip) | A | B | C | C | C |
| Control of cross-wind headings (crabbing and crabbing turns) | P | C | C | C | C |
| Responsiveness of control through range of airspeeds | B | C | C | C | C |
| Pitch and roll co-ordination for 360 degree turns in a variety of conditions | - | C | C | C | C |
| Maintaining heading and pitch control through turbulence | B | C | C | C | C |
| | | | | | |
| 5. Stalling: | | | | | |
| The causes of a stall | C | C | C | C | C |
| Indications of an impending stall | C | C | C | C | C |

| | | | | | |
|---|---|---|---|---|---|
| How to recover from a stall | C | C | C | C | C |
| The relationship between angle of attack and airspeed | C | C | C | C | C |
| The relationship between angle of bank and stalling | B | C | C | C | C |
| The relationship between angle of bank and G loading | B | C | C | C | C |
| The effect of wing loading on stalling speed | B | C | C | C | C |
| The effect of angle of bank on stalling speed | B | C | C | C | C |
| Aircraft response to stalling in a turn | P | B | C | C | C |
| Use of controls in recovering from a stall in a turn | B | C | C | C | C |
| How to recognise and recover from a spin or a spiral | B | C | C | C | C |
| | | | | | |
| 6. Take-off: | | | | | |
| The relationship between wind strength and take-off techniques | B | C | C | C | C |
| The effect of wind direction on take-off run/roll | B | C | C | C | C |
| The effects of pitch/brake adjustments during take-off run/roll | P | C | C | C | C |
| The effect (if any) of propeller rotation and steering control on directional control during take off | - | - | - | - | C |
| The need to adjust techniques for different or changing launch slope angles | B | C | C | C | C |
| The use of and commands for assisted launches | P | C | C | C | C |
| | | | | | |
| 7. Approach and Landing: | | | | | |
| The Standard Landing Approach and its advantages | B | P | C | C | C |
| Reasons for figure eight landing approach | A | B | C | C | C |
| Emergency landing options and overshoot control | B | B | C | C | C |
| Effect of wind gradient and how it is overcome | B | C | C | C | C |
| Bleeding-off of airspeed and flare timing and technique | P | B | C | C | C |
| Coping with cross wind landing | P | B | C | C | C |
| Final glide judgment | A | C | C | C | C |
| Low turns and wind direction considerations | B | C | C | C | C |
| Ground handling, parking and de-rigging in various conditions | C | C | C | C | C |
| Balked/missed approach and go around | - | - | - | - | C |
| | | | | | |
| 8. Aircraft Maintenance: | | | | | |
| Recognition of defects/damage, causes and implications | P | P | C | C | C |
| Storage, transport and handling | P | C | C | C | C |
| Rigging and de-rigging considerations | P | C | C | C | C |
| Logging maintenance procedures | P | C | C | C | C |
| | | | | | |
| 9. Rules and Procedures: | | | | | |
| The use and purpose of log book/s | P | C | C | C | C |
| HGFA Operations Manual | B | C | C | C | C |
| CAO 95.8, CAO 95.10, CAO 95.32 | B | C | C | C | C |
| Rules of the Air | B | C | C | C | C |
| Use of Air navigation charts | - | A | B | C | C |

| | | | | | |
|--|---|---|---|---|---|
| Flight & area restrictions/controlled and uncontrolled airspace | - | A | B | C | C |
| 10. Meteorology: | | | | | |
| Airflow and air pressure differences | A | B | C | C | C |
| Lift, sink and turbulence | B | C | C | C | C |
| Effect of terrain influences on airflow | B | C | C | C | C |
| Wind strength considerations and indicators | B | C | C | C | C |
| Wind direction indicators and considerations | P | C | C | C | C |
| General observation skills | P | P | C | C | C |
| Turbulence: mechanical, terrain, convection, local wind, | A | C | C | C | C |
| Relationship of wind velocity and turbulence | B | C | C | C | C |
| The evaluation of potential turbulent areas or conditions and their possible effect on flight operations | A | B | C | C | C |
| Wind gradient | P | C | C | C | C |
| Sea breezes, valley winds, anabatic and katabatic winds and diurnal wind changes | A | B | C | C | C |
| Fronts, squalls, storms and thermals | A | B | C | C | C |
| Major weather phenomena and their indications relative to flight decisions | P | C | C | C | C |
| Clouds and dangers | A | B | C | C | C |
| Visibility | - | A | B | B | C |
| Wind Shear | A | B | C | C | C |
| Dew-point, lapse rate, convergence and inversions | A | B | C | C | C |
| Weather Chart analysis | - | - | B | C | C |
| Soaring forecasts | - | - | B | C | C |
| Met terminology and standard aviation abbreviations | | | A | C | C |
| 11. Soaring Strategies: | | | | | |
| Glider sink rate and strength of lift relationship | B | C | C | C | C |
| Ridge/slope soaring strategies | - | P | C | C | C |
| Influence of thermals/instability | B | C | A | C | C |
| Soaring envelope | P | B | C | C | B |
| Locating thermals | - | A | B | C | B |
| Thermal soaring strategies | - | A | B | C | A |
| XC planning | - | - | A | B | B |
| 12. Emergency procedures: | | | | | |
| Tail wind/cross wind landings | B | C | C | C | C |
| Stall whilst flying near slope | A | C | C | C | - |
| Stall in wind gradient close to ground | P | C | C | C | C |
| Overshoot toward surf | A | C | C | C | - |
| Loss of penetration at normal flying speeds | A | B | C | C | - |
| High speed oscillations | A | P | C | C | C |
| Tree, steep slope and water landings | A | A | B | C | A |
| Obstacles in landing area | - | B | C | C | B |
| Cloud suck/white out | A | C | C | C | |
| Extreme turbulence/extreme sink | - | A | C | C | C |

| | | | | | |
|---|---|---|---|---|---|
| 13. Airmanship | | | | | |
| Flight Planning and traffic look-out | P | P | C | C | C |
| Local site rules and considerations | P | P | B | C | C |
| Pre-flight check-in with SO/ Duty Pilot/ local advanced pilots | P | C | C | C | C |
| Margins for error and number of variables concept | B | C | C | C | C |
| Fitting into the flying community | P | P | P | C | C |
| Liaison with other airspace users | P | P | P | C | C |
| XC Navigation skills | | | | | |
| Navigation instruments - understanding the application and units of measurement of: | | | | | |
| - pressure altimeter | | | B | C | C |
| - Airspeed indicator | | | B | C | C |
| - Magnetic compasses and associated considerations in use | | | B | C | C |

8.3.1.2 Specific to PPG

| Subject Area | PPG Pilot Cert. |
|--|-----------------|
| Engine, trike base and airframe pre-flight | C |
| Fire prevention considerations during refuelling | C |
| In-flight power limitations | C |
| Propeller pitch considerations | B |
| Effect on engine and aircraft performance of fine and coarse pitch propellers | B |
| Reduction drives | B |
| Precautions during engine warm-up, run up and run down | C |
| Engine and associated systems, understanding: | |
| how a piston engine functions | B |
| ignition system components | B |
| ignition system faults and effects on engine operation | B |
| understanding fuel and carburation systems | B |
| understanding octane levels, fuel grading and selection applicable to engine performance | B |
| venting | B |
| useable and unusable fuel | C |
| control of engines and indications of engine performance | C |
| Engine instrumentation - understanding the application and units of measurement of: | |
| - Tachometer | C |
| - Temperature and other relevant engine monitoring gauges | B |

8.3.1.3 Weightshift Microlight Syllabus of Flight Training (Theory).

Please refer to the *Memorandum Of Understanding between the HGFA and RAA*.

HGFA Doc: **MoU-01** (See 1.3 - HGFA Operational Documents Register)

CASA File: EF11/155471 "MOU between RA-Aus and HGFA"

In accordance with the CASA directive issued on 22nd July 2011, both the HGFA and RAA are to provide assurance to CASA that the oversight of Weightshift Microlights administered by the HGFA & RA-Aus under CAO95.32 are standardised. This standardisation is to be across those elements of flight training and training in aircraft maintenance.

8.3.2 Practical Flight Training

8.3.2.1 Hang Gliding & Paragliding Syllabus

The following syllabi specify the minimum standards of ability required. The percentage values are used to indicate the minimum degree of ability required for each individual item within a particular subject as follows:

| % skill | |
|---------|---|
| 50% | Assisted by the instructor to perform the activity correctly. {Examples: wire/keel assisted launch; constant radio direction for soaring; under supervision in two place aircraft} |
| 75% | Ability to perform the activity correctly without assistance, but under carefully supervised conditions. {Examples: High glides without radio instructions; soaring or WM operations without radio but with complete debrief and flight analysis} |
| 100% | Ability to perform the skill sequence correctly and adjusts actions automatically to cope with emergencies or environmental fluctuations, without instructional supervision or assistance. |
| Note: | The percentages indicated define the minimum acceptable standards, for issue of the relevant Pilot Certificate or endorsement, to be achieved prior to undergoing a flight test. |

Hang Gliding, Syllabus of Flight Training.

| Skill | Ab Initio | Flights > 200 ft AGL | Supervised Certificate | Intermediate Certificate | Advanced Certificate |
|---|-----------|----------------------|------------------------|--------------------------|----------------------|
| 1. Aircraft Set-up | 100% | 100% | 100% | 100% | 100% |
| 2. Flight Preparation: | | | | | |
| Pre-flight inspection | 100% | 100% | 100% | 100% | 100% |
| Harness/helmet check | 100% | 100% | 100% | 100% | 100% |
| Attachment/hang check | 100% | 100% | 100% | 100% | 100% |
| 3. Ground Handling: | | | | | |
| Assessment of conditions | 50% | 75% | 100% | 100% | 100% |
| Establishment/attitude | 75% | 75% | 100% | 100% | 100% |
| Pre take off check | 75% | 100% | 100% | 100% | 100% |
| 4. Launch Phase | | | | | |
| Smooth acceleration | 75% | 100% | 100% | 100% | 100% |
| Control of pitch and roll throughout take-off | 75% | 75% | 100% | 100% | 100% |
| Smooth transition to flight | 75% | 75% | 100% | 100% | 100% |
| Nil wind take-off | 50% | 100% | 100% | 100% | 100% |
| Light-moderate wind | 75% | 100% | 100% | 100% | 100% |
| Slight cross wind take-off | 50% | 75% | 100% | 100% | 100% |
| Moderate winds | N/A | N/A | 75% | 100% | 100% |
| Wire assisted take-off | N/A | N/A | 50% | 100% | 100% |
| 5. Level and Straight Flight | | | | | |
| Control of pitch, attitude and airspeed | 75% | 100% | 100% | 100% | 100% |
| Control of roll and yaw | 75% | 75% | 100% | 100% | 100% |
| Maintenance of heading | 75% | 100% | 100% | 100% | 100% |
| Airspeed, accuracy at trim speed, best glide, minimum sink for conditions & situation | 50% | 75% | 100% | 100% | 100% |
| Prone or harness entry | N/A | 50% | 100% | 100% | 100% |
| 6. Approach and Landing | | | | | |
| Final approach, wings level, accuracy of airspeed, glide adjustment and body position | 50% | 75% | 100% | 100% | 100% |

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Pilot Flight Training - Flight Training Syllabus

Practical Flight Training



| | | | | | |
|--|-----|------|------|------|------|
| Final flare with appropriate timing and power for conditions | 50% | 75% | 100% | 100% | 100% |
| Approach planning | 50% | 75% | 100% | 100% | 100% |
| Adaption of approach for changed conditions or emergency | 50% | 50% | 100% | 100% | 100% |
| Height loss manoeuvring | N/A | N/A | 50% | 75% | 100% |
| Small field landing | N/A | N/A | N/A | 75% | 100% |
| Moderate cross wind final approach leg | N/A | N/A | 50% | 100% | 100% |
| Post landing glider control | 75% | 100% | 100% | 100% | 100% |
| Spot landing accuracy (within 10 metres) | N/A | N/A | N/A | 50% | 100% |
| 7. Turning | | | | | |
| Shallow bank/heading maintenance | 75% | 100% | 100% | 100% | 100% |
| Look out & traffic separation | N/A | 50% | 100% | 100% | 100% |
| Efficient turns for height conservation | N/A | 50% | 75% | 100% | 100% |
| Descending turns & control of slip | N/A | 50% | 75% | 100% | 100% |
| Turns in lifting air | N/A | 50% | 100% | 100% | 100% |
| 360 degree turns, shallow and steep | N/A | 50% | 100% | 100% | 100% |
| Control close to hill | N/A | N/A | 50% | 100% | 100% |
| 8. Stalling | | | | | |
| Recognition of approach of stall | 50% | 100% | 100% | 100% | 100% |
| The stall | N/A | 75% | 100% | 100% | 100% |
| Recovery from straight & Level stall | 50% | 75% | 100% | 100% | 100% |
| Recovery when wing drops | 50% | 75% | 100% | 100% | 100% |
| 9. Flight Planning: | | | | | |
| Observation & interpretation of Conditions | N/A | 75% | 100% | 100% | 100% |
| Crosswind drift allowances and crabbing flight | N/A | 50% | 100% | 100% | 100% |
| Ridge soaring strategies | N/A | 50% | 100% | 100% | 100% |
| Thermal soaring strategies | N/A | N/A | N/A | 75% | 100% |
| Airspace limitations and restrictions | N/A | 50% | 75% | 100% | 100% |
| Emergency procedures | N/A | 50% | 100% | 100% | 100% |
| X/C planning | N/A | N/A | N/A | 75% | 100% |
| Navigation (distance >25NM) | N/A | N/A | N/A | 50% | 100% |
| Forecast interpretation | N/A | N/A | 50% | 75% | 100% |
| Close proximity thermaling | N/A | N/A | N/A | 50% | 100% |
| 10. General Operations | | | | | |
| Flight Log keeping | 50% | 75% | 100% | 100% | 100% |
| Flight rules and procedures | 50% | 75% | 100% | 100% | 100% |
| Site regulations and Safety Officer/ Duty Office system | 50% | 75% | 100% | 100% | 100% |
| Mixed operations | N/A | N/A | 50% | 75% | 100% |
| Airfield operations | N/A | N/A | N/A | 75% | 100% |
| VHF radio operations | N/A | N/A | N/A | 50% | 100% |
| Operations > 5000 ft | N/A | N/A | N/A | 50% | 100% |

Paragliding, Syllabus of Flight Training.

| Skill | PG1 | PG2 | PG3 | PG4 | PG5 |
|---|------|------|------|------|------|
| 1. Aircraft Set-up | 100% | 100% | 100% | 100% | 100% |
| 2. Flight Preparation: | | | | | |
| Pre-flight inspection | 100% | 100% | 100% | 100% | 100% |
| Harness/helmet check | 100% | 100% | 100% | 100% | 100% |
| Attachment/hang check | 100% | 100% | 100% | 100% | 100% |
| 3. Ground Handling: | | | | | |
| Assessment of conditions | 50% | 100% | 100% | 100% | 100% |
| Establishment/attitude | 75% | 100% | 100% | 100% | 100% |
| Pre take off check | 75% | 100% | 100% | 100% | 100% |
| 4. Launch Phase | | | | | |
| Smooth acceleration | 75% | 100% | 100% | 100% | 100% |
| Control of pitch and roll throughout take-off | 75% | 100% | 100% | 100% | 100% |
| Smooth transition to flight | 75% | 100% | 100% | 100% | 100% |
| Nil wind take-off | 50% | 100% | 100% | 100% | 100% |
| Light-moderate wind | 75% | 100% | 100% | 100% | 100% |
| Slight cross wind take-off | 50% | 100% | 100% | 100% | 100% |
| Moderate winds | N/A | 75% | 75% | 100% | 100% |
| Wire assisted take-off | N/A | 75% | 50% | 100% | 100% |
| 5. Level and Straight Flight | | | | | |
| Control of pitch, attitude and airspeed | 75% | 100% | 100% | 100% | 100% |
| Control of roll and yaw | 75% | 100% | 100% | 100% | 100% |
| Maintenance of heading | 75% | 100% | 100% | 100% | 100% |
| Airspeed, accuracy at trim speed, best glide, minimum sink for conditions & situation | 50% | 100% | 100% | 100% | 100% |
| Prone or harness entry | N/A | 100% | 100% | 100% | 100% |
| 6. Approach and Landing | | | | | |
| Final approach, wings level, accuracy of airspeed, glide adjustment and body position | 50% | 100% | 100% | 100% | 100% |
| Final flare with appropriate timing and power for conditions | 50% | 100% | 100% | 100% | 100% |
| Approach planning | 50% | 100% | 100% | 100% | 100% |
| Adaption of approach for changed conditions or emergency | 50% | 100% | 100% | 100% | 100% |
| Height loss manoeuvring | N/A | 50% | 50% | 75% | 100% |
| Small field landing | N/A | N/A | 50% | 75% | 100% |
| Moderate cross wind final approach leg | N/A | N/A | 50% | 100% | 100% |
| Post landing glider control | 75% | 100% | 100% | 100% | 100% |
| Spot landing accuracy (within 10 metres) | N/A | N/A | N/A | 50% | 100% |
| 7. Turning | | | | | |
| Shallow bank/heading maintenance | 75% | 100% | 100% | 100% | 100% |
| Look out & traffic separation Efficient turns for height conservation | N/A | 100% | 100% | 100% | 100% |
| Descending turns & control of slip | N/A | 75% | 75% | 100% | 100% |
| Turns in lifting air 360 degree turns, shallow and steep | N/A | 100% | 100% | 100% | 100% |

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Pilot Flight Training - Flight Training Syllabus

Practical Flight Training



| | | | | | |
|--|-----|------|------|------|------|
| Control close to hill | N/A | 50% | 50% | 100% | 100% |
| 8. Stalling | | | | | |
| Recognition of approach of stall | 50% | 100% | 100% | 100% | 100% |
| The stall | N/A | 100% | 100% | 100% | 100% |
| Recovery from straight & Level stall | | | | | |
| Recovery when wing drops | 50% | 100% | 100% | 100% | 100% |
| 9. Flight Planning: | | | | | |
| Observation & interpretation of Conditions | N/A | 100% | 100% | 100% | 100% |
| Crosswind drift allowances and crabbing flight | N/A | 100% | 100% | 100% | 100% |
| Ridge soaring strategies | N/A | 100% | 100% | 100% | 100% |
| Thermal soaring strategies | N/A | N/A | N/A | 75% | 100% |
| Airspace limitations and restrictions | N/A | 75% | 75% | 100% | 100% |
| Emergency procedures | N/A | 100% | 100% | 100% | 100% |
| X/C planning | N/A | N/A | N/A | 75% | 100% |
| Navigation (distance >25NM) | N/A | N/A | N/A | 50% | 100% |
| Forecast interpretation | N/A | N/A | 50% | 75% | 100% |
| Close proximity thermaling | N/A | N/A | N/A | 50% | 100% |
| 10. General Operations | | | | | |
| Flight Log keeping | 50% | 100% | 100% | 100% | 100% |
| Flight rules and procedures | 50% | 100% | 100% | 100% | 100% |
| Site regulations and Safety Officer/ Duty Officer system | 50% | 100% | 100% | 100% | 100% |
| Mixed operations | N/A | 50% | 50% | 75% | 100% |
| Airfield operations | N/A | 50% | 50% | 75% | 100% |
| VHF radio operations | N/A | N/A | N/A | 50% | 100% |
| Operations > 5000 ft | N/A | N/A | N/A | 50% | 100% |

8.3.2.2 Powered Paragliding Syllabi (Foot/Wheel), Including Cross Country Endorsement.

The following syllabi specify the minimum standards of ability required. The percentage values are used to indicate the minimum degree of ability required for each individual item within a particular subject as follows:

| | |
|---------|---|
| % skill | |
| 50% | Assisted by the instructor to perform the activity correctly. {Examples: wire/keel assisted launch; constant radio direction for soaring; under supervision in two place aircraft} |
| 75% | Ability to perform the activity correctly without assistance, but under carefully supervised conditions. {Examples: High glides without radio instructions; soaring or WM operations without radio but with complete debrief and flight analysis} |
| 100% | Ability to perform the skill sequence correctly and adjusts actions automatically to cope with emergencies or environmental fluctuations, without instructional supervision or assistance. |
| Note: | The percentages indicated define the minimum acceptable standards, for issue of the relevant Pilot Certificate or endorsement, to be achieved prior to undergoing a flight test. |

| | | |
|--|-------------|--------------------|
| Syllabus of Flight Training – Powered Paragliding (Foot or Wheel launched) | | |
| Skill | Certificate | PPG XC Endorsement |
| 1. Aircraft Set-up | 100% | 100% |
| 2. Flight Preparation: | | |
| Pre-flight inspection | 100% | 100% |

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Pilot Flight Training - Flight Training Syllabus

Practical Flight Training



| | | |
|--|------|------|
| Harness/helmet check | 100% | 100% |
| Attachment check | 100% | 100% |
| Separation requirements - from members of the public | 100% | 100% |
| Starting and warm-up, use of power | 100% | 100% |
| Aircraft weight management - understand, the effect of wing loading on aircraft performance and handling; and the need to keep aircraft weight to permitted limits | 100% | 100% |
| 3. Ground Handling: | | |
| Assessment of conditions | 100% | 100% |
| Establishment/attitude | 100% | 100% |
| Pre take off check | 100% | 100% |
| 4. Launch Phase | | |
| Smooth acceleration | 100% | 100% |
| Control of pitch and roll throughout take-off | 100% | 100% |
| Smooth transition to flight | 100% | 100% |
| Nil wind take-off | 75% | 100% |
| Light-moderate wind | 100% | 100% |
| Slight cross wind take-off | 100% | 100% |
| Moderate winds | 75% | 100% |
| 5. Level and Straight Flight | | |
| Control of pitch, attitude and airspeed | 100% | 100% |
| Control of roll and yaw | 100% | 100% |
| Maintenance of heading | 100% | 100% |
| Airspeed, accuracy at trim speed, best glide, minimum sink for conditions & situation | 100% | 100% |
| 6. Approach and Landing | | |
| Final approach, wing level, accuracy of airspeed, glide adjustment and body position | 100% | 100% |
| Final flare with appropriate timing and power for conditions | 100% | 100% |
| Approach planning | 100% | 100% |
| Adaption of approach for changed conditions or emergency | 100% | 100% |
| Height loss manoeuvring | 75% | 100% |
| Small field landing | 75% | 100% |
| Moderate cross wind final approach leg | 75% | 100% |
| Post landing glider control | 100% | 100% |
| Spot landing accuracy (within 10 metres) (Foot launched) | 50% | 100% |
| 7. Turning | | |
| Shallow bank/heading maintenance | 100% | 100% |
| Look out & traffic separation Efficient turns for height conservation | 100% | 100% |
| Descending turns | 75% | 100% |
| Turns in lifting air 360 degree turns, shallow and steep | 75% | 100% |
| 8. Stalling | | |
| Recognition of approach of stall | 100% | 100% |

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Pilot Flight Training - Flight Training Syllabus

Practical Flight Training



| | | |
|--|------|------|
| The stall | 100% | 100% |
| Recovery from straight & Level stall | | |
| Recovery when wing drops | 100% | 100% |
| 9. Flight Planning: | | |
| Observation & interpretation of Conditions | 100% | 100% |
| Crosswind drift allowances and crabbing flight | 100% | 100% |
| Turbulence considerations - wake avoidance | 100% | 100% |
| Airspace limitations and restrictions | 75% | 100% |
| Emergency procedures | 100% | 100% |
| 10. Cross Country Flight Planning | | |
| Interpretation and use of weather charts and forecasts | 75% | 100% |
| Interpretation and use of aeronautical charts, publications and documents | 75% | 100% |
| Aircraft weight management - understand, the effect of wing loading on aircraft performance; and the need to keep aircraft weight to permitted limits. | 100% | 100% |
| Flight plan, including Fuel management, fuel reserve calculations, and flight note requirements | 75% | 100% |
| 11. Navigation | | |
| Map reading | 75% | 100% |
| Compass use and errors | 75% | 100% |
| 12. General Operations | | |
| Flight Log keeping | 100% | 100% |
| Engine failure during or directly after take-off - partial or complete | 100% | 100% |
| In-flight emergency landing options | 100% | 100% |
| Mixed operations | 75% | 100% |
| Airfield operations | 75% | 100% |
| VHF radio operations | 100% | 100% |

8.3.2.3 Weightshift Microlight Syllabus of Flight Training.

Please refer to the *Memorandum Of Understanding* between the HGFA and RAA.

HGFA Doc: **MoU-01** (See 1.3 - HGFA Operational Documents Register)

CASA File: EF11/155471 "MOU between RA-Aus and HGFA"

In accordance with the CASA directive issued on 22nd July 2011, both the HGFA and RAA are to provide assurance to CASA that the oversight of Weightshift Microlights administered by the HGFA & RA-Aus under CAO95.32 are standardised. This standardisation is to be across those elements of flight training and training in aircraft maintenance.

8.4 Endorsement Syllabus

8.4.1 Aerotow (HG)

Endorsement Syllabus – Aerotow Endorsement for Hang Glider Certificate holders.

| Standards of Competency for the issue of Aerotow Endorsement | |
|---|-------------------|
| Skill | Standard Required |
| 1. Set-up | |
| Understanding and location of the HGFA Towing Manual | Demonstrated |
| Introduction to the Tug Pilot and flight parameters the tow pilot must consider | 100% |
| Introduction to the ground crew and specific roles | 100% |
| Setting tow bridle and attachment points to the glider and harness | 100% |
| Understanding and tying weak links | 100% |
| Set up and use of the dolly | 100% |
| Understanding the pilot end of the tow rope | 100% |
| Carries out all pre-flight and pre-tow checks | 100% |
| 2. Launch Phase | |
| Effect of prop wash on performance | 100% |
| Effect of prop wash on visibility | 100% |
| Use of Signals, to launch and in flight | 100% |
| Dolly roll and behaviour in different wind directions | 100% |
| Foot launched technique | 100% |
| Dolly launch technique | 100% |
| 3. In flight | |
| Flight attitude and smooth glider control | 100% |
| Aerotows in moderate thermal conditions | 100% |
| Aerotows in strong thermal conditions | 100% |
| Use of signals | 100% |
| 4. Emergency | |
| Loss of dolly control | 100% |
| Lock out | 100% |
| Weak link breaks | 100% |
| Release failures, tug, glider, both | 100% |

8.4.2 Ground Tow (HG/PG)

Endorsement Syllabus – Ground Tow Endorsement for Paraglider, Hang Glider Certificate holders and Powered Paraglider Certificate Holders with a Free Flight Endorsement

| Standards of Competency for the issue of Ground Tow Endorsement | |
|---|-------------------|
| Skill | Standard Required |
| 1. Set-up | |
| Understanding and location of the HGFA Towing Manual | Demonstrated |
| Introduction to the tow vehicle or winch and operating parameters the vehicle or winch operator must consider | 100% |
| Introduction to the ground crew and specific roles | 100% |
| Setting tow bridle and attachment points to the glider and harness | 100% |
| Understanding and tying weak links | 100% |
| Set up and use of the dolly | 100% |
| Understanding the pilot end of the tow rope | 100% |
| Carries out all pre-flight and pre-tow checks | 100% |
| UHF Radio – Towing sequence / protocols | 100% |
| 2. Launch Phase | |
| Use of Visual Signals, to launch and in flight | 100% |
| Dolly roll and behaviour in different wind directions | 100% |
| Foot launched technique | 100% |
| Dolly launch technique | 100% |
| 3. In flight | |
| Flight attitude and smooth glider control | 100% |
| Use of signals | 100% |
| 4. Emergency | |
| Loss of dolly control | 100% |
| Lock out | 100% |
| Weak link breaks | 100% |
| Winch or vehicle failure | 100% |
| Release failures | 100% |

8.4.3 Tugmaster Aerotow (WM)

Endorsement Syllabus – Tugmaster Endorsement for Weightshift Microlights pilots

| Standards of Competency for the issue of Tugmaster Endorsement | |
|---|-------------------|
| Skill | Standard Required |
| 1. Set-up | |
| Understanding and location of the HGFA Towing Manual | Demonstrated |
| Introduction to the Glider Pilot and flight parameters the glider pilot must consider | 100% |
| Introduction to the ground crew and specific roles | 100% |
| Setting the bridle and attachment points to the aircraft | 100% |
| Understanding and tying weak links | 100% |
| Understanding the pilot end of the tow rope | 100% |
| Carries out all pre-flight and pre-tow checks | 100% |
| 2. Launch Phase | |
| Effect of prop wash on the glider | 100% |
| Effect of additional drag on aircraft performance | 100% |
| Use of Signals, to launch and in flight | 100% |
| Foot and Dolly launched technique | 100% |
| 3. In flight | |
| Flight attitude and smooth aircraft control | 100% |
| Aerotows in moderate thermal conditions and effect on aircraft performance | 100% |
| Aerotows in strong thermal conditions and effect on aircraft performance | 100% |
| Release & Descent Procedures | 100% |
| Approach, Landing & Go-around procedures | 100% |
| Use of signals | 100% |
| 4. Emergency | |
| Effect of aircraft performance when there is a loss of dolly control | 100% |
| Effect of aircraft performance when there is a Lock out | 100% |
| Weak link breaks and effect on aircraft performance | 100% |
| Release failures, tug, glider, both | 100% |
| Stop on take-off run, (partial or full engine failure procedure) | 100% |

8.4.4 Cross Country (WM/PPG)

Endorsement Syllabus - Cross Country Endorsement for a Weightshift Pilot or Powered Paraglider certificate holder

| Standards of Competency for the issue of Weightshift Microlighting Cross Country Endorsement | | |
|--|--|--|
| Skill | Before Solo Navigation Flight Standard of Competency | Cross Country Endorsement Standard of Competency |
| 1. Flight Planning | | |
| Preparation for flight, pilot, aircraft, equipment and log book requirements | 75% | 100% |
| Interpretation and use of weather charts and forecasts | 50% | 100% |
| Interpretation and use of aeronautical charts, publications and documents | 75% | 100% |
| Basic flight computer usage | 75% | 100% |
| Flight plan, including: cruise level, airspace requirements (avoidance/radio) track, distance, heading, ground speed and time interval calculations fuel management including fuel reserve calculations flight note requirements | 75% | 100% |
| 2. Navigation | | |
| Map reading | 100% | 100% |
| Compass use and errors | 75% | 100% |
| Flight log keeping | 75% | 100% |
| Diversion procedures | 75% | 100% |
| Lost procedures | 75% | 100% |
| Flight rules and procedures | 100% | 100% |

8.4.5 Formation Flying (PPG/WM)

Endorsement Syllabus – Weightshift Formation Endorsement for a Weightshift Pilot or Powered Paraglider certificate holder.

| Standards of Competency for the issue of a Weightshift Formation Endorsement | |
|---|-------------------|
| Skill | Standard Required |
| 1. Set-up | |
| Flight planning, participant briefing and position sequence | 100% |
| Aircraft communication planning | 100% |
| Understanding aircraft performance, mixed aircraft and power setting. | 100% |
| Passenger briefing | 100% |
| 2. Launch and landing Phase | |
| Understanding wake turbulence | 100% |
| Variation between aircraft performance during ground roll, different surfaces and wind conditions | 100% |
| Compensating for roll and pitch performance at low speed and aircraft positioning | 100% |
| Communication during launch and preparation for landing | 100% |
| 3. In flight | |
| Effect of power setting and speed relative to additional aircraft | 100% |
| Effect of weather conditions and turbulence on aircraft movement, including sun glare | 100% |
| Maintaining position and maintenance of the flight plan and variation in-flight to flight plans. | 100% |
| Maintaining the 4 stations of flight | 100% |
| Join-up & Breakaway Manouvers | 100% |
| Change of leader during the flight | 100% |
| Communication during all phases of the flight | 100% |
| 4. Emergency | |
| Action in the advent of a communication failure | 100% |
| Collision avoidance action during all stages of the flight | 100% |

8.4.6 Foot Launch Endorsement (PPG)

Refer to [8.3.2.2](#) “Powered Paragliding Syllabi (Foot/Wheel), Including Cross Country Endorsement”.

8.4.7 Wheel Launch Endorsement (PPG)

Refer to [8.3.2.2](#) “Powered Paragliding Syllabi (Foot/Wheel), Including Cross Country Endorsement”.

8.4.8 Free Flight (PPG)

Endorsement Syllabus – Free Flight endorsement for Powered Paragliding Certificate holders gaining free flight.

| Standards of Competency for the issue of Free Flight Endorsement | |
|---|-------------------|
| Skill | Standard Required |
| 1. Aircraft Set-up | |
| Aircraft Set-up | 100% |
| 2. Ground Handling | |
| Assessment of conditions | 100% |
| Establishment/attitude | 100% |
| Pre take off check | 100% |
| Smooth acceleration and transition to flight | 100% |
| 3. Launch Phase | |
| Smooth acceleration | 100% |
| Control of pitch and roll throughout take-off | 100% |
| Smooth transition to flight | 100% |
| 3. In Flight | |
| Harness entry and exit | 100% |
| Final flare with appropriate timing | 100% |
| Turns in lifting air | 100% |
| Control close to the hill | 100% |
| Ridge soaring strategies – “Ridge on Right has Right of Way”, and proximity to faster aircraft (eg. Hang Gliders) | 100% |
| Thermal soaring strategies | 100% |
| Close proximity thermaling – Joining thermals | 100% |
| 4. Stalling | |
| Recognition of approach of stall | 100% |
| The stall recovery from straight & Level stall | 100% |
| Recovery when wing drops | 100% |

8.4.9 Powered Endorsement (Foot launched - HG/PG)

Endorsement Syllabus – Foot launched Powered Hang Gliding/Paragliding endorsement for Hang Glider/Paraglider certificate holders.

| Standards of Competency for the issue of a Powered Endorsement | |
|---|-------------------|
| Skill | Standard Required |
| 1. Preparation for Flight | |
| Aircraft assembly | 100% |
| Aircraft Log | 100% |
| Pre-flight inspection | 100% |
| Separation requirements - from members of the public | 100% |
| Assessment of Conditions | 100% |
| Starting and warm-up, use of power | 100% |
| Pre take-off checks | 100% |
| Aircraft weight management - understand, the effect of wing loading on aircraft performance and handling; and the need to keep aircraft weight to permitted limits. | 100% |
| 2. Flight Planning | |
| Airspace limitations | 100% |
| Take-off into wind | 100% |
| 3. Flight | |
| Take-off | 100% |
| Lookout and separation from other aircraft | 100% |
| Level & straight flight, climbing, descending, turning, recognizing approach of stall | 100% |
| Turbulence considerations - wake avoidance | 100% |
| Circuit ,approach and landing approach - powered and glide approaches | 100% |
| 4. Navigation: | |
| Map reading | 100% |
| Compass use and errors | 100% |
| 5. Emergency Procedures: | |
| Engine failure during or directly after take-off - partial or complete | 100% |
| In-flight emergency landing options | 100% |
| Confined field landings | 100% |

8.4.10 Oxygen (HG/PG/PPG)

Endorsement Syllabus – Oxygen Endorsement for Advanced Paraglider, Hang Glider, Powered Paraglider Certificate holders.

| Standards of Competency for the issue of an Oxygen Endorsement | |
|--|-------------------|
| Skill | Standard Required |
| 1. Pre Set-up | |
| Understanding the body's oxygen requirements with altitude | 100% |
| Able to describe 2 different oxygen systems | 100% |
| Give detailed description of each component of an oxygen supply system | 100% |
| Know oxygen flow rates required at altitude | 100% |
| Describe health risks and signs of oxygen deprivation at altitude | 100% |
| Describe altimetry, airspace and radio requirements above 10,000' | 100% |
| 2. Set up Phase | |
| Set up and testing system, IAW manufacturers manual | 100% |
| Mounting and securing the oxygen system to the aircraft or pilot | 100% |
| Pre take off testing the mounting system for aircraft control in normal and abnormal flight conditions | 100% |
| 3. Simulated In flight | |
| System activation | 100% |
| System control and flow adjustment | 100% |
| Use of altimeter, radio and oxygen systems | 100% |
| Understanding VMC requirements | 100% |
| Understanding altimeter and radio requirements | 100% |
| 4. Emergency | |
| The body's oxygen requirements in high stress or with high physical exertion | 100% |
| Identifying and required action with the loss of oxygen | 100% |

8.4.11 VHF Radio (HG/PG/PPG/WM)

The following syllabus specifies the minimum standards of ability and understanding required for the issue of a HGFA Radio Operator Endorsement.

The qualifying letters are used to indicate the degree of knowledge and skill required for issue of the endorsement.

- A - Basic understanding of the subject matter.
- B - Thorough understanding of the subject matter, capable without assistance, to provide detailed explanations of requirements and practical application.
- C - Basic practical application.
- D - Thorough application of relevant procedures and knowledge.

| Endorsement Syllabus– VHF Radio | |
|---|----------------------------|
| Subject Area | Radio Operator Endorsement |
| 1. Privileges and Limitations of Endorsement holder: | |
| CAO's, CAR 166 and HGFA Operations Manual | B |
| Required use of Spectrum Management Approved Radios | B |
| Requirements for use of hand held equipment | A,D |
| Requirements for radio /certificate issue | B |
| 2. Communications - General: | |
| Phonetic alphabet and numbers | B |
| Standard phraseology | D |
| HGFA aircraft callsign requirements | B,D |
| Strength and clarity definition | A,D |
| Definitions relating to communications (refer: AIP-GEN or VFG) | A |
| UTC Date & Time system | B,D |
| 3. Documentation: | |
| Aeronautical Information Publication (AIP) | A,D |
| Enroute Supplement Australia (ERSA) | A,D |
| Aeronautical Charts (ERC, VTC, PCA) | A,D |
| NOTAM | A,D |
| 4. Characteristics of VHF Radio: | |
| Line of sight | B |
| Carrier wave | A |
| Modulation | A |
| Use of squelch | D |
| VHF aviation band frequency designation | A,C |
| 5. Practical operation of radio equipment: | |
| Normal operation - on/off, frequency change, squelch, volume | A,D |
| Fault finding - on/off, frequency change, squelch, volume, circuit breaker, power supply, aerial type and location, electrical interference | AD |

8.4.12 Tandem (HG/PG)

Endorsement Syllabus – Tandem Endorsement for Hang Gliders and Paragliders.

| Standards of Competency for the issue of Tandem Endorsement | |
|--|-------------------|
| Skill | Standard Required |
| 1. Set-up | |
| Aircraft design and characteristics for operations | 100% |
| Understanding of aircraft weight and balance and effect of additional weight | 100% |
| Site selection | 100% |
| Weather considerations | 100% |
| Passenger briefing | 100% |
| Ground crew requirements and crowd control awareness | 100% |
| 2. Launch and landing Phase | |
| Effect of additional weight on aircraft speed setting, performance in roll and pitch | 100% |
| Limitations on performance during launch run or roll in varying wind conditions | 100% |
| Passenger briefing and communication during the flight and preparation for landing | 100% |
| 3. In flight | |
| Effect of additional weight on aircraft speed setting for best l/d, stall, | 100% |
| Effect of additional weight on aircraft performance in thermalling, | 100% |
| Passenger communication during all phases of the flight | 100% |
| 4. Emergency | |
| Adverse passenger response or action during all stages of the flight | 100% |
| Preparation and planning for aborted flight at any stage during the flight, landing field selection and passenger briefing | 100% |

8.4.13 Tandem (PPG) (Foot & Wheel Launched)

Endorsement Syllabus – Powered Paragliding Tandem Endorsement.

| Standards of Competency for the issue of a PPG Tandem Endorsement | |
|--|-------------------|
| Skill | Standard Required |
| 1. Set-up | |
| Weather & Location | 100% |
| Understanding and calculation of aircraft weight and balance | 100% |
| Passenger briefing | 100% |
| Crowd control awareness and/or measures | 100% |
| 2. Launch and landing Phase | |
| Effect of additional weight on aircraft speed setting | 100% |
| Variation of performance during ground roll, different surfaces and wind conditions | 100% |
| Changes in roll and pitch performance at low speed | 100% |
| Passenger briefing and communication during launch and preparation for landing | 100% |
| 3. In flight | |
| Effect of additional weight on aircraft speed setting | 100% |
| Effect of additional weight on aircraft characteristics in stall and cruise | 100% |
| Effect of additional weight on fuel flow (consumption) | 100% |
| Passenger communication during all phases of the flight | 100% |
| 4. Emergency | |
| Adverse passenger response or action during all stages of the flight | 100% |
| Preparation and planning for aborted flight at any stage during the flight, landing field selection and passenger briefing | 100% |

8.4.14 Tandem (WM)

| Standards of Competency for the issue of a Weightshift Tandem Endorsement | |
|--|-------------------|
| Skill | Standard Required |
| 1. Set-up | |
| Weather and Location | 100% |
| Understanding and calculation of aircraft weight and balance | 100% |
| Passenger briefing | 100% |
| Crowd control awareness and/or measures | 100% |
| 2. Take-off and landing Phase | |
| Effect of additional weight on aircraft speed setting | 100% |
| Variation of performance during ground roll, different surfaces and wind conditions | 100% |
| Changes in roll and pitch performance at low speed | 100% |
| Passenger briefing and communication during launch and preparation for landing | 100% |
| 3. In flight | |
| Effect of additional weight on aircraft speed setting | 100% |
| Effect of additional weight on aircraft characteristics in stall and cruise | 100% |
| Effect of additional weight on fuel flow (consumption) | 100% |
| Passenger communication during all phases of the flight | 100% |
| 4. Emergency | |
| Adverse passenger response or action during all stages of the flight | 100% |
| Preparation and planning for aborted flight at any stage during the flight, landing field selection and passenger briefing | 100% |

8.4.15 Tandem – (Instructional) - (HG/PG/PPG/WM)

Endorsement Syllabus – Tandem Endorsement (Instructional) for Hang Gliders, Paragliders, Powered Paragliders and Weightshift Microlights.

| Standards of Competency for the issue of Tandem Endorsement (Instructor) | |
|--|-------------------|
| Skill | Standard Required |
| 1. Set-up | |
| Aircraft design and characteristics for operations | 100% |
| Understanding of aircraft weight and balance and effect of additional weight | |
| Site selection | 100% |
| Weather considerations | 100% |
| Student briefing and training plan | 100% |
| Ground crew requirements and crowd control awareness | 100% |
| 2. Launch and landing Phase | |
| Effect of additional weight on aircraft speed setting, performance in roll and pitch | 100% |
| Limitations on performance during launch run or roll in varying wind conditions | 100% |
| Student briefing and communication during the flight and preparation for landing | 100% |
| 3. In flight | |
| Effect of additional weight on aircraft speed setting for best l/d, stall, | 100% |
| Effect of additional weight on aircraft performance in thermalling, | 100% |
| Student communication during all phases of the flight | 100% |
| 4. Emergency | |
| Adverse Student response or action during all stages of the flight | 100% |
| Preparation and planning for aborted flight at any stage during the flight, landing field selection and student briefing | 100% |

8.4.16 Speed Wing (PG)

Endorsement Syllabus – Speed Wing for Paragliders.

| Standards of Competency for the issue of a Speed Wing Endorsement. | Standard Required |
|---|-------------------|
| Explains relationship between roll and dive and increased rate of descent. | 100% |
| Explains functionality and proper use of the trim system. | 100% |
| Demonstrates and explains the use of trimmers in terms of speed, sink rate and collapses | 100% |
| Demonstrates layout and pre-flight of the canopy and harness. | 100% |
| Demonstrates 10 consecutive forward inflations with a visual check of the canopy each time. | 100% |
| Demonstrates 10 clean, smooth reverse inflations/reversals prior to launch. | 100% |
| Demonstrates controlled kiting of a glider overhead for 2 minutes in a steady wind. | 100% |
| Demonstrates 2 successful, controlled, confident inflations/launches, where the wind is not exceeding 8 Km.p.h. | 100% |
| Demonstrates 2 successful, confident, high-wind inflations/launches. | 100% |
| Explains and demonstrates an aborted launch and reasons for doing so. | 100% |
| Demonstrates 5 safe landings within a designated area 15 meters in diameter . | 100% |
| Demonstrates weight shift S-Turns. | 100% |
| Demonstrates flight(s) along a planned path alternating turns of at least 90 degree change in heading. | 100% |
| Demonstrates smooth, coordinated turns 90, and 180 degrees | 100% |
| Demonstrates flight showing Best Glide Speed, which may or may not be the same as the gliders trim speed, without slowing the glider to near stall. | 100% |
| Demonstrates the ability to judge and allow for proper clearance from a ridge, gliders, and other obstacles. | 100% |
| Demonstrates proper surge control of canopy using properly timed brake application. | 100% |
| Explains proper strong wind landing procedures and how to keep from being dragged back. | 100% |