



DECLARED TRAINING ORGANISATION (DTO) TRAINING PROGRAM GYROPLANE AND INSTRUCTORS

NOTES:

DTO Training Programme and Syllabi

141.08.13 A DTO training programme if not already contained in the applicable regulations and technical standards shall include at least the following information-

- (a) the aim of the course;
 - (b) crediting of previous experience and pre-entry requirements, including appropriate procedures for a student that wish to complete his or her training after having started at a different training organisation;
 - (c) a list of all air and FSTD exercises to be taught, including a description of the objective of each exercise;
 - (d) a syllabus summary if applicable;
 - (e) the structure and content of the theoretical knowledge instruction;
 - (f) the structure of the entire course and integration of theoretical knowledge instruction, FSTD and flight training; and
 - (g) student progress checks for theoretical knowledge and flight training, as appropriate.
1. *This training program can be copied and included in the DTO Procedures Manual as Appendices.*

INTRODUCTION TO THE GYROPLANE SYLLABUS

PRACTICAL TRAINING

As per Appendix A & B

An applicant for the issuing of a first type rating in the category gyroplane shall have completed not less than 30 hours flight time as a pilot of a gyroplane, of which at least 15 hours shall be solo flight time, and which flight time shall include:

- (a) one dual cross-country flight of a duration of not less than 90 minutes, flown at normal cruising speed; and
- (b) one solo cross-country flight of a duration of not less than 90 minutes, flown at normal cruising speed.

The cross-country flights, referred to shall consist of at least three legs.

Appendix C is the detailed syllabus of practical knowledge for the gyroplane pilot license and is primarily based on the PPL (A) Exercises and has been amended to include the Gyroplane Pilot License practical & theoretical requirements, mark not applicable where not applicable. It is broad and will assist both Flight Instructor and Student to ensure that all areas of the course are covered.

THEORETICAL TRAINING

Appendix D is the Syllabus of theoretical course comprises dual flight instruction including supervised solo flight time and solo cross-country flight time according to Part 62.

Whilst the theoretical course will normally be expected to follow the profile detailed in Appendix D, instructors may deviate from this profile as required by weather or serviceability constraints or student progress considerations, in which case the circumstances are to be detailed in the training record.

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

EXAMINATIONS

The examination course must cover theoretical training on the subjects as detailed below:

- Principles of Flight
- Airlaw
- Navigation
- Meteorology
- Aircraft Technical & General
- Human Performance
- Gyroplane Aircraft Type Specific
- Briefing and care of passengers
- Restricted Radio Telephony Operator's Certificate as prescribed in AIC 30.9
- English Proficiency

EXAMINATION STUDY GUIDES / TRAINING LITERATURE

- Avex PPL Aircraft General Manual 1
- Avex PPL Principles of Flight Book Manual 2
- Avex PPL Human Performance Manual 3
- Avex PPL Met Manual 4
- Avex PPL Navigation Manual 5
- Avex PPL Flight Performance Manual 6
- Pilot's - Radio Handbook 20th Edition
- Air Law for Private Pilots - Book (Red)
- Rotorcraft Flying Handbook
- *Gyropedia – The Gyrocopter Pilots handbook – The Flying Exercises, Phill Harwood
- *Gyropedia - Flying a new generation gyroplane by Phil Harwood

**APPENDIX A
STRUCTURE, TIME & CONTENT OF THE GYROPLANE SYLLABUS**

| EXERCISE | ITEM DESCRIPTION | TIME | | NAV/X-COUNTRY | |
|-----------------|---|-------------|-------------|---------------|------------|
| | | DUAL | SOLO | DUAL | SOLO |
| Exercise 1 | Familiarisation with the Gyroplane | GROUND ONLY | | | |
| Exercise 1E | Emergency drills | GROUND ONLY | | | |
| Exercise 2 | Preparation for and action after flight, checklists & drills | GROUND ONLY | | | |
| Exercise 3 | Air experience | 0.5 | | | |
| Exercise 4 | Effects of controls | 0.5 | | | |
| Exercise 5 | Taxiing | 0.5 | | | |
| Exercise 5E | Emergencies, Brake, Steering, Taxi, Engine | 0.5 | | | |
| Exercise 6 | Straight and level | 0.5 | 4.0 | | |
| Exercise 7 | Climbing | 0.5 | | | |
| Exercise 8 | Descending | 0.5 | | | |
| Exercise 9 | Turning | 0.5 | | | |
| Exercise 10A | Slow flight, flight behind power curve | 0.5 | | | |
| Exercise 10B | Stalling, Hovering | 0.5 | | | |
| Exercise 11 | Spin avoidance | N/A | N/A | N/A | N/A |
| Exercise 12 | Take-off and climb to downwind position | 1.0 | | | |
| Exercise 13 | Circuit, approach, and landing | 1.0 | 3.5 | | |
| Exercise 12/13E | Emergencies | 1.0 | | | |
| Exercise 14 | First solo | | 0.5 | | |
| Exercise 15 | Advanced turning, Cross Control Training | 1.0 | 3.0 | | |
| Exercise 16 | Forced landing without power | 1.0 | | | |
| Exercise 17A | Low level flying | 1.0 | 1.0 | | |
| Exercise 17B | Precautionary landing | 1.0 | | | |
| Exercise 18A | Navigation | 1.5 | | 1.5 | 1.5 |
| Exercise 18B | Navigation problems at lower levels and in reduced visibility | 0.5 | | | |
| Exercise 18C | Radio navigation | 1.0 | | | |
| Exercise 19 | Basic instrument flight / If POH of Gyroplane allows for IF | | | | |
| TOTALS | | 15 | 11.5 | 1.5 | 1.5 |

APPENDIX B
SUMMARY OF SEQUENCE OF PRACTICAL FLIGHT INSTRUCTION EXERCISES FOR THE GYROPLANE PILOT LICENSES

| EXERCISE | ITEM DESCRIPTION |
|-----------------|---|
| Exercise 1 | Familiarisation with the Gyroplane |
| Exercise 1E | Emergency drills |
| Exercise 2 | Preparation for and action after flight, checklists & drills |
| Exercise 3 | Air experience |
| Exercise 4 | Effects of controls |
| Exercise 5 | Taxiing |
| Exercise 5E | Emergencies, Brake, Steering, Taxi, Engine |
| Exercise 6 | Straight and level |
| Exercise 7 | Climbing |
| Exercise 8 | Descending |
| Exercise 9 | Turning |
| Exercise 10A | Slow flight, flight behind power curve |
| Exercise 10B | Stalling, Hovering |
| Exercise 11 | Spin avoidance |
| Exercise 12 | Take-off and climb to downwind position |
| Exercise 13 | Circuit, approach, and landing |
| Exercise 12/13E | Emergencies |
| Exercise 14 | First solo |
| Exercise 15 | Advanced turning, Cross Control Training |
| Exercise 16 | Forced landing without power |
| Exercise 17A | Low level flying |
| Exercise 17B | Precautionary landing |
| Exercise 18A | Navigation |
| Exercise 18B | Navigation problems at lower levels and in reduced visibility |
| Exercise 18C | Radio navigation |
| Exercise 19 | Basic instrument flight / If POH of Gyroplane allows for IF |

**APPENDIX C
DETAILED SYLLABUS OF PRACTICAL KNOWLEDGE FOR THE GYROPLANE PILOT LICENSE**

| EXERCISE | ITEM DESCRIPTION | CHECKED |
|--------------------|--|---------|
| Exercise 1 | Familiarisation with the Gyroplane | |
| | – characteristics of the gyroplane | |
| | – cockpit layout | |
| | – systems | |
| | – check lists, drills, controls | |
| Exercise 1E | Emergency drills | |
| | – action in the event of fire on the ground and in the air | |
| | – engine cabin and electrical system fire | |
| | – systems failure | |
| | – escape drills, location and use of emergency equipment and exits | |
| Exercise 2 | Preparation for and action after flight, checklists & drills | |
| | – flight authorisation and gyroplane acceptance | |
| | – serviceability documents | |
| | – equipment required, maps, etc. | |
| | – external checks | |
| | – internal checks | |
| | – harness, seat or rudder panel adjustments | |
| | – starting and warm up checks | |
| | – power checks | |
| | – running down system checks and switching off the engine | |
| | – parking, security and picketing (e.g. tie down) | |
| | – completion of authorisation sheet and serviceability documents | |
| Exercise 3 | Air experience | |
| | – Flight exercise | |
| | – introduce student to Gyroplane flight | |
| Exercise 4 | Effects of controls | |
| | – primary effects | |
| | – secondary effects of rudder | |
| | – effects of: | |
| | – airspeed | |
| | – yaw (sideslip) | |
| | – Power/throttle | |
| | – Rudder | |
| | – trimming controls | |
| | – disc loading | |
| | – other controls, as applicable (Horizontal Tail Surfaces, applicable to Type) | |
| | – operation of: | |
| | – cabin heating/ventilation | |
| | – airmanship | |
| Exercise 5 | Taxiing | |
| | – pre-taxi checks | |
| | – starting, control of speed and stopping, including High Speed Taxi (GYR) | |
| | – engine handling | |
| | – control of direction and turning | |
| | – turning in confined spaces | |
| | – parking area procedure and precautions | |
| | – effects of wind and use of flying controls, including Wheel Balancing (GYR) | |
| | – effects of ground surface | |
| | – freedom of rudder movement | |
| | – marshalling signals | |

| EXERCISE | ITEM DESCRIPTION | CHECKED |
|---------------------|---|---------|
| | – instrument checks | |
| | – air traffic control procedures | |
| | – airmanship | |
| | – Rotor Pre-Rotation (GYR) | |
| Exercise 5E | Emergencies, Brake, Steering, Taxi, Engine | |
| | – Brake and steering failure | |
| | – Taxi Emergencies | |
| | – Engine Emergencies | |
| Exercise 6 | Straight and level | |
| | – at normal cruising power, attaining and maintaining straight and level flight | |
| | – flight at critically high airspeeds | |
| | – demonstration of inherent stability, including recovering from PIO (Pilot Induced Oscillations) (GYR) | |
| | – control in pitch, including use of trim | |
| | – at selected airspeeds (use of power) | |
| | – use of instruments for precision | |
| | – airmanship | |
| Exercise 7 | Climbing | |
| | – entry, maintaining the normal and max rate climb, levelling off | |
| | – levelling off at selected altitudes | |
| | – en route climb (cruise climb) | |
| | – recovery to normal climb | |
| | – maximum angle of climb | |
| | – use of instruments for precision | |
| | – airmanship | |
| Exercise 8 | Descending | |
| | – entry, maintaining and levelling off | |
| | – levelling off at selected altitudes | |
| | – glide, powered and cruise descent (including effect of power and airspeed) | |
| | – side slipping (Consideration of gyroplane limitations) | |
| | – use of instruments for precision flight | |
| | – airmanship | |
| Exercise 9 | Turning | |
| | – entry and maintaining medium level turns | |
| | – resuming straight flight | |
| | – faults in the turn – (in correct pitch, bank, balance) | |
| | – climbing turns | |
| | – descending turns | |
| | – slipping turns (or suitable types) | |
| | – turns onto selected headings, use of gyro heading indicator and compass | |
| | – use of instruments for precision | |
| | – airmanship | |
| Exercise 10A | Slow flight, flight behind power curve | |
| NOTE: | The objective is to improve the student's ability to recognise inadvertent flight at critically low speeds and provide practice in maintaining the gyroplane in balance while returning to normal airspeed. | |
| | – safety checks | |
| | – introduction to slow flight | |
| | – controlled flight down to critically slow airspeed | |
| | – application of full power with correct altitude and balance to achieve normal climb speed | |
| | – airmanship | |
| Exercise 10B | Stalling, Hovering | |
| | – airmanship | |
| | – safety checks | |
| | – symptoms | |

| EXERCISE | ITEM DESCRIPTION | CHECKED |
|------------------------|--|------------|
| | – recognition | |
| | – clean stall and recovery without power and with power | |
| | – Vertical Auto Rotation (Hovering) (GYR) | |
| | – Rotor blade Stalling / Blade Flap (GYR) | |
| Exercise 11 | Spin avoidance | n/a |
| Exercise 12 | Take-off and climb to downwind position | |
| | – pre-take-off checks | |
| | – into wind take-off | |
| | – crosswind take-off | |
| | – crosswind | |
| | – drills during and after take-off | |
| | – short take-off and soft field procedure/techniques including performance calculations | |
| | – airmanship | |
| Exercise 13 | Circuit, approach, and landing | |
| | – circuit procedures, downwind, base leg | |
| | – powered approach and landing | |
| | – safeguarding the nosewheel | |
| | – effect of wind on approach and touchdown speeds | |
| | – crosswind | |
| | – approach and landing | |
| | – glide approach and landing | |
| | – short landing and soft field procedures/techniques | |
| | – wheel landing (tail wheel gyroplanes/gyroplanes) | |
| | – missed approach/go around | |
| | – airmanship | |
| Exercise 12/13E | Emergencies | |
| | – abandoned take-off | |
| | – engine failure after take-off | |
| | – engine shutdown and restarting in flight | |
| | – mislanding/go-around | |
| | – missed approach | |
| Exercise 14 | First solo | |
| | – instructor's briefing, observation of flight and de-briefing | |
| NOTE: | During flights immediately following the solo circuit consolidation the following should be revised. | |
| | – procedures for leaving and rejoining the circuit | |
| | – the local area, restrictions, map reading | |
| | – use of radio aids for homing | |
| | – turns using magnetic compass, compass errors | |
| | – airmanship | |
| Exercise 15 | Advanced turning, Cross Control Training | |
| | – steep turns (45°), level and descending | |
| | – stalling in the turn and recovery | |
| | – recoveries from unusual altitudes, including spiral dives | |
| | – airmanship | |
| Exercise 16 | Forced landing without power | |
| | – forced landing procedure | |
| | – choice of landing area, provision for change of plan | |
| | – gliding distance | |
| | – descent plan | |
| | – key positions | |
| | – use of radio | |
| | – base leg | |

| EXERCISE | ITEM DESCRIPTION | CHECKED |
|---------------------|--|---------|
| | – final approach | |
| | – landing | |
| | – Forced landing with Power | |
| | – actions after landing | |
| | – airmanship | |
| Exercise 17A | Low level flying | |
| | – Safety considerations | |
| | – Selection of the appropriate speed and configuration | |
| | – Awareness of the danger factors and their recognition | |
| | – Transition to low level flight | |
| | – Control of speed and height | |
| | – Following ground contours | |
| Exercise 17B | Precautionary landing | |
| | – full procedure away from aerodrome to break-off height | |
| | – occasions necessitating | |
| | – in-flight conditions | |
| | – landing area selection | |
| | – normal aerodrome | |
| | – disused aerodrome | |
| | – ordinary field | |
| | – circuit and approach | |
| | – actions after landing | |
| | airmanship | |
| Exercise 18A | Navigation | |
| | Flight planning | |
| | – weather forecast and actuals | |
| | – map selection and preparation | |
| | – choice of route | |
| | – controlled airspace | |
| | – danger, prohibited and restricted areas | |
| | – safety altitudes | |
| | – calculations | |
| | –magnetic heading(s) and time(s) en route | |
| | –fuel consumption | |
| | –mass and balance | |
| | –mass and performance | |
| | – flight information | |
| | –NOTAMS etc. | |
| | –radio frequencies | |
| | –selection of alternate aerodromes | |
| | – gyroplane documentation | |
| | – notification of the flight | |
| | –pre-flight administrative procedures | |
| | –flight plan form | |
| | Departure | |
| | – departure procedures | |
| | –altimeter settings | |
| | –ATC liaison in controlled/regulated airspace | |
| | –setting heading procedure | |
| | –noting of ETAs | |
| | – maintenance of altitude and heading | |
| | – revisions of ETA and heading | |
| | – log keeping | |

| EXERCISE | ITEM DESCRIPTION | CHECKED |
|---------------------|--|------------|
| | – use of radio | |
| | – use of nav aids | |
| | – minimum weather conditions for continuation of flight | |
| | – in-flight decisions | |
| | – transiting controlled/regulated airspace | |
| | – diversion procedures | |
| | – uncertainty of position procedure | |
| | – lost procedure | |
| | Arrival, aerodrome joining procedure | |
| | – ATC liaison in controlled/regulated airspace | |
| | – altimeter setting | |
| | – entering the traffic pattern | |
| | – circuit procedures | |
| | – parking | |
| | – security of gyroplane | |
| | – refuelling | |
| | – closing of flight plan, if appropriate | |
| | – post-flight administrative procedures | |
| Exercise 18B | Navigation problems at lower levels and in reduced visibility | |
| | – actions prior to descending | |
| | – hazards (e.g. obstacles, and terrain) | |
| | – difficulties of map reading | |
| | – effects of wind and turbulence | |
| | – vertical situational awareness (avoidance of controlled flight into terrain) | |
| | – avoidance of noise sensitive areas | |
| | – joining the circuit | |
| | – bad weather circuit and landing | |
| Exercise 18C | Radio navigation | |
| | – Navigational Instruments | |
| | – Engine Instruments | |
| | – Scanning Instruments | |
| | Use of distance measuring equipment (DME) | |
| | – station selection and identification | |
| | – modes of operation | |
| | – distance, groundspeed, time to run | |
| | – Navigation with GPS | |
| Exercise 19 | Basic instrument flight / If POH of Gyroplane allows for IF | n/a |

APPENDIX D
SYLLABUS OF THEORETICAL KNOWLEDGE FOR THE GYROPLANE PILOT LICENSE
(BRIEFINGS & AIR EXERCISES)

| EXERCISE | ITEM DESCRIPTION |
|----------------------------|---|
| EX 1a | FAMILIRISATION WITH THE DOCUMENTS OF THE GYROPLANE |
| AIM | To become familiar with the documentation required for an aircraft/gyroplane |
| BRIEFING | Registration certificate Authority to Fly Release to Service Certificate relating to Maintenance of an Aircraft Airframe Logbook Engine Logbook Propeller Logbook Pilot Operating Handbook (POH) Manufacturers Maintenance Manual and Service Schedules / Aircraft Maintenance Schedule (AMS) Note: One Logbook is suitable for Airframe, Engine and Propeller |
| AIR EXERCISE | N/A |
| COMPLETION STANDARD | N/A |

| EX 1b | FAMILIARISATION WITH THE GYROPLANE |
|----------------------------|--|
| AIM | To become familiar with the components parts, controls, and systems of the gyro |
| BRIEFING | <p style="text-align: center;">Explanation of the aircraft.</p> Component parts of the gyroplane and function Main flight controls. Engine controls. Turbo control Rotor management <p style="text-align: center;">Explanation of the cockpit layout and systems.</p> Operation of flying controls Operation of engine controls. Flight instruments / engine instruments. Electrical system. Fuel system / Types of fuel permitted. <p style="text-align: center;">Rotor system</p> Operation / gimble Rotor brake / lock Control stick lock Trim system - rotor/ rudder <p style="text-align: center;">Check list and drills</p> Use of check list and drills suitable for aircraft type. Instinctive knowledge of position of controls. |
| AIR EXERCISE | N/A |
| COMPLETION STANDARD | N/A |

| EX 1c | EMERGENCY PROCEDURES |
|-----------------|--|
| AIM | To learn essential emergency procedures |
| BRIEFING | <p style="text-align: center;">Emergency Drills</p> <p style="text-align: center;">Action in the event of a fire on the ground</p> Over priming Fractured fuel lines During re-fuelling Electrical Cabin <p style="text-align: center;">Action in the event of a fire in the air</p> Fractured fuel lines Exhaust manifold Electrical <p style="text-align: center;">Preventative and corrective actions.</p> Proper checklists and scheduled services. Use of fire extinguishers. Proper re-fuel methods. Side slipping technique to keep flames from engine or cabin. |

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| | <p>Engine fire Cockpit/cabin fire Electrical fire System failure drills as applicable to type Escape drills including use of emergency equipment.</p> <p>Failure of equipment or systems. Emergency equipment location and use - in hanger and office Emergency equipment location /storage in aircraft Emergency telephone no's - Police / Ambulance / Dr</p> |
| AIR EXERCISE | N/A |
| COMPLETION STANDARD | N/A |

| EX 2 | PREPARATION FOR AND ACTION AFTER FLIGHT |
|-----------------|--|
| AIM | To learn and prepare both pilot and gyroplane the actions required before flight and how to secure the gyroplane after flight. |
| BRIEFING | <p>Airfield rules / Procedures / Safety Standing orders. Booking in / out. Windsock. Fuel storage Car parking Fire extinguishers Smoking. First aid kit – location</p> <p>Flight authorisation and aircraft acceptance Pre-flight planning / briefing Aircraft documentation. Air traffic control information. Personal equipment. Booking out.</p> <p>Check list and drills. Pre-flight checks. Use of manufacturers check list. Explanation of extra items to check. Pre engine start checks After start checks. Pre take off checks. After take off checks En route checks. Pre circuits join checks. Pre landing checks. Changing radio frequencies. Handing over of control – student / instructor</p> <p>Student comfort. Climbing in / out of gyro. Seating position. Suitable clothing for conditions expected. Control arm/rest position.</p> <p>External checks. Positioning of gyroplane suitable for starting. Fire extinguisher available. Taxi path unobstructed.</p> <p>Starting and warming up. Pre start checks. Cold / hot start. Controls locked. Rotor locked / rotor tied down removed. Clear of obstacles/people.</p> <p>Pre take off checks. Use of manufactures list. Pre rotation. Area clear. Rotor brake Control /stick position + handling Loading rotors Trim</p> <p>Running down and switching off. After landing rotor management. Control stick position forward. Control stick position for wind compensation Spinning down of rotor.</p> |

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| | <p>Application of rotor brake. Blade position when taxiing. Blade flap. Engine cooling down procedures. Switch off sequence.</p> <p>Leaving the gyroplane. Suitable parked. Controls locked/ Rotor tied down Brief external check.</p> <p>Completion of post flight documentation. Booking back. Reporting of defects. Post flight briefing. Entries personal flight log. Entries student progress sheet. Entries airframe logbook.</p> |
| AIR EXERCISE | N/A |
| COMPLETION STANDARD | N/A |

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| EX 3 | FAMILIARISATION/AIR EXPERIENCE |
| AIM | To gain air experience and familiarisation with the airborne environment, the sensation of flying and the view of the ground from the air. |
| BRIEFING | Detailed instruction is not normally undertaken on this flight. It is an opportunity for the instructor to become acquainted with the student and decide upon the most suitable approach for subsequent instruction. |
| AIR EXERCISE | Local area familiarisation Familiarisation with the cockpit layout, ergonomics, controls Demonstrate cockpit procedures. Demonstrate stability and control |
| COMPLETION STANDARD | During the flight the student should have had the opportunity to handle the controls to provide a foundation for the next exercise. If the student has some previous flying experience, then this exercise can be combined with "EFFECTS OF CONTROLS " |

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| EX 4 | EFFECT OF CONTROLS |
| AIM | To learn the effects of the cockpit controls and the functions of the instruments. |
| BRIEFING | Airmanship The importance of maintaining a good lookout. The clock code Handing and taking over control |
| AIR EXERCISE | Method of assessing the aircraft's attitude The horizon. Danger of instrument fixation Trim for hands off flight Tandem configuration. Side by side configuration The actual visual reference point. The different picture for a left /right bank. Trimming stabilizer. Trimming 1 person up / 2 persons up. Primary and secondary effect of each control. Rudder. Control stick. Pitch Roll Throttle. Further effects Cross control PIO – How does it happen and how to prevent it Sideslip. |
| COMPLETION STANDARD | Student to demonstrate an understanding of the effects of the cockpit controls and the functions of the instruments |

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| EX 5 | TAXIING |
| AIM | To learn to manoeuvre the gyroplane on the ground in different wind conditions and on different surfaces. |
| BRIEFING | Airmanship Lookout. Suitable speed. Serviceability checks of instruments / fuel systems / radio Radio calls |
| AIR EXERCISE | Use of controls during taxiing. Sensitivity of front wheel application / speed control. Power / handbrake use. Rotor control during taxiing. |

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|----------------------------|---|
| | <p style="text-align: center;">Rotor blade static. Position of rotor blade Rotor brake on. Control column lock. Application of handbrake</p> <p style="text-align: center;">Rotor blade spinning. Control column position. Compensating for various wind conditions. Rotor speed. Blade flap / advancing – retreating blade. Use of rotor as a brake.</p> |
| COMPLETION STANDARD | Student to demonstrate he/she can manoeuvre the gyroplane on the ground in different wind conditions and on different surfaces. |

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| EX 5b | TAXIING EMERGENCIES |
| AIM | To learn the correct actions in the event of emergencies during taxi |
| BRIEFING | <p style="text-align: center;">Emergencies Fire Brake failure Rudder failure Wheel puncture. Runaway engine. Blade flap.</p> |
| GROUND EXERCISE | <p style="text-align: center;">Brake failure Rudder failure Blade flap</p> |
| COMPLETION STANDARD | Demonstrate the correct actions in the event of an emergency during taxi |

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| EX 5c | ROTOR SPIN UP |
| AIM | To learn how to safely spin the rotor up in preparation for take-off and to recognize blade flap and to correct if encountered. |
| BRIEFING | <p style="text-align: center;">Airmanship Lookout / area clear</p> <p style="text-align: center;">Positioning the gyroplane in readiness for flight. Avoid lose ground under propeller. Consideration for area affected by propeller “blast” Traffic in circuit.</p> |
| GROUND EXERCISE | <p style="text-align: center;">Pre rotation Pre take off checks Rotor brake Control column lock Control column position. Minimum rotor speed before pre rotator disengagement. Trim. Application of power until rotor blades loaded</p> <p style="text-align: center;">Blade flap Causes Prevention Recovery</p> |
| COMPLETION STANDARD | Student to demonstrate to safely spin the rotor up in preparation for take-off and to recognize blade flap and to correct if encountered. |

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| EX 6 | STRAIGHT & LEVEL FLIGHT |
| AIM | To learn to fly the gyroplane in a constant direction, at a constant level/altitude and in balance, at selected power settings |
| BRIEFING | <p style="text-align: center;">Airmanship Lookout FREDA</p> |
| AIR EXERCISE | <p style="text-align: center;">Use of Instruments to achieve Precision Flight</p> <p style="text-align: center;">Straight flight Visual reference point. Regaining and maintaining visual reference point. Assessing and allowing for drift.</p> <p style="text-align: center;">Level flight at normal cruising speed. Powered required dependant on load carried. Use of altimeter to check level Use of in flight trim control</p> <p style="text-align: center;">Level flight at different airspeeds. Power provides height.</p> |

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|----------------------------|---|
| | <p>Angle of attack (stick position) provides speed. Power and angle of attack combine to give performance. Power first then attitude then trim. Minimum level flight speed Maximum level flight speed.</p> <p>PIO , Power push over and porpoise. How to recognize it. How to recover from it.(PIO , Porpoise) How to prevent it.</p> |
| COMPLETION STANDARD | Achieve and maintain straight & level flight, in balance, within Height - ± 150 ft, Heading - $\pm 10^\circ$, Speed - ± 15 kts |

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| EX 7 | CLIMBING |
| AIM | To learn to enter and maintain a steady full-power (100 % or 115 %) climb and then return to level flight at a predetermined altitude to level off at selected altitudes/heights. |
| BRIEFING | <p>Airmanship Lookout. Altimeter setting procedure. Awareness of any blind spots. Monitoring engine / fuel pressures and temperatures.</p> |
| AIR EXERCISE | <p>Entry to climb. Power first then attitude (PAHT – power / attitude / hold / trim) Combining power and attitude for performance. Establishing and holding correct speed for climb. Effect of slipstream /rudder offset – climbing power (Rotax / Subaru engines)</p> <p>Actions during climb. Continuous scanning of instruments and lookout. Monitoring of engine temperatures.</p> <p>Levelling off from a climb Attitude first (Nose down) hold, then reduce power. Maintenance of selected altitude. Maximum angle of climb. Maximum rate of climb. Cruise climb.</p> |
| COMPLETION STANDARD | Enter a climb maintaining direction within $\pm 10^\circ$. Maintain a steady climb whilst maintaining heading within $\pm 10^\circ$ and speed within ± 15 kts. Level from a climb within 150ft of a selected altitude/height maintaining heading within $\pm 10^\circ$. Display basic airmanship |

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| EX 8 | DESCENDING |
| AIM | To learn to enter and maintain a descent in a constant direction and to level off at selected altitudes/heights |
| BRIEFING | <p>Airmanship Lookout. Selection of clear airspace. Altimeter settings. Regular application of power to ensure engine warm.</p> |
| AIR EXERCISE | <p>Glide descent. Control of airspeed. Speed for maximum glide range. Rate of descent. Entry to the descent –power then attitude. Actions during the glide. Aware of blind area below Effect of slipstream/offset rudder with power changes (Rotax / Subaru engines)</p> <p>Levelling off from a descent. Power and attitude together- increase power and raise nose simultaneously. Initiate the levelling off procedures early to prevent undershooting the desired altitude.</p> <p>Powered descent. Relation between power and airspeed. Control of rate of descent. Effect of power on rate of descent.</p> |
| COMPLETION STANDARD | Enter a descent maintaining direction within $\pm 10^\circ$. Maintain a constant rate of descent whilst maintaining heading within $\pm 10^\circ$ and speed within ± 15 kts. Level from a descent within 150ft of a selected altitude/height maintaining heading within $\pm 10^\circ$. Display basic airmanship |

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| EX 9 | TURNING |
| AIM | To enter and maintain a medium turn whilst maintaining level flight and to return to straight and level flight on a new heading. |
| BRIEFING | <p>Airmanship Instinctive LOOKOUT before turns. Allowing for wind and maintaining knowledge of position.</p> |
| AIR EXERCISE | <p>Entry and maintaining Medium Level Turns Resuming straight flight Faults in the Turn (incorrect Pitch, Bank, Balance)</p> |

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| | <p>Climbing Turns Descending Turns Slipping Turns (on suitable types) Turns to Selected Headings, use of Gyro Heading Indicator and Compass Use of Instruments to achieve Precision flight</p> <p>Going in Use of correct controls. Co-ordination and interaction of Pitch, Roll and yaw during banking roll.</p> <p>Maintaining the turn. Maintaining balance throughout the turn. Back pressure to maintain correct pitch attitude. Use of power to maintain speed. Slipstream and torque effect relative to direction of turn.</p> <p>Recover from turn. Use of visual reference points to ensure accurate roll out on to new heading. Allowing for wind (drift)</p> |
| COMPLETION STANDARD | Enter a turn at 30°AOB maintaining level flight within ±150ft and maintaining balance. Maintain a constant angle of bank whilst maintaining level flight within ±150ft and speed within ±15kts, in balance. Recover to straight and level flight on a selected heading (4 main wind directions) whilst maintaining level flight within ±150ft, in balance. Display basic airmanship |

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| EX 10a | SLOW FLIGHT / BEHIND THE POWER CURVE |
| AIM | To understand Flight Behind Power Curve. How to recognize it and how to recover with minimal altitude loss. |
| BRIEFING | <p>Airmanship Lookout Engine management</p> <p>Airmanship Safety Checks</p> <p>Introduction to Slow Flight Safety precautions Power Graft Dangers of flying behind power curve Hover taxi</p> <p>Controlled Slow Flight in the Clean Configuration at: Vs1 + 10 knots Vso + 10 knots: Straight & Level Flight Level Turns Climbing & Descending Climbing & Descending Turns</p> <p>Controlled Slow Flight in the Clean Configuration at: Vs1 + 5 knots Vso + 5 knots: Straight & Level Flight Level Turns Climbing & Descending Climbing & Descending Turns Descending 'Unbalanced' Turns at Low Airspeed – the need to maintain Balanced Flight Application of full power with correct attitude and balance to achieve normal climb speed</p> |
| AIR EXERCISE | |
| COMPLETION STANDARD | Demonstrate the ability to manoeuvre the aircraft safely at slow speed. Display basic airmanship |

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| EX 10b | CONTROLLED VERTICAL DECENT - "HOVERING" |
| AIM | To recognise an approaching UNINTENSIONAL behind the power curve flight and how to recover with minimal altitude loss. To safely put the gyro in a INTENTIONAL Power or Glide hover. To understand Flight Behind the Power Curve. |
| BRIEFING | <p>Airmanship Lookout HASELLL Engine management.</p> <p>Power Hover Safety precautions. Visual reference points.</p> <p>Enter into an INTENTIONAL power or glide hover (engine on idle) and to safely recover from these unusual attitudes. Sideways flying in power hover. (Use of cross controls) Recovering methods.</p> <p>Power off / glide hover (Vertical descent) Safety precautions. Visual reference points. Entry into the hover. Asymmetric blade effect on gyro during hover. (2 methods of recovering) Recovering methods out of vertical decent.</p> |
| AIR EXERCISE | |
| COMPLETION STANDARD | To recognise the UNINTENTIONAL flight behind the power curve and to take the correct actions to avoid its developing. To safely put the gyro in an INTENTIONAL Power or Glide hover - maintain directional control and safely recover out of these unusual attitudes. Display basic airmanship. |

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| EX 11 | SPIN AVOIDANCE |
| AIM | N/A |
| BRIEFING | N/A |
| AIR EXERCISE | N/A |
| COMPLETION STANDARD | N/A |

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| EX 12 | TAKE-OFF & CLIMB TO DOWNWIND POSITION |
| AIM | To learn to take-off, enter the climb and position the aircraft on the downwind leg of the circuit. |
| BRIEFING | <p>Pre-take off checks. Planning for power failure on every take off. Planning take-off with regard to wake turbulence from other aircraft. Drills during and after take-off i.e. constant planning for an aborted take-off, Forced landing due to power failure on take-off or in the circuit and Monitoring engine temperatures during the climb. Considerations for rotor run up with regard to fitting in with other circuit. traffic on busy airfields. After take-off checks.</p> |
| AIR EXERCISE | <p>Factors effecting length of take-off roll and the initial climb.</p> <p>Pre-rotation and rotor rpm. Use of power. Use of flight controls. Wind - nil wind, head wind, cross wind. Ground surface: concrete, grass, soil, tar. Ground gradient. Weight – altitude – temperature – humidity. Maximum angle of climb. Maximum rate of climb.</p> <p>Blade loading or pre-rotation. Correct pre-rotation technique. Correct trimming technique. Blade flap prevention. Blade flap recovery. Application of power to safely load the rotor blades.</p> <p>Rough field take off / short field take off / soft field take off Premature lift off and subsequent control Short field, soft field take off.</p> |
| COMPLETION STANDARD | Demonstrate the ability to follow the correct circuit pattern. Display basic airmanship |

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| EX 13 | THE CIRCUIT, APPROACH AND LANDING |
| AIM | To learn to take-off and land facing into wind, crosswind and downwind. |
| BRIEFING | <p>Airmanship Importance of constant lookout during circuit and prior to turning to leg. Downwind checks. Planning approach and landing with regard to wake turbulence from aircraft landing ahead.</p> <p>The downwind leg, base leg, final approach positioning and drills / radio calls.</p> |
| AIR EXERCISE | <p>Types of approaches & landings Powered /Engine assisted approach and landing. Glide approach and landing. Crosswind approach and landing. Short field approach and landing. Soft field approach and landing. Landing behind the power curve. Emergency landings.</p> <p>Missed approach and go-around / Missed landing and go-around. Correct positioning. Correct propeller setting. Forces acting on gyro during power application. Correct use of controls. Effect of slipstream /rudder offset with power changes.</p> <p>Factors affecting the final approach & landing Nil wind, head wind, cross wind. Correct approach speeds. Weight. Use of power to control rate of descent and airspeed with pitch control. Effect of ground surface and gradient on the landing run.</p> <p>The hold off period and touch down. Ability to control direction. Ability to control and correct ballooning. Ability to cope with crosswind. Rotor management after landing.</p> |

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| | <p>Ground manoeuvring after landing.</p> <p>Use of rotor for braking / stopping the gyro after touching down</p> <p>The complete take-off, circuit and landing. Circuit joining and leaving procedures.</p> |
| COMPLETION STANDARD | Demonstrate the ability to follow the correct circuit pattern, to maintain the correct approach path and safely land the aircraft in various configurations. Display basic airmanship |

| EX 12/13E | EMERGENCIES TAKE-OFF, CLIMB, CIRCUIT, APPROACH AND LANDINGS |
|----------------------------|---|
| AIM | <p>To learn to take the correct actions in the event of an emergency occurring in the circuit area, to learn how to land safely in the event of an engine failure during and after the take-off or at any time in the circuit. To abort a take-off for some reason.</p> <p>To be able to handle both cross winds take off and landings including downwind landings in emergencies. 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 gyro.</p> |
| BRIEFING | <p>Cross Wind Monitoring of local weather Windsock observation and evaluation of wind strength and direction Taxi with rotor spinning. Wind shear</p> |
| AIR EXERCISE | <p>Emergencies Aborted take-off. Engine failure during take-off. Engine failure after take-off. Engine failure in the circuit. Low speed blade flap. High speed blade flap. Dangers of accelerating too quickly with lower than minimum rotor rpm. Take off on the back side of the power / drag curve with insufficient rotor rpm.</p> <p>Side slipping (ONLY IN EMERGENCY LANDING SITUATION) To get rid of excess height during emergency landing to not overshoot your landing spot. See POH on type of gyro / limitations.</p> <p>Take-off and landing out of wind (Cross wind)</p> <p>Take off. Correct pr-rotation method. Cyclic position during take-off roll / cross wind. Use of rudder to counteract cross wind during take-off.</p> <p>Aerodynamics and mechanical consideration. Torque effect. Gyroscopic effect. Weather cocking effect. Asymmetric blade effect Effect of wind on undercarriage.</p> <p>The circuit. Cross wind leg. Downwind leg – compensate for drift. Assess amount of cross wind and plan landing. Base leg will either have a tail wind or head wind component therefore power reduction to be judged accordingly.</p> <p>Approach and landing. Wind effect during the turn onto final. Two methods off approaching. (wing down / crabbing) Weathercock tendency on landing run. Use of cross wind control (cross controls) during round out and hold off. Blade management after touch down. Use of the rotor as a brake. Blade management during taxi. X wind strength / Restrictions - rudder offset.</p> |
| COMPLETION STANDARD | Demonstrate the ability to carry out the correct actions in the event of an emergency occurring during take-off, climb, circuit, straight & level, approach and landing. |

| EX 14 | FIRST SOLO |
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| AIM | To fly the normal circuit pattern and carry out a normal approach and landing |
| BRIEFING | <p>Airmanship Constant lookout. Faultless checks. Ability to deal with all emergency drills.</p> <p>First solo briefing. Pilot should not hesitate to overshoot if in any doubt. Difference in handling of dual gyroplane when flown solo. The use of ballast for dual gyroplane if necessary. Use of trimming for side-by-side gyroplanes and or use of ballast. Quicker nose up position when flying solo.</p> |

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| AIR EXERCISE | Normal circuit, approach and landing |
| COMPLETION STANDARD | N/A |

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| EX 15 | ADVANCED TURNING |
| AIM | To carry out a coordinated level and descending turns at steep angles of bank and to recognize and recover from a spiral dive. |
| BRIEFING | Airmanship Lookout. Importance of maintaining orientation. |
| AIR EXERCISE | Steep level turns at 45 degrees and up to maximum 60 degrees bank angles. Lookout. Entry into bank angle. Maintaining bank angle and altitude / use of controls Recovery by use of roll / pitch and power control. Steep descending turns at 45 degrees and up to maximum 60 degrees bank angles. Lookout. Entry into bank angle. Maintaining bank angle and use of controls. Recovery by using roll / pitch and power. |
| COMPLETION STANDARD | Enter a turn at 45°AOB maintaining level flight within ±150ft and maintaining balance. Maintain a constant angle of bank whilst maintaining level flight within ±150ft and speed within ±15kts, in balance. Carry out checks and drills in accordance with the aircraft checklist. Make RT calls in accordance with APPENDIX 1.5. Display basic airmanship |

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| EX 15a | CROSS CONTROL TRAINING |
| AIM | The student should be shown and become confident in using x controls and the effect of cross controls and the relationship between heading and ground path. |
| BRIEFING | Airmanship Lookout Correct use of controls. Aircraft limitations. Wind consideration. Sun direction / position in relation to gyro heading |
| AIR EXERCISE | Principals involved Aerodynamics. Aircraft handling techniques. Aircraft limitations. (Rudder offset) Types of x controls Cross wind landings Power hover How exercise applies to gyro flying Cross wind landings. Engine fire to divert flames. |
| COMPLETION STANDARD | Demonstrate the ability to carry out cross control |

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| EX 16 | FORCED LANDING WITHOUT POWER |
| AIM | To learn to make a safe approach and landing after a partial or complete engine failure. |
| BRIEFING | Airmanship Use of correct drill. Lookout. |
| AIR EXERCISE | Forced landing procedure. Choice of landing area, Wind direction Provision for change of plan Descent plan & landing Gliding distance considerations Key positions Passenger briefing. Engine cooling Engine failure checks Use of radio, mayday, mayday Base leg Final approach Overshoot / undershoot. Control speed / glide angle. Hover. Sideslip. Landing All switches off. Actions after landing Aircraft security. Passenger assistance. |
| COMPLETION STANDARD | Demonstrate the ability to make an approach to a suitable landing area with a realistic chance of landing safely in the selected area and recover to the climb. Carry out checks and drills in accordance with the aircraft checklist. Make RT calls. |

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| | Display appropriate airmanship |
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| EX 17a | LOW LEVEL FLYING |
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| AIM | To safely operate the aircraft at heights lower than normal. |
| BRIEFING | <p style="text-align: center;">Airmanship</p> Assessment of weather conditions / turbulence. Assessment of height above terrain. Assessment of terrain features. Compliance with low flying rules. High level of awareness. |
| AIR EXERCISE | <p style="text-align: center;">Low level familiarization.</p> Action prior to descending. Visual impressions and height / speed control at low altitudes. Effects of wind, speed and inertia during turns. Effects of wind and turbulence. Powerline observation and crossing Dangers - obstacles / support lines towers / towers / lightning towers |
| COMPLETION STANDARD | To demonstrate the safe operation of the gyroplane at heights lower than normal |

| EX 17b | PRECAUTIONARY LANDING |
|----------------------------|--|
| AIM | To learn to land the aircraft safely other than at the planned airfield. |
| BRIEFING | <p>A precautionary landing is not contemplated before the flight commenced, but where engine power may be available thus providing the pilot with the opportunity of selecting and inspecting a suitable landing area before executing a landing in / on an unfamiliar field.</p> <p style="text-align: center;">Airmanship</p> Use of correct drills / checklist. Correct speed control Low level checks. Lookout. Wind direction identification. Actions after landing |
| AIR EXERCISE | <p style="text-align: center;">Reasons for precautionary landing.</p> Shortage of fuel. Uncertain of position. Bad weather. Failing light. Mechanical problems. On board emergencies. |
| COMPLETION STANDARD | Carry out checks and drills in accordance with the aircraft checklist, make RT calls, demonstrate precautionary landing. |

| EX 18 | NAVIGATION |
|---------------------|---|
| AIM | To learn to plan a cross-country flight and to navigate by visual reference. To fly accurately and safely in VMC and VFR conditions a predetermined route without infringing the rules governing regulated airspace. |
| BRIEFING | <p style="text-align: center;">Airmanship</p> Pre-flight planning. Planned cockpit management. Adequate fuel for trip. Weather evaluation. Correct clothing. |
| AIR EXERCISE | <p style="text-align: center;">Flight planning</p> Weather forecast and actual - map selection and preparation - choice of route - controlled airspace - danger, prohibited and restricted areas - safety altitudes. |

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| | <p>Magnetic heading(s) and time(s) en-route - fuel consumption - mass and balance - mass and performance</p> <p>Flight information NOTAMS etc. - radio frequencies - selection of alternate aerodromes - gyroplane documentation</p> <p>Notification of the flight pre-flight administrative procedures - flight plan form</p> <p>Departure & En-route Organisation of cockpit workload - altimeter settings - ATC liaison in controlled/regulated airspace - setting heading procedure - noting of ETAs/Zulu time - maintenance of altitude and heading - revisions of ETA and heading - log keeping - use of radio - use of nav aids, GPS - minimum weather conditions for continuation of flight - in-flight decisions - transiting controlled/regulated airspace - diversion procedures - uncertainty of position procedure - lost procedure</p> <p>Arrival, aerodrome joining procedure ATC liaison in controlled/regulated airspace - altimeter setting QNH to airfield QFE - entering the traffic pattern - circuit procedures - parking - security of aeroplane - refuelling - closing of flight plan, if appropriate - post-flight administrative procedures</p> <p>Parking procedures & securing of Gyro</p> |
| COMPLETION STANDARD | <p>Correctly employ pre-flight planning facilities and techniques</p> <p>Employ correct VFR navigational techniques while maintaining heading $\pm 10^\circ$, height/altitude ± 150ft and speed ± 15kts</p> <p>Carry out checks and drills in accordance with the aircraft checklist</p> <p>Make RT calls in accordance with APPENDIX 1.5; Display appropriate airmanship</p> |

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| EX 18b | NAVIGATION PROBLEMS AT LOWER LEVELS & IN REDUCED VISIBILITY |
| AIM | N/A |
| BRIEFING | N/A |
| AIR EXERCISE | N/A |
| COMPLETION STANDARD | N/A |

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| EX 18c | RADIO NAVIGATION |
| AIM | To learn how to use radio aids to navigation |
| BRIEFING | N/A |
| AIR EXERCISE | <p>Navigation procedures as necessary</p> <p>Use of GNSS VOR ADF/NDB* VHF/DF</p> <p>En-route or terminal radar Secondary Surveillance Radar DME*</p> |
| COMPLETION STANDARD | <p>Employ correct VFR navigational techniques while maintaining heading $\pm 10^\circ$, height/altitude ± 150ft and speed ± 15kts</p> <p>Carry out checks and drills in accordance with the aircraft checklist</p> <p>Make RT calls in accordance with Appendix 1.5</p> <p>Display appropriate airmanship</p> |

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| EX 19 | INSTRUMENT FLYING - VFR PURPOSES ONLY |
| AIM | To develop the habit of constantly checking both navigational (GPS and Compass) and engine instruments in flight whilst keeping a good look out for other aircraft. Student should be encouraged to familiarize himself/herself with instrument layout on panel from day one of his/her training. |
| BRIEFING | <p>Airmanship</p> <p>Constant lookout Scanning instruments. Non instrument fixation Ability to deal with problems Location of instruments on panel</p> |
| AIR EXERCISE | <p>Instrument - FLYING - VFR only</p> <p>Reading / scanning. Interpretation. Problem solving.</p> <p>Instrument - ENGINE.</p> <p>Reading. Interpretation. Problem solving.</p> <p>GPS.</p> <p>Its uses. Its faults Backup with map.</p> |
| COMPLETION STANDARD | Demonstrate that the student can use and understand the instrument layout on the panel and that he/she is indeed constantly checking both navigational and engine instruments during the different phases of flight. |

**APPENDIX E
EXAMINATION SUBJECTS FOR THE GYROPLANE PILOT LICENSE**

| PRINCIPLE OF FLIGHT | | |
|---|--|--|
| Physics and Mechanics | | |
| The forces on an aircraft in flight. | | |
| Aerofoils. | | |
| Propeller theory | | |
| Flying controls. | | |
| Rotor system lifting and operation principles. | | |
| Rotor stall principles. | | |
| Characteristics at the stall including factors affecting blade stall conditions and gyroplane behaviour at blade stall. | | |
| Avoidance of blade stall | | |
| Equilibrium. | | |
| Mass and Balance. | | |
| Stability. | | |
| Climbing and descending. | | |
| Turning. | | |
| Manoeuvres, including high- and low speed flight. | | |
| Aircraft Performance. | | |
| AVIATION LEGISLATION – SOUTH AFRICAN REGULATIONS | | |
| Civil Aviation Regulations (CAR) and its applicable Technical Standards (CATS) | | |
| PART 1 - Definitions and Abbreviations | | |
| Definitions | | |
| Abbreviations | | |
| PART 12 - Aviation Accidents and Incidents | | |
| 12.02.1 - Notification of accidents | | |
| 12.02.2 - Notification of incidents | | |
| 12.02.3 - Notification of accidents and incidents outside the Republic | | |
| 12.02.4 - Particulars of notification | | |
| 12.04.1 - Guarding of aircraft involved in accident | | |
| 12.04.4 - Interference with objects and marks at scene of accident | | |
| PART 24: Airworthiness Standards: Non-type Certificated Aircraft | | |
| Subpart 1 - General | | |
| Subpart 2 - Authority to Fly, Proving Flight Authority and Special Flight Permit | | |
| Subpart 3 – Approval of Organisation | | |
| PART 44: Maintenance Rules – Non-Type Certificated Aircraft | | |
| Subpart 1 - General | | |
| Subpart 2 – Private non-type certificated Aircraft use | | |
| Subpart 3 – Commercial non-type certificated Aircraft use | | |
| PART 62: National Pilot Licensing | | |
| Subpart 1 - General | | |
| Subpart 2 – National Pilot Learners Certificate | | |
| Subpart 3 – National Pilot License | | |
| Subpart 6 - Requirements for the Issue of a Category, Class or Type Rating for Gyroplanes | | |
| PART 67: Medical Certification | | |
| PART 94: Operation of Non-type Certificated Aircraft | | |
| Subpart 1 - General | | |
| Subpart 2 - Flight Crew | | |
| Subpart 3 - Documentation and Records | | |
| Subpart 4 - Communication and Navigation Equipment | | |
| Subpart 5 - Rules of The Air | | |
| Subpart 6 - Flight Operations | | |
| Subpart 7 - Maintenance | | |
| PART 185: Enforcement | | |
| Subpart 1 - General | | |
| Subpart 2 - Enforcement Process | | |
| Subpart 3 - Penalties | | |
| Subpart 4 - Suspension, Cancellation, Downgrade, Endorsements and Appeal | | |
| CAA Website – WWW.CAA.CO.ZA - Where to find what including: | | |
| - FORMS / NOTICES | | |
| - AIC | | |
| - AIP | | |
| - NOTAMS | | |
| NAVIGATION | | |
| Form of the earth. | | |
| Magnetic variation. | | |
| Compass deviation. | | |
| Principles of navigation. | | |
| Maps and charts. | | |
| Map reference information. | | |
| Map reading. | | |
| Methods of map reading. | | |
| Flight preparation. | | |
| Flight planning. | | |
| Weather forecasts and reports. | | |
| Practical navigation. | | |
| Global Positioning Systems | | |

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| (i) Form of the earth, including principles for direction and distance measuring. |
| (ii) Aeronautical maps and charts, including projections and their unique properties and the interpretation of all features. |
| (iii) All principles of navigation, including all aspects of track plotting, heading measurement, wind effect, map reading, keeping a track plot, position fixes, situational awareness. |
| (iv) All principles of flight planning, including selection of proper maps and charts, weather and other information services, safety heights, fuel and alternate landing considerations, filing a flight plan and keeping a nav log. |
| (v) Principles, and use of Global Positioning System as an aid to confirm position on map and not as main VMC navigation |
| METEOROLOGY |
| The atmosphere. |
| Air pressure / temperature / density. |
| Pressure systems and wind. |
| Humidity and precipitation. |
| Cloud formation. |
| Thunderstorms. |
| Visibility. |
| Air masses. |
| Frontal systems. |
| Micro-meteorology. |
| Climatology. |
| Altimetry. |
| Effects of density altitude on aircraft performance. |
| Flight over mountainous areas. |
| Ice accretion on aircraft. |
| The World Meteorology Organization. |
| Weather forecasting. |
| Weather information for flight planning /METAR / TAF. |
| Meteorological broadcasts for aviation / ATIS / SIGMET |
| AIRCRAFT TECHNICAL & GENERAL KNOWLEDGE |
| Airframe structure - All aspects of the airframe design principles, airframe systems and their ancillaries, including handling and care. |
| Airframe loads |
| Powerplant - All aspects of the powerplant and ancillary systems, all aspects of flight and engine instruments |
| Propellers |
| Rotor blades - All aspects of rotating wing (rotor) design principles, handling, care and inspection. |
| Systems |
| Instruments - All aspects of installed and / or mobile radio aids and radio navigation systems. |
| Airworthiness and Emergency Procedures, Description and use of fire extinguisher, first aid kit and other safety equipment |
| HUMAN PERFORMANCE |
| All aviation physiological medical aspects related to the microlight pilot. |
| Toxic hazards, including tobacco smoking, alcohol and drugs. |
| Stress and management of stress. |
| All aviation psychology aspects related to flight operations, including personality styles, compulsive behavior. |
| Human performance and limitations. |
| Judgement and decision making. |
| Risk assessment. |
| Development of situational awareness |
| GYROPLANE TECHNICAL KNOWLEDGE* |
| Introduction & Scope |
| Lift, Weight, Thrust and Drag |
| The Terminology associated with a rotor |
| Autorotation |
| Autorotation in Forward flight |
| Further effects of forward airflow |
| Reducing stress on rotors |
| The need for more pedal pressure when increasing power |
| The Centre of Gravity |
| Height Velocity Diagrams |
| The Hang Check |
| BRIEFING AND CARE OF PASSENGERS |
| Pre-flight briefing, including all applicable legal aspects like indemnities (the pilot can NOT contract out of negligence!). |
| Description of aircraft and basic principles of flying and airmanship. |
| Mounting and dismounting and the dangers of loose articles. |

APPENDIX F
SYLLABUS OF PRACTICAL KNOWLEDGE FOR THE GYROPLANE INSTRUCTOR RATING

1. Aim and Contents of the Flight Instructor Practical Training Course

The Flight Instructor Training Course is intended to prepare the trainee instructor to give competent flight and ground instruction at the standard required of a Grade C Flight Instructor. This is directed at the flight instruction given to ab initio students training for the National Pilot's Licence in the Category Gyroplanes.

The practical training syllabus includes preparatory instruction of the trainee instructor, and exercises in which the trainee instructor develops skills and competence by means of simulated ground and flight instruction. In the exercises the training instructor acts as a simulated student, as well as providing instruction and critique. Advanced trainee instructors may be allowed to provide ground instruction to actual students, while under supervision of the training instructor and with the consent of the students.

In the exercises the trainee instructor is required to develop competence in -

- (a) Application of the theoretical training received, particularly as regards human factors and the theory of learning and teaching, so as to give effective and efficient instruction;
- (b) Planning and structuring of lessons and courses of training. The preparation of lesson plans is an essential pre-requisite of good instruction and the student instructor is to be given supervised practice in the planning and practical application of lesson plans, for both ground and flight instruction.
- (c) Giving accurate and informative briefings, on the matters relevant to the exercise;
- (d) Accurate and convincing demonstration of the flight manoeuvres, coordinated with verbal instruction ("Patter");
- (e) Analysis and critique of student performance, including diagnosis of common faults; and
- (f) Demonstrating a high level of airmanship, including safe flying practice, adherence to the regulations and standard operating procedures, situational awareness and CRM.

2. General Structure of the Exercises

Usually each exercise consists of -

2.1 Long briefing

This provides the student with the theory which underpins the practical exercise, so that the student acquires a rational and scientifically sound understanding of the aircraft manoeuvring and the phenomena observed. The expected contents of the Long Briefings are set out below.

2.2 Air Exercise Briefing

The briefing normally includes a statement of the aim and a brief allusion to the underlying theory only if relevant. A plan is to be given of exactly what tasks are to be taught by the instructor and practised by the student during the flight. It should include how the flight will be conducted with regards to who is to fly the gyroplane and what airmanship, weather and flight safety aspects currently apply. Power settings, speeds and configurations will also be detailed in the briefing. The nature of the lesson will govern the order in which the constituent parts are to be taught.

The four basic components of the briefing will be:

- 1 The aim
- 2 Principles of Flight (briefest reference only)
- 3 The tasks (what, and how and by whom)
- 4 Airmanship (weather, flight safety etc.)

3.3 Air Exercise

This is the actual exercise, carried out in the gyroplane. It should follow closely the plan set out in the Air Exercise Briefing. During the air exercise the training instructor will coach the trainee instructor in demonstrating flight manoeuvres and "patter". The following considerations apply -

- (a) The trainee instructor should complete the air exercises to practise basic instruction at the NPL (GYRO) level.
- (b) During this training, the trainee instructor shall occupy the seat normally occupied by the Flight Instructor.
- (c) It is to be noted that airmanship is a vital ingredient of all flight operations. Therefore, in the air exercises the relevant aspects of airmanship are to be stressed at the appropriate times during each flight.

3.4 Post-flight de-briefing

In the post-flight de-briefing the instructor provides critique of the student's performance, with suggestions for improvement. The de-brief will also include the completion of the post-flight documents, and the completion of the student's training record including the acknowledgement of the training given by the student's signature at the appropriate entry. Guidance should be given to the student for preparation for the next phase of training.

| EXERCISE | DESCRIPTION | CHECKED |
|------------|---|---------|
| 1 | Administration | |
| | (1) Student training files | |
| | (2) Progress reports | |
| | (3) Logbooks | |
| | a. Student log book | |
| | b. Aircraft log book | |
| | c. Instructor log book | |
| | (4) Authorization sheets | |
| | (5) Application forms | |
| | (6) Medicals | |
| | (7) Maintenance of Instructor personal training file | |
| | (8) The filing, use and format of legislation, AIPs, AIP amendments, AIC's, Notams and other relevant documents. | |
| 2 | Ground School | |
| | (1) Instructional aids | |
| | (2) Textbooks | |
| | (3) Additional notes | |
| | (4) Reference library | |
| | (5) Lecture methods and preparation | |
| | (6) Lecture schedules | |
| | (7) Student briefings | |
| | a. Before flight lesson | |
| | b. After flight lesson | |
| | c. Preparation of exams | |
| | d. After exams | |
| 3.A | Patter flying | |
| | In the case of a Grade C national flight instructor rating, patter training including the following exercises. All the patter flying will be with a Grade A instructor. | |
| | Exercise 2 : Preparation for, and action after flight | |
| | Aim: To explain 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) Seating position – suitable clothing | |
| | (9) Starting and warming-up checks | |
| | (10) Power checks | |
| | (11) Running down and switching off of engine | |
| | (12) Parking, security and picketing; and | |
| | (13) Completion of authorisation and flight folio sheets | |
| | (14) Assessing student, communication and explanation of each aspect. | |
| | Exercise 4 : Effect of controls | |
| | Aim: To explain and demonstrate 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 | |

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| (c) power changes | |
| (d) trimming of controls | |
| (e) rudder | |
| (f) other controls, as applicable | |
| (4) Use of engine controls | |
| (5) How much control to hand over to the student and when, | |
| (6) How to get full control back from the student – action in the event of a student locking on controls. | |
| (7) Typical errors to expect during type conversions. | |
| (8) 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 | |
| (15) Emergencies (brake and steering failure) | |
| (16) Typical problems with student co-ordination | |
| (17) What to expect from a student during type conversion. | |
| (18) Airmanship | |
| Exercise 6 : Straight and level flight | |
| Aim: To attain and maintain flight in a straight line and at a constant altitude. | |
| (1) At normal cruising power, attaining and maintaining straight and level flight | |
| (2) Demonstration of inherent stability | |
| (3) Control in pitch, including use of trim | |
| (4) Lateral level, direction and balance, trim | |
| (5) At selected airspeeds (use of power) | |
| (6) During speed and configuration changes | |
| (7) Use of instruments. | |
| (8) Typical student problems and how to address them. | |
| (9) 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 | |
| (2) Levelling off at selected altitudes | |
| (3) <i>En route</i> (cruise) climb | |
| (4) Maximum angle of climb | |
| (5) Use of instruments | |
| (6) Typical student problems and how to address it. | |
| (7) 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 | |

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| | (5) Side-slipping | |
| | (6) Typical student reactions and problems | |
| | (7) 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 Gyroplane in balance should this situation occur. | |
| | (1) Safety checks | |
| | (2) Introduction to slow flight | |
| | (3) Controlled flight | |
| | (a) clean at stall speed plus 10 MPH | |
| | (4) Application of full power with correct attitude to achieve level speed | |
| | (5) Typical student problems and addressing them | |
| | (6) Airmanship. | |

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| | B. Stalling | n/a |
| | Exercise 10: Medium Turns | |
| | Aim: To enter and maintain a medium (up to approximately 30o 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 gyro heading indicator and compass | |
| | (5) Use of instruments | |
| | (6) Addressing typical student errors | |
| | (7) Airmanship. | |
| | Exercise 11 : Descending and Climbing Turns | |
| | Note: Ideally, climbing turns should not exceed 15 deg bank angle, to optimise rate of climb. | |
| | Aim: To enter and maintain a medium (up to approximately 30o bank angle) turn whilst maintaining a climb or descent, or to enter and maintain a turn from a straight climb or descent. | |
| | (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 gyro heading indicator and compass | |
| | (5) Use of instruments | |
| | (6) Addressing typical student errors | |
| | (7) 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. | |
| | (1) Pre-take-off checks | |
| | (2) Factors affecting the length of the take-off roll and the initial climb | |
| | (3) Into wind take-off | |
| | (4) Nose wheel / tail wheel considerations | |
| | (5) Drills during and after take-off | |
| | (6) Short take-off and soft-field procedures / techniques, including performance calculations | |
| | (7) Undulating (rough field) considerations | |
| | (8) Noise abatement procedures | |
| | (9) Abandoned take-off | |
| | (10) Engine failure after take-off up to early downwind | |
| | (11) Addressing typical student errors | |
| | (12) 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 | |

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| (2) Powered approach and landing | |
| (3) Nose wheel / tail wheel considerations | |
| (4) Effect of wind on approach and touchdown speeds | |
| (5) Glide approach and landing | |
| (6) Short-landing and soft-field procedures / techniques | |
| (7) Missed approach / go-around | |
| (8) Noise abatement procedures | |
| (9) Correcting bad approaches | |
| – Hot and high | |
| – Low and slow | |
| (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) Addressing typical student errors | |
| (15) Airmanship | |
| Exercise 14 – Spin awareness | n/a |
| 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) Common reactions and errors of students and how to rectify it | |
| (6) 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 o turns (up to 45o bank angle) maintaining altitude, recovering to straight and level flight. | |
| (2) Steep descending turns (up to 60o 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 | N/A |
| (4) Stalling in the turn and recovery | N/A |
| (5) Recoveries from unusual attitudes | |
| (6) Understanding student reluctance and gradually building confidence. | |
| (7) Recognizing disorientation in the student | |
| (8) Pre-empting reactions from students and formulating appropriate responses | |
| (9) Airmanship | |
| Exercise 18: Use of instruments | |
| Aim: To develop the habit of checking constantly both navigational and engine instruments from the instructor seat, while also pointing out relevant information to the student, and 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) Effect of precipitation (as applicable to type) | |
| (7) Joining circuit in poor weather | |
| (8) bad-weather circuit | |

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| (9) Addressing typical student errors | |
| (10) 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 | |
| (4) Approach and cross-wind landings | |
| a. crabbing method | |
| b. forward slipping method | |
| (5) Addressing typical student errors | |
| (6) 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 | |
| (6) Circuit and approach | |
| (7) PAN call | |
| (8) Actions after landing | |
| (9) Specific emphasis on areas where students are generally weak. | |
| (10) Airmanship | |
| Exercise 22: Forced landing | |
| Aim: To carry out a safe descent and landing in the event of the engine failing during flight. To be practiced at the training airfield, outside of the circuit pattern. The touch down must be no more than 25m before or after a point chosen by the candidate, and verbally conveyed to the pater instructor before commencement. | |
| (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 | |
| (8) Base leg | |
| (9) Final approach | |
| (10) Landing | |
| (11) Actions after landing | |
| (12) Techniques of building student confidence. | |
| (13) Airmanship | |
| Exercise 23: Action in Event of Fire | |
| Aim: Fire is prone to happen in case of an accident, 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 | |
| Aim: It is important that the candidate must show exceptional presence of mind in this situation, and be able to either take over from his student immediately, or guide him through it. | |
| Note: This exercise only to be attempted within easy glide of the training airfield and to be treated as a simulated emergency until the engine is successfully re-started. | |

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| | (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, with the emphasis of situations where a student may inadvertently cause unusual and dangerous attitude, how to recognize the onset and correct timorously | |
| | (1) Recovery from inadvertent mishandling of controls – | |
| | (a) at high speeds | |
| | (b) in stall recovery in various configurations | n/a |
| | (c) in a steep turn | |
| | (d) following hitting wake turbulence in a 360o steep turn at 45o to 60o bank angles | n/a |
| | (2) Airmanship | |
| | 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 their effect | |
| | (8) Radio work | |
| 4.A | Practical Aircraft work | |
| | In the case of a Grade C recreational flight instructor rating practical aircraft work covering the following: | |
| | (1) Pre-flight | |
| | Aim: To enhance pre-flight ability and the ability to encourage systematic, thorough and regular pre-flights on a variety of aircraft | |
| | (1) Airframe | |
| | a. Symmetry | |
| | b. Materials | |
| | c. Control surfaces | |
| | d. suspension if applicable | |
| | e. steering | |
| | f. brackets | |
| | g. Instrument console, including power supply to instruments, intercom, radio and aerial connections. | |
| | h. engine mount | |
| | i. wheels and tyres | |
| | j. brakes | |
| | k. tubing | |
| | l. cables | |
| | m. seats and seatbelts | |
| | n. fuel-tank | |
| | o. battery | |
| | (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 | |
| | (2) Basic engine maintenance | |

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| (1) Spark plug changes | |
| (2) Main jets, needle jets and jet needles | |
| (3) Balancing carburetors | |
| (4) Replacing carb rubbers | |
| (5) Cleaning air filters | |
| (6) Replacing fuel filters | |
| (7) Adjusting fan belts | |
| (8) When to call the AP or Mechanic | |
| (3) Propellor | |
| (1) Replacing | |
| (2) Torque | |
| (3) Track | |
| (4) Pitch and Track adjustments | |
| (4) Rotorblades | |
| (1) Rotorhead | |
| (2) Pre Rotator | |
| (3) Hubbar | |
| (4) When to call the AP | |
| (5) Rigging and de-rigging | |
| Removing Rotorblades | |
| (2) Trailoring without damage | |
| (3) Replacing Rotorblades without damage | |
| (4) Special techniques and considerations | |

APPENDIX G
SYLLABUS OF THEORETICAL KNOWLEDGE FOR THE GYROPLANE INSTRUCTOR RATING

- a) The qualities of the instructor
- b) The learner and teaching adults
 - 1) Learning in adulthood
 - 2) Classes of information (Learning Pyramid)
 - 3) Memory
 - 4) Adults as students
 - 5) Adults expect more
 - 6) Motivation, promoting the desire to learn maintaining the desire to learn
 - 7) Non-verbal communication
- c) The teaching and learning environment
 - 1) The environment
 - 2) Accommodation
 - 3) Equipment
 - 4) Other considerations
 - 5) Classrooms
 - 6) The cockpit
 - 7) You have control
 - 8) Standardization of cockpit displays
 - 9) Prior preparation and planning
 - 10) Checklists
 - 11) Training rooms
 - 12) Training room facilities
 - 13) Other amenities
 - 14) Course joining instructions
 - 15) Training
 - 16) Selecting a training method
 - 17) Theory lesson
 - (ii) Practical lesson
 - (iii) Lecture
 - (iv) Briefings
 - (v) Some other training methods
 - 18) Preparation & planning
 - 19) Lesson preparation
 - (ii) Class
 - (iii) Objectives
 - (iv) Material
 - (v) Props
 - (vi) Training methods
 - (vii) Lesson Plan
 - (viii) Environment
 - (ix) Timings
 - (x) Editing
- d) Aims and objectives
 - 1) Aims versus objectives
 - 2) The benefits of objectives
 - 3) Writing lesson objectives
 - 4) An observable action
 - 5) A measure of performance
 - 6) The relevant conditions
- e) Confirmation
 - 1) When to use confirmation

- 2) Types of confirmation
 - 3) Asking questions
 - 4) P-P-P
 - 5) Some simple rules
 - 6) Dealing with questions
- f) Training aids
- 1) The learning ladder
 - 2) Selection of training aids
 - 3) Use of training aids
 - 4) Advantage of using the OHP/Projector
 - 5) General rules
- g) Theory lesson plan
- 1) Lesson plans - general
 - 2) Beginning
 - 3) Time
 - 4) Middle - body
 - 5) End
- h) Practical lesson plan
- 1) Typical lesson plan layout
 - 2) Lesson plan - practical
 - 3) Beginning
 - 4) Time
 - 5) Middle - body
 - 6) E.D.I.P
 - 7) End
- i) Assessment
- 1) Hear say - complying with standards -
 - 2) Halo effect
 - 3) Role of the assessor
 - 4) Methods of assessment
 - 5) Mistakes during assessment
 - 6) Correction of mistakes
 - 7) Proving a point
 - 8) The experienced pilot
 - 9) Protocol brief
 - 10) Written tests
 - 11) Skills/practical test
 - 12) Student instructor assessment
 - 13) Student instructor observation pro-forma
 - 14) theory lesson
- j) The Training and development Loop
- 1) The training loop
 - 2) Linked case history
 - 3) Identifying the training requirements
 - 4) Setting training objectives
 - 5) Designing and planning the training
 - 6) Delivery of the training
 - 7) Evaluating the training
 - 8) Evaluation process
 - 9) Skills acquisition
 - 10) Changing attitudes and behavior
 - 11) Knowledge acquisition

12) Post course evaluation

Instructor duties, privileges, responsibilities and limitations

Student instructor assessment tests