**SUBPART B. LIGHT AIRCRAFT PILOT LICENCE — LAPL**

***AMC 1.* FCL. 115 ; FCL. 120**

*SYLLABUS of THEORETICAL KNOWLEDGE for the LAPL*

a ) The training and examination should cover aspects related to non-technical skills in an integrated manner, taking into account the particular risks associated with the licence and the activity. The theoretical knowledge instruction provided by the ATO should include a certain element of formal classroom work but may also include other methods of delivery for example interactive video, slide or tape presentation, computer-based training and other media distance learning courses. The training organization responsible for the training has to check if all the appropriate elements of the training course of theoretical knowledge instruction have been completed to a satisfactory standard before recommending the applicant for the examination ;

b ) The following Tables contain the syllabi for the courses of theoretical knowledge, as well as for the theoretical knowledge examinations for the LAPL( B ) and LAPL( S ). The syllabi for the theoretical knowledge instruction and examination for the PPL ( A ) and PPL ( H ) in AMC 1. FCL. 210 and FCL. 215 should be used for the LAPL ( A ) and the LAPL ( H ), respectively.

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| **I.** | **COMMON SUBJECTS** [ For LAPL ( S ) *and* LAPL ( B ) ] |
| **1.** | *AIR LAW and ATC Procedures* |
| 1. 1 | International Law : conventions, agreements and organizations |
| 1. 2 | Airworthiness of Aircraft |
| 1. 3 | Aircraft nationality and registration marks |
| 1. 4 | Personnel licensing |
| 1. 5 | Rules of the Air |
| 1. 6 | Procedures for air navigation : aircraft operations |
| 1. 7 | Air Traffic Regulations : airspace structure |
| 1. 8 | ATS and Air Traffic Management |
| 1. 9 | AIS |
| 1. 10 | Aerodromes, external take-off sites |
| 1. 11 | Search and Rescue |
| 1. 12 | Security |
| 1. 13 | Accident reporting |
| 1. 14 | National Law |
| **2.** | *Human Performance* |
| 2. 1 | Human factors : basic concepts |
| 2. 2 | Basic aviation physiology and health maintenance |
| 2. 3 | Basic aviation psychology |
| **3**. | *Meteorology* |
| 3. 1 | The atmosphere |
| 3. 2 | Wind |
| 3. 3 | Thermodynamics |
| 3. 4 | Clouds and fog |
| 3. 5 | Precipitation |
| 3. 6 | Air masses and fronts |
| 3. 7 | Pressure systems |
| 3. 8 | Climatology |
| 1. 9 | Flight hazards |
| 1. 10 | Meteorological information |

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| **4.** | *Communications* |
| 4. 1 | VFR communications |
| 4. 2 | Definitions |
| 4. 3 | General operating procedures |
| 4. 4 | Relevant weather information terms ( VFR ) |
| 4. 5 | Action required to be taken in case of communication failure |
| 4. 6 | Distress and urgency procedures |
| 4. 7 | General principles of VHF propagation and allocation of frequencies |
| **II.** | **ADDITIONAL SUBJECTS for EACH CATEGORY** |
| **II. A***.* | ***SAILPLANES*** |
| **5.** | *Principles of Flight - Sailplane* |
| 5. 1 | Aerodynamics *( airflow )* |
| 5. 2 | Flight mechanics |
| 5. 3 | Stability |
| 5. 4 | Control |
| 5. 5 | Limitations *( load factor and manoeuvres )* |
| 5. 6 | Stalling and Spinning |
| **6.** | *Operational Procedures - Sailplane* |
| 6. 1 | General requirements |
| 6. 2 | Launch method |
| 6. 3 | Soaring techniques |
| 6. 4 | Circuits and Landing |
| 6. 5 | Outlanding |
| **7.** | *Flight Performance and Planning - Sailplane* |
| 7. 1 | Verifying mass and balance |
| 7. 2 | Speed polar of sailplanes or cruising speed |
| 7. 3 | Flight planning and task setting |
| 7. 4 | ICAO Flight Plan ( ATS Flight Plan ) |
| 7. 5 | Flight monitoring and in - flight re - planning |
| **8.** | *Aircraft General Knowledge, Airframe and Systems and Emergency Equipment* |
| 8. 1 | Airframe |
| 8. 2 | System design, loads and stresses |
| 8. 3 | Landing gear, wheels, tyres and brakes |
| 8. 4 | Mass and Balance |
| 8. 5 | Flight controls |
| 8. 6 | Instruments |
| 8. 7 | Manuals and Documents |
| 8. 8 | Airworthiness and Maintenance |
| **9.** | *Navigation – Sailplane* |
| 9. 1 | Basics of Navigation |
| 9. 2 | Magnetism and compasses |
| 9. 3 | Charts |
| 9. 4 | Dead reckoning navigation |
| 9. 5 | In - flight navigation |
| 9. 6 | Global Navigation Satellite Systems / GNSS |
| **II. B***.* | ***BALLOONS*** |
| **5.** | *Principles of Flight – Balloon* |
| 5. 1 | Principles of flight |
| 5. 2 | Aerostatics |
| 5. 3 | Loading limitations |
| 5. 4 | Operational limitations |

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| **6.** | *Operational Procedures – Balloon* |
| 6. 1 | General requirements |
| 6. 2 | Special operational procedures and hazards *( general aspects )* |
| 6. 3 | Emergency procedures |
| **7.** | *Flight Performance and Planning – Balloon* |
| 7. 1 | Mass |
| 7.1.1 | Purpose of mass considerations |
| 7.1.2 | Loading |
| 7. 2 | Performance |
| 7.2.1 | Performance : general |
| 7. 3. | Flight planning and flight monitoring |
| 7.3.1 | Flight planning : general |
| 7.3.2 | Fuel planning |
| 7.3.3 | Pre - flight preparation |
| 7.3. 4 | ICAO Flight Plan ( ATS Flight Plan ) |
| 7.3. 5 | Flight monitoring and in - flight re - planning |
| **8.** | *Aircraft General Knowledge, Envelope and Systems and Emergency Equipment* |
| 8. 1 | System design, loads, stresses and maintenance |
| 8. 2 | Envelope |
| 8. 3 | Burner *( hot - air balloon and hot - air airship )* |
| 8. 4 | Fuel cylinders *( hot - air balloon or hot - air airship )* |
| 8. 5 | Basket or gondola |
| 8. 6 | Lifting gas *( gas balloon )* |
| 8. 7 | Burning gas *( hot -air balloon or hot-air airship)* |
| 8. 8 | Ballast *( gas balloon )* |
| 8. 9 | Engine ( *hot-air airship*  *only )* |
| 8. 10 | Instruments |
| 8. 11 | Emergency equipment |
| **9.** | *Navigation – Balloon* |
| 9. 1 | General navigation |
| 9. 2 | Basics of navigation |
| 9. 3 | Magnetism and compasses |
| 9. 4 | Charts |
| 9. 5 | Dead reckoning navigation |
| 9. 6 | In - flight navigation |
| 9. 7. | GNSS |
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***AMC 1.* FCL. 120 ; FCL. 125**

*THEORETICAL KNOWLEDGE EXAMINATION and SKILL TEST for the LAPL ( A )*

*a ) Theoretical Knowledge Examination :*

1 ) The examinations should be in written form and should comprise a total of 120 multiple-choice questions covering all the subjects ;

2 ) For the subject “ communication “ practical classroom testing may be conducted ;

3 ) The GDCA should inform applicants of the language(s) in which the examinations will be conducted.

*b ) Skill Test :*

Further training may be required following any failed Skill Test or part thereof. There should be no limit to the number of Skill Test that may be attempted ;

*c ) Conduct of the Test :*

1 ) If the applicant chooses to terminate a Skill Test for reasons considered inadequate by the FE, the applicant should retake the entire Skill Test. If the test is terminated for reasons considered adequate by the FE, only those sections not completed should be tested in a further flight ;

2 ) Any manoeuvre or procedure of the test may be repeated once by the applicant. The FE may stop the test at any stage if it is considered that the applicant’s demonstration of flying skill requires a complete retest ;

3 ) An applicant should be required to fly the aircraft from a position where the PIC functions can be performed and to carry out the test as if there is no other crew member. Responsibility for the flight should be allocated in accordance with national regulations.

***AMC 1*. FCL. 125 LAPL — Skill Test**

*CONTENTS of the SKILL TEST for the ISSUE of a LAPL ( A )*

a ) The route to be flown for the Skill Test should be chosen by the FE. The route should end at the aerodrome of departure or at another aerodrome. The applicant should be responsible for the flight planning and should ensure that all equipment and documentation for the execution of the flight are on board. The navigation section of the test should have a duration of *at least* ***30***  *minutes* which allows the pilot to demonstrate his / her ability to complete a route with at least two identified waypoints and may, as agreed between applicant and FE, be flown as a separate test ;

b ) An applicant should indicate to the FE the checks and duties carried out, including the identification of radio facilities. Checks should be completed in accordance with the flight manual or the authorized checklist for the aeroplane or TMG on which the test is being taken. During pre-flight preparation for the test the applicant should be required to determine power settings and speeds. Performance data for take-off, approach and landing should be calculated by the applicant in compliance with the Operations Manual or Flight Manual for the aeroplane or TMG used.

*FLIGHT TEST TOLERANCE*

c ) The applicant should demonstrate the ability to :

1 ) operate the aeroplane or TMG within its limitations ;

2 ) complete all manoeuvres with smoothness and accuracy ;

3 ) exercise good judgment and airmanship ;

4 ) apply aeronautical knowledge ;

5 ) maintain control of the aeroplane or TMG at all times in such a manner that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

d ) The following limits are for general guidance. The FE should make allowance for turbulent conditions and the handling qualities and performance of the aeroplane or TMG used:

1 ) HEIGHT : normal flight ± 150 ft ;

2 ) SPEED : ( i ) Take - off and Approach + 15 / - 5 knots ;

( ii ) all other flight regimes ± 15 knots.

*CONTENT of the SKILL TEST*

e ) The Skill Test contents and sections set out in this AMC should be used for the Skill Test for the issue of a LAPL ( A ) :

***Section 1****.* *PRE - FLIGHT OPERATIONS and DEPARTURE*

Use of Checklist, airmanship, control of aeroplane or TMG by external visual reference, anti / de - icing procedures, etc... apply in all sections.

a Pre - flight documentation, NOTAM and weather briefing ;

b Mass and Balance and Performance calculation ;

c Aeroplane or TMG inspection and servicing ;

d Engine starting and after starting procedures ;

e Taxiing and aerodrome procedures, pre - take - off procedures ;

f Take - off and after take - off checks ;

g Aerodrome Departure Procedures ;

h ATC liaison : compliance.

***Section 2****.* *GENERAL AIRWORK*

a ATC liaison ;

b Straight and level flight, with speed changes ;

c Climbing :

i. best rate of climb ;

ii. climbing turns ;

iii. leveling off.

d Medium ( 30° bank ) turns, look - out procedures and collision avoidance ;

e Steep ( 45 ° bank ) turns ;

f Flight at critically low air speed with and without flaps ;

g Stalling :

i. clean stall and recover with power ;

ii. approach to stall descending turn with bank angle 20 °, approach configuration ;

iii. approach to stall in landing configuration.

h Descending :

i. with and without power ;

ii. descending turns ( steep gliding turns ) ;

iii. leveling off.

***Section 3****.*  *EN - ROUTE PROCEDURES*

a Flight plan, dead reckoning and map reading ;

b Maintenance of altitude, heading and speed ;

c Orientation, airspace structure, timing and revision of ETA’s, log keeping ;

d Diversion to alternate aerodrome *( planning and implementation ) ;*

e Flight management *( checks, fuel systems, carburettor icing, etc... ) ;*

f ATC liaison : compliance.

***Section 4****.* *APPROACH and LANDING PROCEDURES*

a Aerodrome Arrival Procedures ;

b Collision avoidance *( look - out procedures )* ;

c Precision landing *( short field landing )* and crosswind, if suitable conditions available ;

d Flapless landing *( if applicable )* ;

e Approach to landing with idle power ;

f Touch and Go ;

g Go - around from low height ;

h ATC liaison ;

i Actions after flight .

***Section 5****.* *ABNORMAL and EMERGENCY PROCEDURES*

This Section may be combined with *Sections* ***1*** *through* ***4*** :

a Simulated engine failure after Take - off ;

b \* Simulated forced landing ;

c \* Simulated precautionary landing ;

d Simulated emergencies ;

e Oral questions ;

\* *these items may be combined, at the discretion of the FE.*

***AMC 2*. FCL. 125 LAPL — Skill Test**

*CONTENTS of the SKILL TEST for the ISSUE of a LAPL ( H )*

a ) The area and route to be flown for the skill test should be chosen by the FE. The route should end at the aerodrome of departure or at another aerodrome. The applicant should be responsible for the flight planning and should ensure that all equipment and documentation for the execution of the flight are on board. The navigation section of the test should consist of at least two legs, each leg of a minimum duration of 10 minutes. The skill test may be conducted in two flights ;

b ) An applicant should indicate to the FE the checks and duties carried out, including the identification of radio facilities. Checks should be completed in accordance with the flight manual or the authorized checklist or pilot operating handbook for the helicopter on which the test is being taken. During pre-flight preparation for the test the applicant should be required to determine power settings and speeds. Performance data for take-off, approach and landing should be calculated by the applicant in compliance with the operations manual or flight manual for the helicopter used.

*FLIGHT TEST TOLERANCE*

c ) The applicant should demonstrate the ability to :

1 ) operate the helicopter within its limitations ;

2 ) complete all maneuvers with smoothness and accuracy ;

3 ) exercise good judgment and airmanship ;

4 ) apply aeronautical knowledge ;

5 ) maintain control of the helicopter at all times in such a manner that the successful outcome of a procedure or maneuver is never seriously in doubt.

d ) The following limits are for general guidance. The FE should make allowance for turbulent conditions and the handling qualities and performance of the helicopter used :

1 ) HEIGHT : ( i ) normal forward flight  150 ft

( ii ) with simulated major emergency  200 ft

( iii ) hovering IGE flight  2 ft

2 ) SPEED : ( i ) Take - off / Approach + 15 knots / - 10 knots

( ii ) all other flight regimes  15 knots

3 ) ROUND DRIFT : ( i ) Take - off hover IGE  3 ft

( ii ) Landing no sideways or backwards movement

*CONTENT of the SKILL TEST*

e ) The skill test contents and sections set out in this AMC should be used for the skill test for the issue of a LAPL ( H ) :

***Section 1.*** *PRE - FLIGHT or POST - FLIGHT CHECKS and PROCEDURES*

Use of checklist, airmanship, control of helicopter by external visual reference, anti / de-icing procedures, etc... apply in all sections.

a Helicopter knowledge *( for example technical log, fuel, mass and balance, performance ),* flight planning, NOTAM, and weather briefing ;

b Pre-flight inspection or action, location of parts and purpose ;

c Cockpit inspection, starting procedure ;

d Communication and navigation equipment checks, selecting and setting frequencies ;

e Pre-take-off procedure and ATC liaison ;

f Parking, shutdown and post-flight procedure.

***Section 2.*** *HOVER MANOEUVRES, ADVANCED HANDLING and CONFINED AREAS*

a Take-off and landing *( lift off and touch down ) ;*

b Taxi and hover taxi ;

c Stationary hover with head, cross and tail wind ;

d Stationary hover turns, 360 ° left and right ( spot turns ) ;

e Forward, sideways and backwards hover maneuvering ;

f Simulated engine failure from the hover ;

g Quick stops into and downwind ;

h Sloping ground or unprepared sites landings and take-off’s ;

i Take - off’s ( various profiles ) ;

j Crosswind and downwind take - off ( if practicable ) ;

k Take-off at maximum take-off mass ( actual or simulated ) ;

l Approaches ( various profiles ) ;

m Limited power take-off and landing ;

n Autorotations ( FE to select two items from the following :

basic,

range,

low speed, *and*

360 ° turns ) ;

o Autorotative landing ;

p Practice forced landing with power recovery ;

q Power checks, reconnaissance technique, approach and departure technique

***Section 3.*** *NAVIGATION and EN - ROUTE PROCEDURES*

a Navigation and orientation at various altitudes or heights and map reading ;

b Altitude or height, speed, heading control, observation of airspace and altimeter setting ;

c Monitoring of flight progress, flight-log, fuel usage, endurance, ETA, assessment of track error, re-establishment of correct track and instrument monitoring ;

d Observation of weather conditions and diversion planning ;

e Collision avoidance ( look - out procedures ) ;

f ATC liaison with due observance of regulations ;

***Section 4.*** *FLIGHT PROCEDURES and MANOEUVRES*

a Level flight, control of heading, altitude or height and speed

b Climbing and descending turns to specified headings

c Level turns with up to 30 ° bank, 180 ° to 360 ° left and right

***Section 5.*** *ABNORMAL and EMERGENCY PROCEDURES ( SIMULATED where*

*APPROPRIATE )*

***Note :*** *the FE selects 4 items from the following :*

a Engine malfunctions, including governor failure, carburettor or engine icing and oil system, as appropriate ;

b Fuel system malfunction ;

c Electrical system malfunction ;

d Hydraulic system malfunction, including approach and landing without hydraulics, as applicable ;

e Main rotor or anti-torque system malfunction ( FFS or discussion only ) ;

f Fire drills, including smoke control and removal, as applicable ;

g Other abnormal and emergency procedures as outlined in appropriate flight manual.

***AMC 1.* FCL. 125 ; FCL. 235**

*CONTENTS of the SKILL TEST for the ISSUE of a LAPL ( S ) and of an SPL ( A* *)*

a ) An applicant should be responsible for the flight planning and should ensure that all equipment and documentation for the execution of the flight are on board ;

b ) The applicant should indicate to the FE the checks and duties carried out.

Checks should be completed in accordance with the flight manual or the authorized checklist for the sailplane on which the test is being taken.

*FLIGHT TEST TOLERANCE*

c ) The applicant should demonstrate the ability to :

1 ) operate the sailplane within its limitations ;

2 ) complete all maneuvers with smoothness and accuracy ;

3 ) exercise good judgment and airmanship ;

4 ) apply aeronautical knowledge ;

5 ) maintain control of the sailplane at all times in such a manner that the successful outcome of a procedure or maneuver is never seriously in doubt.

*CONTENT of the SKILL TEST*

d ) The skill test contents and sections set out in this AMC should be used for the skill test for the issue of a LAPL( S ) and of an SPL :

***Section 1.*** *PRE - FLIGHT OPERATIONS and DEPARTURE*

Use of checklist, airmanship (control of sailplane by external visual reference), look-out. Apply in all sections.

a Pre-flight sailplane *( daily )* inspection, documentation, NOTAM and weather briefing ;

b Verifying in - limits mass and balance and performance calculation ;

c Sailplane servicing compliance ;

d Pre - Take - off checks.

***Section 2*.** *LAUNCH METHOD*

***Note :*** *at least for one of the three launch methods all the mentioned items are fully*

*exercised during the skill test.*

***Section 2.*** ***( A )*** *WINCH or CAR LAUNCH*

a Signals before and during launch, including messages to winch driver ;

b Adequate profile of winch launch ;

c Simulated launch failure ;

d Situational awareness.

***Section 2.*** ***( B )*** *AEROTOW LAUNCH*

a Signals before and during launch, including signals to or communications with tow plane pilot for any problems :

b Initial roll and take-off climb ;

c Launch abandonment ( simulation only or “ talk - through “ ) ;

d Correct positioning during straight flight and turns ;

e Out of position and recovery ;

f Correct release from tow ;

g Look - out and airmanship through whole launch phase.

***Section 2.*** ***( C )***  *SELF - LAUNCH ( powered sailplanes only )*

a ATC compliance ( if applicable ) ;

b Aerodrome departure procedures ;

c Initial roll and take-off climb ;

d Look - out and airmanship during the whole take-off ;

e Simulated engine failure after take-off

f Engine shut down and stowage.

***Section 3.*** *GENERAL AIRWORK*

a Maintain straight flight : attitude and speed control ;

b Coordinated medium *( 30° bank )* turns, look-out procedures and collision avoidance ;

c Turning on to selected headings visually and with use of compass ;

d Flight at high angle of attack ( critically low air speed ) ;

e Clean stall and recovery ;

f Spin avoidance and recovery ;

g Steep *( 45° bank )* turns, look-out procedures and collision avoidance ;

h Local area navigation and awareness.

***Section 4.*** *CIRCUIT, APPROACH and LANDING*

a Aerodrome circuit joining procedure ;

b Collision avoidance : look-out procedures ;

c Pre-landing checks ;

d Circuit, approach control and landing ;

e Precision landing *( simulation of out-landing and short field )* ;

f Crosswind landing, if suitable conditions available.

***AMC 2.* FCL. 125 ; FCL. 235**

*CONTENTS of the SKILL TEST for the ISSUE of a LAPL ( B ) and of an BPL*

a ) The take-off site should be chosen by the applicant depending on the actual meteorological conditions, the area which has to be over flown and the possible options for suitable landing sites. The applicant should be responsible for the flight planning and should ensure that all equipment and documentation for the execution of the flight are on board ;

b ) An applicant should indicate to the FE the checks and duties carried out. Checks should be completed in accordance with the flight manual or the authorized checklist for the balloon on which the test is being taken. During pre-flight preparation for the test the applicant should be required to perform crew and passenger briefings and demonstrate crowd control. The load calculation should be performed by the applicant in compliance with the operations manual or flight manual for the balloon used.

*FLIGHT TEST TOLERANCE*

c ) The applicant should demonstrate the ability to :

1 ) operate the balloon within its limitations ;

2 ) complete all maneuvers with smoothness and accuracy ;

3 ) exercise good judgment and airmanship ;

4 ) apply aeronautical knowledge ;

5 ) maintain control of the balloon at all times in such a manner that the successful outcome of a procedure or maneuver is never seriously in doubt.

*CONTENT of the SKILL TEST*

d ) The skill test contents and sections set out in this paragraph should be used for the skill test for the issue of a LAPL ( B ) *( hot - air balloon )* and a BPL *( hot - air balloon )* :

***Section 1.*** *PRE - FLIGHT OPERATIONS, INFLATION and TAKE - OFF*

Use of checklist, airmanship, control of balloon by external visual reference, look - out procedures, etc... apply in all sections.

a Pre-flight documentation, flight planning, NOTAM and weather briefing ;

b Balloon inspection and servicing ;

c Load calculation ;

d Crowd control, crew and passenger briefings ;

e Assembly and layout ;

f Inflation and pre-take-off procedures ;

g Take-off ;

h ATC compliance *( if applicable ).*

***Section 2.***  *GENERAL AIRWORK*

a Climb to level flight ;

b Level flight ;

c Descent to level flight ;

d Operating at low level ;

e ATC compliance *( if applicable ).*

***Section 3.*** *EN - ROUTE PROCEDURES*

a Dead reckoning and map reading ;

b Marking positions and time ;

c Orientation and airspace structure ;

d Maintenance of altitude ;

e Fuel management ;

f Communication with retrieve crew ;

g ATC compliance.

***Section 4.*** *APPROACH and LANDING PROCEDURES*

a Approach from low level, missed approach and fly on ;

b Approach from high level, missed approach and fly on ;

c Pre-landing checks ;

d Passenger pre-landing briefing ;

e Selection of landing field ;

f Landing, dragging and deflation ;

g ATC compliance *( if applicable ) ;*

h Actions after flight.

***Section 5.*** *ABNORMAL and EMERGENCY PROCEDURES*

a Simulated fire on the ground and in the air ;

b Simulated pilot light and burner failures ;

c Other abnormal and emergency procedures as outlined in the appropriate flight manual ;

d Oral questions ;

e ) The skill test contents and sections set out in this paragraph should be used for the skill test for the issue of a LAPL ( B ) *( gas balloon )* and a BPL *( gas balloon )* :

***Section 1.*** *PRE - FLIGHT OPERATIONS, INFLATION and TAKE - OFF*

Use of checklist, airmanship, control of balloon by external visual reference, look-out procedures, etc... apply in all sections.

a Pre-flight documentation, flight planning, NOTAM and weather briefing ;

b Balloon inspection and servicing ;

c Load calculation ;

d Crowd control, crew and passenger briefings ;

e Assembly and layout ;

f Inflation and pre-take-off procedures ;

g Take-off ;

h ATC compliance *( if applicable ).*

***Section 2.***  *GENERAL AIRWORK*

a Climb to level flight ;

b Level flight ;

c Descent to level flight ;

d Operating at low level ;

e ATC compliance *( if applicable ).*

***Section 3.*** *EN - ROUTE PROCEDURES*

a Dead reckoning and map reading ;

b Marking positions and time ;

c Orientation and airspace structure ;

d Maintenance of altitude ;

e Ballast management ;

f Communication with retrieve crew ;

g ATC compliance.

***Section 4.*** *APPROACH and LANDING PROCEDURES*

a Approach from low level, missed approach and fly on ;

b Approach from high level, missed approach and fly on ;

c Pre-landing checks ;

d Passenger pre-landing briefing ;

e Selection of landing field ;

f Landing, dragging and deflation ;

g ATC compliance *( if applicable ) ;*

h Actions after flight.

***Section 5.*** *ABNORMAL and EMERGENCY PROCEDURES*

a Simulated closed appendix during take-off and climb ;

b Simulated parachute or valve failure ;

c Other abnormal and emergency procedures as outlined in the appropriate flight manual ;

d Oral questions ;

***AMC 1.* FCL. 110. A LAPL ( A ) - Experience Requirements and Crediting**

*FLIGHT INSTRUCTION for the LAPL ( A )*

*a ) Entry to Training :*

Before being accepted for training an applicant should be informed that the appropriate medical certificate must be obtained before solo flying is permitted.

*b ) Flight Instruction :*

1 ) The LAPL (A) flight instruction syllabus should take into account the principles of threat and error management and also cover :

( i ) pre-flight operations, including mass and balance determination, aircraft inspection and servicing ;

( ii ) aerodrome and traffic pattern operations, collision avoidance precautions and procedures ;

( iii ) control of the aircraft by external visual reference ;

( iv ) flight at critically low air speeds, recognition of, and recovery from, incipient and full stalls ;

( v ) flight at critically high air speeds, recognition of, and recovery from, spiral dive ;

( vi ) normal and crosswind take-offs and landings ;

( vii ) maximum performance *( short field and obstacle clearance )* take- offs, short-field landings ;

( viii ) cross-country flying using visual reference, dead reckoning and radio navigation aids ;

( ix ) emergency operations, including simulated aeroplane equipment malfunctions ;

( x ) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures and communication procedures.

(2) Before allowing the applicant to undertake his / her first solo flight, the FI should ensure that the applicant can operate the required systems and equipment.

*c ) Syllabus of Flight Instruction :*

1 ) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide ; therefore the demonstrations and practices need not necessarily be given in the order listed. The actual order and content will depend upon the following interrelated factors :

( i ) the applicant’s progress and ability ;

( ii ) the weather conditions affecting the flight ;

( iii ) the flight time available ;

( iv ) instructional technique considerations ;

( v ) the local operating environment ;

( vi ) applicability of the exercises to the aeroplane or TMG type.

2 ) Each of the exercises involves the need for the applicant to be aware of the needs of good airmanship and look-out, which should be emphasized at all times :

( i ) **Exercise 1 a** : *Familiarization with the aeroplane or TMG* :

( A ) characteristics of the aeroplane or TMG ;

( B ) cockpit layout;

( C ) systems ;

( D ) checklists, drills and controls.

( ii **) Exercise 1 b** : *Emergency Drills* :

( A ) action if fire on the ground and in the air ;

( B ) engine cabin and electrical system fire ;

( C ) systems failure ;

( D ) escape drills, location and use of emergency equipment and exits.

( iii ) **Exercise 2** : *Preparation for and Action after Flight :*

( A ) flight authorization and aeroplane or TMG acceptance ;

( B ) serviceability documents ;

( C ) equipment required, maps, etc.. ;

( D ) external checks ;

( E ) internal checks ;

( F ) harness, seat or rudder panel adjustments ;

( G ) starting and warm-up checks ;

( H ) power checks ;

( I ) running down system checks and switching off the engine ;

( J ) parking, security and picketing ( for example tie down ) ;

( K ) completion of authorization sheet and serviceability documents.

( iv ) **Exercise 3** : *Air Experience : Flight Exercise.*

( v ) **Exercise 4** : *Effects of Controls :*

( A ) primary effects when laterally level and when banked ;

( B ) further effects of aileron and rudder ;

( C ) effects of :

( a ) air speed ;

( b ) slipstream ;

( c ) power ;

( d ) trimming controls ;

( e ) flaps ;

( f ) other controls, as applicable.

( D ) operation of :

( a ) mixture control ;

( b ) carburettor heat ;

( c ) cabin heating or ventilation.

( vi ) **Exercise 5 a :** *Taxiing :*

( A ) pre - taxi checks ;

( B ) starting, control of speed and stopping ;

( C ) engine handling ;

( D ) control of direction and turning ;

( E ) turning in confined spaces ;

( F ) parking area procedure and precautions ;

( G ) effects of wind and use of flying controls ;

( H ) effects of ground surface ;

( I ) freedom of rudder movement ;

( J ) marshalling signals ;

( K ) instrument checks ;

( L ) air traffic control procedures.

( vii ) **Exercise 5 b :** *Emergencies : brake and steering failure.*

( viii ) **Exercise 6 :** *Straight and level :*

( A ) at normal cruising power, attaining and maintaining straight and level flight ;

( B ) flight at critically high air speeds ;

( C ) demonstration of inherent stability ;

( D ) control in pitch, including use of trim ;

( E ) lateral level, direction and balance, trim ;

( F ) at selected air speeds *( use of power ) ;*

( G ) during speed and configuration changes ;

( H ) use of instruments for precision.

( ix ) **Exercise 7 :** *Climbing :*

( A ) entry, maintaining the normal and max rate climb, leveling off ;

( B ) leveling off at selected altitudes ;

( C ) en-route climb ( cruise climb ) ;

( D ) climbing with flap down ;

( E ) recovery to normal climb ;

( F ) maximum angle of climb ;

( G ) use of instruments for precision.

( x ) **Exercise 8 :** *Descending :*

( A ) entry, maintaining and leveling off ;

( B ) leveling off at selected altitudes ;

( C ) glide, powered and cruise descent *( including effect of power and air speed ) ;*

( D ) side slipping ( on suitable types ) ;

( E ) use of instruments for precision flight.

( xi ) **Exercise 9 :** *Turning :*

( A ) entry and maintaining medium level turns ;

( B ) resuming straight flight ;

( C ) faults in the turn *( in correct pitch, bank and balance ) ;*

( D ) climbing turns ;

( E ) descending turns ;

( F ) slipping turns *( for suitable types ) ;*

( G ) turns onto selected headings, use of gyro heading indicator and compass ;

( H ) use of instruments for precision.

( xii ) **Exercise 10 a :** *Slow Flight :*

***Note :*** *the objective is to improve the student’s ability to recognize inadvertent flight at critically low speeds and provide practice in maintaining the aeroplane or TMG in balance while returning to normal air speed.*

( A ) safety checks ;

( B ) introduction to slow flight ;

( C ) controlled flight down to critically slow air speed ;

( D ) application of full power with correct attitude and balance to achieve normal climb

speed.

( xiii ) **Exercise 10 b** : *Stalling :*

( A ) safety checks ;

( B ) symptoms ;

( C ) recognition ;

( D ) clean stall and recovery without power and with power ;

( E ) recovery when a wing drops ;

( F ) approach to stall in the approach and in the landing configurations, with and without power and recovery at the incipient stage.

( xiv ) **Exercise 11 :** *Spin Avoidance :*

( A ) safety checks ;

( B ) stalling and recovery at the incipient spin stage *( stall with excessive wing drop, about 45 ° ) ;*

( C ) instructor induced distractions during the stall.

( xv ) **Exercise 12 :** *Take - off and Climb to Downwind Position :*

( A ) pre-take-off checks ;

( B ) into wind take-off ;

( C ) safeguarding the nose wheel *( if applicable ) ;*

( D ) crosswind take-off ;

( E ) drills during and after take-off ;

( F ) short take-off and soft field procedure or techniques including performance calculations;

( G ) noise abatement procedures.

( xvi ) **Exercise 13 :** *Circuit, Approach and Landing :*

( A ) circuit procedures, downwind and base leg ;

( B ) powered approach and landing ;

( C ) safeguarding the nose wheel *( if applicable ) ;*

( D ) effect of wind on approach and touchdown speeds and use of flaps ;

( E ) crosswind approach and landing ;

( F ) glide approach and landing ;

( G ) short landing and soft field procedures or techniques ;

( H ) flapless approach and landing ;

( I ) wheel landing *( tail wheel aeroplanes )* ;

( J ) missed approach and Go-around ;

( K ) noise abatement procedures.

( xvii ) **Exercise 12 / 13 :** *Emergencies :*

( A ) abandoned take-off ;

( B ) engine failure after take-off ;

( C ) miss-landing and go-around ;

( D ) missed approach.

***Note :*** *in the interests of safety, it will be necessary for pilots trained on nose wheel aeroplanes or TMGs to undergo dual conversion training before flying tail wheel aeroplanes or TMGs, and vice versa.*

( xviii ) **Exercise 14 :** *First Solo :*

( A ) instructor’s briefing including limitations ;

( B ) use of required equipment ;

( C ) observation of flight and de-briefing by instructor.

***Note :*** *during flights immediately following the solo circuit consolidation the following should be revised :*

( A ) procedures for leaving and rejoining the circuit ;

( B ) the local area, restrictions, map reading ;

( C ) use of radio aids for homing ;

( D ) turns using magnetic compass, compass errors.

( xix ) **Exercise 15 :** *Advanced Turning :*

( A ) steep turns ( 45 ° ), level and descending ;

( B ) stalling in the turn and recovery ;

( C ) recoveries from unusual attitudes, including spiral dives.

( xx ) **Exercise 16 :** *Forced Landing without Power :*

(A ) forced landing procedure ;

( B ) choice of landing area, provision for change of plan ;

( C ) gliding distance ;

( D ) descent plan ;

( E ) key positions ;

( F ) engine cooling ;

( G ) engine failure checks ;

( H ) use of radio ;

( I ) base leg ;

( J ) final approach ;

( K ) landing ;

( L ) actions after landing.

( xxi ) **Exercise 17 :** *Precautionary Landing :*

( A ) full procedure away from aerodrome to break-off height ;

( B ) occasions necessitating a precautionary landing ;

( C ) in-flight conditions ;

( D ) landing area selection :

( a ) normal aerodrome ;

( b ) disused aerodrome ;

( c ) ordinary field.

( E ) circuit and approach ;

( F ) actions after landing.

( xxii ) **Exercise 18 a :**  *Navigation :*

( A ) flight planning :

( a ) weather forecast and actuals ;

( b ) map selection and preparation :

( 1 ) choice of route ;

( 2 ) airspace structure;

( 3 ) safety altitudes.

( c ) calculations :

( 1 ) magnetic heading(s) and time(s) en-route ;

( 2 ) fuel consumption ;

( 3 ) mass and balance ;

( 4 ) mass and performance.

( d ) flight information :

(1) NOTAMs, etc.;

( 2 ) radio frequencies ;

( 3 ) selection of alternate aerodromes.

( e ) aeroplane or TMG documentation ;

( f ) notification of the flight :

( 1 ) pre-flight administrative procedures ;

( 2 ) flight plan form.

( B ) departure :

( a ) organization of cockpit workload ;

( b ) departure procedures :

( 1 ) altimeter settings ;

( 2 ) ATC liaison in regulated airspace ;

( 3 ) setting heading procedure ;

( 4 ) noting of ETAs.

( c ) maintenance of altitude and heading ;

( d ) revisions of ETA and heading ;

( e ) log keeping ;

( f ) use of radio ;

( g ) minimum weather conditions for continuation of flight ;

( h ) in-flight decisions ;

( i ) transiting controlled or regulated airspace ;

( j ) diversion procedures ;

( k ) uncertainty of position procedure ;

( l ) lost procedure.

( C ) arrival and aerodrome joining procedure:

( a ) ATC liaison in regulated airspace;

( b ) altimeter setting ;

( c ) entering the traffic pattern ;

( d ) circuit procedures ;

( e ) parking ;

( f ) security of aeroplane or TMG ;

( g ) refueling ;

( h ) closing of flight plan, if appropriate ;

( i ) post-flight administrative procedures.

( xxiii ) **Exercise 18 b :** *Navigation Problems at Lower Levels and in Reduced Visibility :*

( A ) actions before descending ;

( B ) hazards *( for example obstacles, and terrain ) ;*

(C) difficulties of map reading;

( D ) effects of wind and turbulence ;

( E ) vertical situational awareness *( avoidance of controlled flight into terrain ) ;*

( F ) avoidance of noise sensitive areas ;

( G ) joining the circuit ;

( H ) bad weather circuit and landing.

( xxiv ) **Exercise 18 c :** *Radio Navigation ( basics )* *:*

( A ) use of GNSS or VOR / ADF :

( a ) selection of waypoints or stations ;

( b ) to or from indications and orientation ;

( c ) error messages.

( B ) use of VHF / DF :

( a ) availability, AIP and frequencies ;

( b ) R / T procedures and ATC liaison ;

( c ) obtaining a QDM and homing.

( C ) use of en-route or terminal radar :

( a ) availability and AIP ;

( b ) procedures and ATC liaison ;

( c ) pilot’s responsibilities ;

( d ) secondary surveillance radar :

( 1 ) transponders ;

( 2 ) code selection ;

( 3 ) interrogation and reply.

( xxv ) **Exercise 19 :** *Stopping and Restarting the Engine ( in the case of TMGs only ) :*

( A ) engine cooling ;

( B ) switching-off procedure ;

( C ) restarting of the engine.

***AMC 2.* FCL. 110. A LAPL ( A ) - Experience Requirements and Crediting**

*CREDITING : PRE - ENTRY FLIGHT TEST*

The pre-entry flight test referred to in FCL. 110. A ( c ) should cover the total content of the syllabus of flight instruction for the issuance of the LAPL ( A ), in accordance with AMC 1. FCL. 110. A.

***GM 1.* FCL. 135. A ; FCL. 135. H**

*DIFFERENCES and FAMILIARISATION TRAINING*

***a )*** Differences Training requires the acquisition of additional knowledge and training on an appropriate training device or the aircraft ;

***b )*** Familiarization Training requires the acquisition of additional knowledge.

***AMC 1.* FCL. 110. H LAPL ( H ) - Experience Requirements and Crediting**

*FLIGHT INSTRUCTION for the LAPL ( H )*

*a ) Entry to Training :*

Before being accepted for training an applicant should be informed that the appropriate medical certificate must be obtained before solo flying is permitted.

*b ) Flight Instruction :*

1 ) The LAPL ( H ) flight instruction syllabus should take into account the principles of threat and error management and also cover :

( i ) pre-flight operations, including mass and balance determination, helicopter inspection and servicing ;

( ii ) aerodrome and traffic pattern operations, collision avoidance precautions and procedures ;

( iii ) control of the helicopter by external visual reference ;

( iv ) take-offs, landings, hovering, look-out turns and normal transitions from and to the hover ;

( v ) emergency procedures, basic autorotations, simulated engine failure and ground resonance recovery if relevant to type ;

( vi ) sideways and backwards flight and turns on the spot ;

( vii ) incipient vortex ring recognition and recovery ;

( viii ) touchdown autorotations, simulated engine-off landings, practice forced landings. Simulated equipment malfunctions and emergency procedures relating to malfunctions of engines, controls, electrical and hydraulic circuits ;

( ix ) steep turns ;

( x ) transitions, quick stops, out of wind manoeuvres, sloping ground landings and take-offs ;

( xi ) limited power and confined area operations including selection of and operations to and from unprepared sites ;

( xii ) cross-country flying by using visual reference, dead reckoning and, where available and radio navigation aids ;

( xiii ) operations to and from aerodromes ; compliance with air traffic services procedures and communication procedures.

2 ) Before allowing the applicant to undertake his / her first solo flight, the FI should ensure that the applicant can operate the required systems and equipment.

*c ) Syllabus of Flight Instruction :*

1 ) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide ; therefore the demonstrations and practices need not necessarily be given in the order listed. The actual order and content will depend upon the following interrelated factors :

( i ) the applicant’s progress and ability ;

( ii ) the weather conditions affecting the flight ;

( iii ) the flight time available ;

( iv ) instructional technique considerations ;

( v ) the local operating environment ;

( vi ) applicability of the exercises to the helicopter type.

2 ) Each of the exercises involves the need for the applicant to be aware of the needs of good airmanship and look-out, which should be emphasized at all times.

**( i ) Exercise 1 a :** *Familiarization with the Helicopter :*

(A) characteristics of the helicopter, external features ;

(B) cockpit layout ;

(C) systems ;

(D) checklists, procedures, controls.

**( ii ) Exercise 1 b :** *Emergency Procedures :*

(A) action if fire on the ground and in the air ;

(B) engine, cabin and electrical system fire ;

(C) systems failures ;

(D) escape drills, location and use of emergency equipment and exits.

**( iii ) Exercise 2 :** *Preparation for and Action after Flight :*

(A) flight authorization and helicopter acceptance ;

(B) serviceability documents ;

(C) equipment required, maps, etc... ;

(D) external checks ;

(E) internal checks ;

(F) seat, harness and flight controls adjustments ;

(G) starting and warm-up checks clutch engagement and starting rotors ;

(H) power checks ;

(I) running down system checks and switching off the engine ;

(J) parking, security and picketing ;

(K) completion of authorization sheet and serviceability documents.

**( iv ) Exercise 3 :** *Air Experience :*

(A) to introduce the student to rotary wing flight ;

(B) flight exercise.

**( v ) Exercise 4 :** *Effects of Controls :*

(A) function of flight controls, primary and secondary effect ;

(B) effect of air speed ;

(C) effect of power changes *( torque ) ;*

(D) effect of yaw *( sideslip ) ;*

(E) effect of disc loading *( bank and flare ) ;*

(F) effect on controls of selecting hydraulics on / off ;

(G) effect of control friction ;

(H) instruments ;

(I) use of carburettor heat or anti-icing control.

**( vi ) Exercise 5 :** *Power and Attitude Changes :*

(A) relationship between cyclic control position, disc attitude, fuselage attitude and air speed ;

(B) flap-back ;

(C) power required diagram in relation to air speed ;

(D) power and air speed changes in level flight ;

(E) use of instruments for precision ;

(F) engine and air speed limitations.

**( vii ) Exercise 6 a :** *Straight and Level :*

(A) at normal cruising power, attaining and maintaining straight and level flight ;

(B) control in pitch, including use of control friction or trim ;

(C) maintaining direction and balance, *( ball or yaw-string use ) ;*

(D) setting power for selected air speeds and speed changes ;

(E) use of instruments for precision.

**( viii ) Exercise 6 b :** *Climbing :*

(A) optimum climb speed, best angle or rate of climb from power required diagram ;

(B) initiation, maintaining the normal and maximum rate of climb, leveling off ;

(C) leveling off at selected altitudes or heights ;

(D) use of instruments for precision.

**( ix ) Exercise 6 c :** *Descending :*

(A) optimum descent speed and best angle or rate of descent from power required diagram ;

(B) initiation, maintaining and leveling off ;

(C) leveling off at selected altitudes or heights ;

(D) descent *( including effect of power and air speed ) ;*

(E) use of instruments for precision.

**( x ) Exercise 6 d :** *Turning :*

(A) initiation and maintaining medium level turns ;

(B) resuming straight flight ;

(C) altitude, bank and coordination ;

(D) climbing and descending turns and effect on rate of climb or descent ;

(E) turns onto selected headings, use of gyro heading indicator and compass ;

(F) use of instruments for precision.

**( xi ) Exercise 7 :** *Basic Autorotation :*

(A) safety checks, verbal warning and look-out ;

(B) entry, development and characteristics ;

(C) control of air speed and RRPM, rotor and engine limitations ;

(D) effect of AUM, IAS, disc loading, G-forces and density altitude ;

(E) re-engagement and go-around procedures *( throttle over- ride or ERPM control ) ;*

(F) vortex condition during recovery ;

(G) gentle and medium turns in autorotation ;

(H) demonstration of variable flare simulated engine off landing.

**( xii ) Exercise 8 a :** *Hovering :*

(A) demonstrate hover IGE, importance of wind effect and attitude, ground cushion, stability

in the hover, effects of over controlling ;

(B) student holding cyclic stick only ;

(C) student handling collective lever *( and throttle )* only ;

(D) student handling collective lever, *( throttle )* and pedals ;

(E) student handling all controls ;

(F) demonstration of ground effect ;

(G) demonstration of wind effect ;

(H) demonstrate gentle forward running touchdown ;

(I) specific hazards, for example snow, dust and litter.

**( xiii ) Exercise 8 b :** *Hover Taxiing and Spot Turns :*

(A) revise hovering ;

(B) precise ground speed and height control ;

(C) effect of wind direction on helicopter attitude and control margin ;

(D) control and coordination during spot turns ;

(E) carefully introduce gentle forward running touchdown.

**( xiv ) Exercise 8 c :** *Hovering and Taxiing Emergencies :*

(A) revise hovering and gentle forward running touchdown, explain *( demonstrate where*

*applicable )*  effect of hydraulics failure in the hover ;

(B) demonstrate simulated engine failure in the hover and hover taxi ;

(C) demonstrate dangers of mishandling and over-pitching.

**( xv ) Exercise 9 :** *Take - off and Landing :*

(A) pre-take-off checks or drills ;

(B) look-out ;

(C) lifting to hover ;

(D) after take-off checks ;

(E) danger of horizontal movement near ground ;

(F) danger of mishandling and over-pitching ;

(G) landing *( without sideways or backwards movement ) ;*

(H) after landing checks or drills ;

(I) take-off and landing crosswind and downwind.

**( xvi ) Exercise 10 :** *Transitions from Hover to Climb and Approach to Hover :*

(A) look-out ;

(B) revise take-off and landing ;

(C) ground effect, translational lift and its effects ;

(D) flap-back and its effects ;

(E) effect of wind speed and direction during transitions from or to the hover ;

(F) the constant angle approach ;

(G) demonstration of variable flare simulated engine off landing.

**( xvii ) Exercise 11 a :** *Circuit, Approach and Landing :*

(A) revise transitions from hover to climb and approach to hover;

(B) circuit procedures, downwind and base leg ;

(C) approach and landing with power ;

(D) pre-landing checks ;

(E) effect of wind on approach and IGE hover ;

(F) crosswind approach and landing ;

(G) go-around ;

(H) noise abatement procedures.

**( xviii ) Exercise 11 b :** *Steep and Limited Power Approaches and Landings :*

(A) revise the constant angle approach ;

(B) the steep approach *( explain danger of high sink rate and low air speed ) ;*

(C) limited power approach *( explain danger of high speed at touch down ) ;*

(D) use of the ground effect ;

(E) variable flare simulated engine off landing.

**( xix ) Exercise 11 c :** *Emergency Procedures :*

(A) abandoned take-off ;

(B) missed approach and go-around ;

(C) hydraulic off landing *( if applicable ) ;*

(D) tail rotor control or tail rotor drive failure ( briefing only ) ;

(E) simulated emergencies in the circuit to include ;

(F) hydraulics failure ;

(G) simulated engine failure on take-off, crosswind, downwind and base leg ;

(H) governor failure.

**( xx ) Exercise 12 :** *First Solo :*

(A) instructor’s briefing, observation of flight and debriefing ;

(B) warn of change of attitude from reduced and laterally displaced weight ;

(C) warn of low tail, low skid or wheel during hover and landing ;

(D) warn of dangers of loss of RRPM and over-pitching ;

(E) pre-take-off checks ;

(F) into wind take-off ;

(G) procedures during and after take-off ;

(H) normal circuit, approaches and landings ;

(I) action if an emergency.

**( xxi ) Exercise 13 :** *Sideways and Backwards Hover manoeuvring :*

(A) manoeuvring sideways flight heading into wind ;

(B) manoeuvring backwards flight heading into wind ;

(C) combination of sideways and backwards manoeuvring ;

(D) manoeuvring sideways and backwards, heading out of wind ;

(E) stability and weather cocking ;

(F) recovery from backwards manoeuvring, ( pitch nose down ) ;

(G) groundspeed limitations for sideways and backwards manoeuvring.

**( xxii ) Exercise 14 :** *Spot Turns :*

(A) revise hovering into wind and downwind ;

(B) turn on spot through 360º :

(a) around pilots position ;

(b) around tail rotor ;

(c) around helicopter geometric centre ;

(d) square and safe visibility clearing turn.

(C) rotor RPM control, torque effect, cyclic limiting stops due to CG position and wind

speed and direction.

**( xxiii ) Exercise 15 :** *Hover OGE and Vortex Ring :*

(A) establishing hover OGE ;

(B) drift, height or power control ;

(C) demonstration of incipient stage of vortex ring, recognition and recovery *( from a safe*

*altitude ) ;*

(D) loss of tail rotor effectiveness.

**( xxiv ) Exercise 16 :** *Simulated EOL :*

(A) the effect of weight, disc loading, density attitude and RRPM decay ;

(B) revise basic autorotation entry ;

(C) optimum use of cyclic and collective to control speed or RRPM ;

(D) variable flare simulated EOL ;

(E) demonstrate constant attitude simulated EOL ;

(F) demonstrate simulated EOL from hover or hover taxi ;

(G) demonstrate simulated EOL from transition and low level.

**( xxv ) Exercise 17 :** *Advanced Autorotation :*

(A) over a selected point at various height and speed ;

(B) revise basic autorotation : note ground distance covered ;

(C) range autorotation ;

(D) low speed autorotation ;

(E) constant attitude autorotation *( terminate at safe altitude ) ;*

(F) “ S “ turns ;

(G) turns through 180° and 360° ;

(H) effects on angles of descent, IAS, RRPM and effect of AUM.

**( xxvi ) Exercise 18 :** *Practice Forced Landings :*

(A) procedure and choice of the forced landing area ;

(B) forced landing checks and crash action ;

(C) re-engagement and go-around procedures.

**( xxvii ) Exercise 19 :** *Steep Turns :*

(A) steep *( level )* turns *( 30° bank )* ;

(B) maximum rate turns *( 45° bank, if possible ) ;*

(C) steep autorotative turns ;

(D) faults in the turn : balance, attitude, bank and coordination ;

(E) RRPM control and disc loading ;

(F) vibration and control feedback ;

(G) effect of wind at low level.

**( xxviii ) Exercise 20 :** *Transitions :*

(A) revise ground effect, translational lift and flap-back ;

(B) maintaining constant height, *( 20 – 30 ft AGL ) :*

(C) transition from hover to minimum 50 knots IAS and back to hover ;

(D) demonstrate effect of wind.

**( xxix ) Exercise 21 :** *Quick Stops :*

(A) use of power and controls ;

(B) effect of wind ;

(C) quick stops into wind ;

(D) quick stops from crosswind and downwind terminating into wind ;

(E) danger of vortex ring ;

(F) danger of high disc loading.

**( xxx ) Exercise 22 a :** *Navigation :*

(A) Flight planning :

(a) weather forecast and actual ;

(b) map selection and preparation and use :

(1) choice of route ;

(2) controlled airspace, danger and prohibited areas ;

(3) safety altitudes and noise abatement considerations.

(c) calculations :

(1) magnetic heading(s) and time(s) en-route ;

(2) fuel consumption ;

(3) mass and balance.

(d) flight information :

(1) NOTAMs, etc.. ;

(2) radio frequencies ;

(3) selection of alternate landing sites.

(e) helicopter documentation ;

(f) notification of the flight :

(1) pre-flight administrative procedures ;

(2) flight plan form ( where appropriate ).

(B) Departure :

(a) organization of cockpit workload ;

(b) departure procedures :

(1) altimeter settings ;

(2) ATC liaison in regulated airspace ;

(3) setting heading procedure ;

(4) noting of ETAs.

(c) maintenance of height or altitude and heading ;

(d) revisions of ETA and heading :

(1) 10° line, double track, track error and closing angle ;

(2) 1 in 60 rule ;

(3) amending an ETA.

(e) log keeping ;

(f) use of radio ;

(g) minimum weather conditions for continuation of flight ;

(h) in-flight decisions ;

(i) transiting controlled or regulated airspace ;

(j) uncertainty of position procedure ;

(k) lost procedure.

(C) Arrival and aerodrome joining procedure :

(a) ATC liaison in regulated airspace ;

(b) altimeter setting ;

(c) entering the traffic pattern ;

(d) circuit procedures ;

(e) parking ;

(f) security of helicopter ;

(g) refueling ;

(h) closing of flight plan, *( if appropriate ) ;*

(i) post-flight administrative procedures.

**( xxxi ) Exercise 22 b :** *Navigation Problems at Low Heights and in Reduced Visibility :*

(A) actions before descending ;

(B) hazards *( for example obstacles and other aircraft ) ;*

(C) difficulties of map reading ;

(D) effects of wind and turbulence ;

(E) avoidance of noise sensitive areas ;

(F) joining the circuit ;

(G) bad weather circuit and landing ;

(H) appropriate procedures and choice of landing area for precautionary landings.

**( xxxii ) Exercise 22 c :** *Radio Navigation ( basics ) :*

(A) Use of GNNS or VOR / NDB :

(a) selection of waypoints ;

(b) to or from indications or orientation ;

(c) error messages.

(B) Use of VHF / DF :

(a) availability, AIP and frequencies ;

(b) R / T procedures and ATC liaison ;

(c) obtaining a QDM and homing.

(C) Use of en-route or terminal radar :

(a) availability and AIP ;

(b) procedures and ATC liaison ;

(c) pilot’s responsibilities ;

(d) secondary surveillance radar :

(1) transponders ;

(2) code selection ;

(3) interrogation and reply.

**( xxxiii ) Exercise 23 :** *Advanced Take-off, Landings and Transitions :*

(A) landing and take-off out of wind *( performance reduction ) ;*

(B) ground effect, translational lift and directional stability variation when out of wind ;

(C) downwind transitions ;

(D) vertical take-off over obstacles ;

(E) reconnaissance of landing site ;

(F) running landing ;

(G) zero speed landing ;

(H) crosswind and downwind landings ;

(I) steep approach ;

(J) go-around.

**( xxxiv ) Exercise 24 :** *Sloping Ground :*

(A) limitations and assessing slope angle ;

(B) wind and slope relationship : blade and control stops ;

(C) effect of CG when on slope ;

(D) ground effect on slope and power required ;

(E) right skid up slope ;

(F) left skid up slope ;

(G) nose up slope ;

(H) avoidance of dynamic roll over, dangers soft ground and sideways movement on

touchdown ;

(I) danger of striking main or tail rotor by harsh control movement near ground.

**( xxxv ) Exercise 25 :** *Limited Power :*

(A) take-off power check ;

(B) vertical take-off over obstacles ;

(C) in-flight power check ;

(D) running landing ;

(E) zero speed landing ;

(F) approach to low hover

(G) approach to hover ;

(H) approach to hover OGE ;

(I) steep approach ;

(J) go-around.

**( xxxvi ) Exercise 26 :** *Confined Areas :*

(A) landing capability and performance assessment ;

(B) locating landing site and assessing wind speed and direction ;

(C) reconnaissance of landing site ;

(D) select markers ;

(E) select direction and type of approach ;

(F) circuit ;

(G) approach to committed point and go-around ;

(H) approach ;

(I) clearing turn ;

(J) landing ;

(K) power check and performance assessment in and OGE ;

(L) normal take-off to best angle of climb speed ;

(M) vertical take-off from hover.

***AMC 2.* FCL. 110. H LAPL ( H ) - Experience Requirements and Crediting**

*CREDITING : PRE - ENTRY FLIGHT TEST*

The pre-entry flight test referred to in FCL.110.H ( b ) should cover the total content of the syllabus of flight instruction for the issuance of the LAPL ( H ), in accordance with AMC 1. FCL. 110. H.

***AMC 1.* FCL. 110. S LAPL ( S ) - Experience Requirements and Crediting**

*CREDITING : PRE - ENTRY FLIGHT TEST*

The pre-entry flight test referred to in FCL.110. S ( c ) should cover the total content of the syllabus of flight instruction for the issuance of the LAPL ( S ), in accordance with AMC 1. FCL. 110. S and FCL. 210. S.

***AMC 1.* FCL. 110. S ; FCL. 210. S - Experience Requirements and Crediting**

*FLIGHT INSTRUCTION for the LAPL ( S ) and the SPL*

*a ) Entry to Training :*

Before being accepted for training an applicant should be informed that the appropriate medical certificate must be obtained before solo flying is permitted ;

*b ) Flight Instruction :*

1) The LAPL (S) and SPL flight instruction syllabus should take into account the principles of threat and error management and also cover :

( i ) pre-flight operations, including verifying mass and balance, aircraft inspection and servicing, airspace and weather briefing ;

( ii ) aerodrome and traffic pattern operations, collision avoidance precautions and procedures ;

( iii ) control of the aircraft by external visual reference ;

( iv ) flight at high angle of attack *( critically low air speeds ),* recognition of, and recovery from, incipient and full stalls and spins ;

( v ) flight at critically high air speeds, recognition of, and recovery from spiral dive ;

( vi ) normal and crosswind take-offs in respect with the different launch methods ;

( vii ) normal and crosswind landings ;

( viii ) short field landings and out-landings : field selection, circuit and landing hazards and

precautions ;

( ix ) cross-country flying using visual reference, dead reckoning and available navigation aids;

( x ) soaring techniques as appropriate to site conditions ;

( xi ) emergency actions ;

( xii ) compliance with air traffic services procedures and communication procedures.

(2) Before allowing the applicant to undertake his / her first solo flight, the FI should ensure that the applicant can operate the required systems and equipment ;

*c ) Syllabus of Flight Instruction :*

1 ) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide ; therefore the demonstrations and practices need not necessarily be given in the order listed. The actual order and content will depend upon the following interrelated factors :

( i ) the applicant’s progress and ability ;

( ii ) the weather conditions affecting the flight ;

( iii ) the flight time available ;

( iv ) instructional technique considerations ;

( v ) the local operating environment ;

( vi ) applicability of the exercises to the sailplane type.

2 ) At the discretion of the instructors some of the exercises may be combined and some other exercises may be done in several flights ;

3 ) At least the exercises 1 to 12 have to be completed before the first solo flight ;

4 ) Each of the exercises involves the need for the applicant to be aware of the needs for good airmanship and look-out, which should be emphasized at all times :

**( i ) Exercise 1 :**  *Familiarization with the Sailplane :*

(A) characteristics of the sailplane ;

(B) cockpit layout : instruments and equipment ;

(C) light controls : stick, pedals, airbrakes, flaps and trim ;

(D) cable release and undercarriage ;

(E) checklists, drills and controls.

**( ii ) Exercise 2 :** *Procedures if Emergencies :*

(A) use of safety equipment *( parachute ) ;*

(B) action if system failures ;

(C) bail-out procedures.

**( iii ) Exercise 3 :** *Preparation for Flight :*

(A) pre-flight briefings ;

(B) required documents on board ;

(C) equipment required for the intended flight ;

(D) ground handling, movements, tow out, parking and security ;

(E) pre-flight external and internal checks ;

(F) verifying in-limits mass and balance ;

(G) harness, seat or rudder panel adjustments ;

(H) passenger handling ;

(I) pre-launch checks.

**( iv ) Exercise 4 :** *Initial Air Experience :*

(A) area familiarization ;

(B) look-out procedures.

**( v ) Exercise 5 :** *Effects of Controls :*

(A) look-out procedures ;

(B) use of visual references ;

(C) primary effects when laterally level and when banked ;

(D) reference attitude and effect of elevator ;

(E) relationship between attitude and speed ;

(F) effects of :

(a) flaps *( if available ) ;*

(b) airbrakes.

**( vi ) Exercise 6 :** *Coordinated Rolling to and from moderate Angles of Bank :*

(A) look-out procedures ;

(B) further effects of aileron *( adverse yaw )* and rudder *( roll ) ;*

(C) coordination ;

(D) rolling to and from moderate angles of bank and return to straight flight.

**( vii ) Exercise 7 :** *Straight Flying :*

(A) look-out procedures ;

(B) maintaining straight flight ;

(C) flight at critically high air speeds ;

(D) demonstration of inherent pitch stability ;

(E) control in pitch, including use of trim ;

(F) lateral level, direction and balance and trim ;

(G) air speed : instrument monitoring and control.

**( viii ) Exercise 8 :** *Turning :*

(A) look-out procedures ;

(B) demonstration and correction of adverse yaw ;

(C) entry to turn *( medium level turns ) ;*

(D) stabilizing turns ;

(E) exiting turns ;

(F) faults in the turn *( slipping and skidding ) ;*

(G) turns on to selected headings and use of compass ;

(H) use of instruments *( ball indicator or slip string )* for precision.

**( ix ) Exercise 9 a :** *Slow Flight :*

***Note :*** *the objective is to improve the student’s ability to recognize inadvertent flight at critically low speeds ( high angle of attack ) and to provide practice in maintaining the sailplane in balance while returning to normal attitude ( speed ).*

(A) safety checks ;

(B) introduction to characteristics of slow flight ;

(C) controlled flight down to critically high angle of attack *( slow air speed ).*

**( x ) Exercise 9 b :** *Stalling :*

(A) safety checks ;

(B) pre-stall symptoms, recognition and recovery ;

(C) stall symptoms, recognition and recovery ;

(D) recovery when a wing drops ;

(E) approach to stall in the approach and in the landing configurations ;

(F) recognition and recovery from accelerated stalls.

**( xi ) Exercise 10 :** *Spin Recognition and Spin Avoidance :*

(A) safety checks ;

(B) stalling and recovery at the incipient spin stage *( stall with excessive wing drop, about*

*45° ) ;*

(C) entry into fully developed spins ( if suitable training aircraft available ) ;

(D) recognition of full spins *( if suitable training aircraft available ) ;*

(E) standard spin recovery *( if suitable training aircraft available ) ;*

(F) instructor induced distractions during the spin entry *( if suitable training aircraft*

*available ).*

***Note :*** *consideration of manoeuvre limitations and the need to refer to the sailplane manual and mass and balance calculations. If no suitable training aircraft is available to demonstrate the fully developed spin, all the aspects related to these training items have to be covered by specific theoretical instruction.*

**( xii ) Exercise 11 :** *Take - off or Launch Methods :*

At least one launch method must be taught containing all the subjects below.

**( xiii ) Exercise 11 a :** *Winch Launch* :

(A) signals or communication before and during launch ;

(B) use of the launching equipment ;

(C) pre-take-off checks ;

(D) into wind take-off ;

(E) crosswind take-off ;

(F) optimum profile of winch launch and limitations ;

(G) release procedures ;

(H) launch failure procedures.

**( xiv ) Exercise 11 b :** *Aero Tow :*

(A) signals or communication before and during launch ;

(B) use of the launch equipment ;

(C) pre-take-off checks ;

(D) into wind take-off ;

(E) crosswind take-off ;

(F) on tow : straight flight, turning and slip stream ;

(G) out of position in tow and recovery ;

(H) descending on tow *( towing aircraft and sailplane ) ;*

(I) release procedures ;

(J) launch failure and abandonment.

**( xv ) Exercise 11 c :**  *Self - launch :*

(A) engine extending and retraction procedures ;

(B) engine starting and safety precautions ;

(C) pre-take-off checks ;

(D) noise abatement procedures ;

(E) checks during and after take-off ;

(F) into wind take-off ;

(G) crosswind take-off ;

(H) power failures and procedures ;

(I) abandoned take-off ;

(J) maximum performance *( short field and obstacle clearance )* take-off ;

(K) short take-off and soft field procedure or techniques and performance calculations.

**( xvi ) Exercise 11 d :**  *Car Launch :*

(A) signals before and during launch ;

(B) use of the launch equipment ;

(C) pre-take-off checks ;

(D) into wind take-off ;

(E) crosswind take-off ;

(F) optimum launch profile and limitations ;

(G) release procedures ;

(H) launch failure procedures.

**( xvii ) Exercise 11 e :** *Bungee Launch :*

(A) signals before and during launch ;

(B) use of the launch equipment ;

(C) pre-take-off checks ;

(D) into wind take-off ;

**( xviii ) Exercise 12 :** *Circuit, Approach and Landing :*

(A) procedures for rejoining the circuit ;

(B) collision avoidance, look-out techniques and procedures ;

(C) pre-landing checks : circuit procedures, downwind and base leg ;

(D) effect of wind on approach and touchdown speeds ;

(E) use of flaps *( if applicable ) ;*

(F) visualization of an aiming point ;

(G) approach control and use of airbrakes ;

(H) normal and crosswind approach and landing ;

(I) short landing procedures or techniques.

**( xix ) Exercise 13 :** *First Solo :*

(A) instructor’s briefing including limitations ;

(B) awareness of local area and restrictions ;

(C) use of required equipment ;

(D) observation of flight and debriefing by instructor.

**( xx ) Exercise 14 :**  *Advanced Turning :*

(A) steep turns *( 45° ) ;*

(B) stalling and spin avoidance in the turn and recovery ;

(C) recoveries from unusual attitudes, including spiral dives.

**( xxi ) Exercise 15 :** *Soaring Techniques :*

At least one of the three soaring techniques must b e taught containing all subjects below.

**( xxii ) Exercise 15 a :** *Thermalling :*

(A) look-out procedures ;

(B) detection and recognition of thermals ;

(C) use of audio soaring instruments ;

(D) joining a thermal and giving way ;

(E) flying in close proximity to other sailplanes ;

(F) centring in thermals ;

(G) leaving thermals.

**( xxiii ) Exercise 15 b :**  *Ridge Flying :*

(A) look-out procedures ;

(B) practical application of ridge flying rules ;

(C) optimization of flight path ;

(D) speed control.

**( xxiv ) Exercise 15 C :** *Wave Flying :*

(A) look-out procedures ;

(B) wave access techniques ;

(C) speed limitations with increasing height ;

(D) use of oxygen.

**( xxv ) Exercise 16 :** *Out - Landings :*

(A) gliding range ;

(B) restart procedures *( only for self-launching and self- sustaining sailplanes ) ;*

(C) selection of landing area ;

(D) circuit judgment and key positions ;

(E) circuit and approach procedures ;

(F) actions after landing.

**( xxvi ) Exercise 17 :** *Cross - Country Flying :*

If the required cross-country flight will be conducted as a solo cross-country flight, all the subjects below must be taught before.

**( xxvii ) Exercise 17 a :**  *Flight Planning :*

(A) weather forecast and actual ;

(B) NOTAMs and airspace considerations ;

(C) map selection and preparation ;

(D) route planning ;

(E) radio frequencies *( if applicable ) ;*

(F) pre-flight administrative procedure ;

(G) flight plan where required ;

(H) mass and performance ;

(I) alternate aerodromes and landing areas ;

(J) safety altitudes.

**( xxviii ) Exercise 17 b :** *In - flight Navigation :*

(A) maintaining track and re-routing considerations ;

(B) use of radio and phraseology *( if applicable ) ;*

(C) in-flight planning ;

(D) procedures for transiting regulated airspace or ATC liaison where required ;

(E) uncertainty of position procedure ;

(F) lost procedure ;

(G) use of additional equipment where required ;

(H) joining, arrival and circuit procedures at remote aerodrome.

**( xix ) Exercise 17 c :** *Cross - Country Techniques :*

(A) look-out procedures ;

(B) maximizing potential cross-country performance ;

(C) risk reduction and threat reaction.

***AMC 1.* FCL. 135. S ; FCL. 205. S ( a )**

*EXTENSION of PRIVILEGES to TMG : LAPL ( S ) and SPL*

*a )* The aim of the flight training is to qualify LAPL ( S ) or SPL holders to exercise the privileges of the licence on a TMG ;

*b )* The ATO should issue a certificate of satisfactory completion of the training ;

*c ) Theoretical Knowledge :*

The theoretical knowledge syllabus should cover the revision or explanation of :

1 ) Principles of flight :

( i ) operating limitations ( addition TMG ) ;

( ii ) propellers ;

( iii ) flight mechanics.

2 ) Operational procedures for TMG :

( i ) special operational procedures and hazards ;

( ii ) emergency procedures.

3 ) Flight performance and planning :

( i ) mass and balance considerations ;

( ii ) loading ;

( iii ) CG calculation ;

( iv ) load and trim sheet ;

( v ) performance of TMGs ;

( vi ) flight planning for VFR flights ;

( vii ) fuel planning ;

( viii ) pre-flight preparation ;

( ix ) ICAO flight plan ;

( x ) flight monitoring and in-flight re-planning.

4 ) Aircraft general knowledge :

( i ) system designs, loads, stresses, maintenance ;

( ii ) airframe ;

( iii ) landing gear, wheels, tyres, brakes ;

( iv ) fuel system ;

( v ) electrics ;

( vi ) piston engines ;

( vii ) propellers ;

( viii ) instrument and indication systems.

5 ) Navigation :

( i ) dead reckoning navigation *( addition powered flying elements ) ;*

( ii ) in-flight navigation *( addition powered flying elements ) ;*

( iii ) basic radio propagation theory ;

( iv ) radio aids *( basics ) ;*

( v ) radar *( basics ) ;*

( vi ) GNSS.

*d ) Flight Instruction :*

1 ) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide ; therefore the demonstrations and practices need not necessarily be given in the order listed ;

2 ) The flying exercises should cover the revision or explanation of the following exercises :

**( i ) Exercise 1 :** *Familiarization with the TMG :*

(A) characteristics of the TMG ;

(B) cockpit layout ;

(C) systems ;

(D) checklists, drills and controls.

**( ii ) Exercise 1 e :** *Emergency Drills :*

(A) action if fire on the ground and in the air ;

(B) engine cabin and electrical system fire ;

(C) systems failure ;

(D) escape drills, location and use of emergency equipment and exits.

**( iii ) Exercise 2 :** *Preparation for and Action after Flight :*

(A) serviceability documents ;

(B) equipment required, maps, etc.. ;

(C) external checks ;

(D) internal checks ;

(E) harness and seat or rudder panel adjustments ;

(F) starting and warm-up checks ;

(G) power checks ;

(H) running down system checks and switching off the engine ;

(I) parking, security and picketing ( for example tie down ) ;

(J) completion of authorization sheet and serviceability documents.

**( iv ) Exercise 3 :** *Taxiing :*

(A) pre-taxi checks ;

(B) starting, control of speed and stopping ;

(C) engine handling ;

(D) control of direction and turning ;

(E) turning in confined spaces ;

(F) parking area procedure and precautions ;

(G) effects of wind and use of flying controls ;

(H) effects of ground surface ;

(I) freedom of rudder movement ;

(J) marshalling signals ;

(K) instrument checks ;

(L) air traffic control procedures *( if applicable ).*

**( v ) Exercise 3 e :** *Emergencies : Brake and Steering Failure.*

**( vi ) Exercise 4 :** *Straight and Level :*

(A) at normal cruising power, attaining and maintaining straight and level flight ;

(B) flight at critically high air speeds ;

(C) demonstration of inherent stability ;

(D) control in pitch, including use of trim ;

(E) lateral level, direction and balance and trim ;

(F) at selected air speeds *( use of power ) ;*

(G) during speed and configuration changes ;

(H) use of instruments for precision.

**( vii ) Exercise 5 :** *Climbing :*

(A) entry, maintaining the normal and max rate climb and leveling off ;

(B) leveling off at selected altitudes ;

(C) en-route climb *( cruise climb ) ;*

(D) climbing with flap down ;

(E) recovery to normal climb ;

(F) maximum angle of climb ;

(G) use of instruments for precision.

**( viii ) Exercise 6 :** *Descending :*

(A) entry, maintaining and leveling off ;

(B) leveling off at selected altitudes ;

(C) glide, powered and cruise descent *( including effect of power and air speed ) ;*

(D) side slipping *( on suitable types ) ;*

(E) use of instruments for precision flight.

**( ix ) Exercise 7 :** *Turning :*

(A) entry and maintaining medium level turns ;

(B) resuming straight flight ;

(C) faults in the turn *( incorrect pitch, bank and balance ) ;*

(D) climbing turns ;

(E) descending turns ;

(F) slipping turns *( on suitable types ) ;*

(G) turns onto selected headings, use of gyro heading indicator or compass ;

(H) use of instruments for precision.

**( x ) Exercise 8 a :** *Slow Flight :*

***Note :*** *the objective is to improve the pilot’s ability to recognize inadvertent flight at critically low speeds and provide practice in maintaining the TMG in balance while returning to normal air speed.*

(A) safety checks ;

(B) introduction to slow flight ;

(C) controlled flight down to critically slow air speed ;

(D) application of full power with correct attitude and balance to achieve normal climb speed.

**( xi ) Exercise 8 b :** *Stalling :*

(A) airmanship ;

(B) safety checks ;

(C) symptoms ;

(D) recognition ;

(E) clean stall and recovery without power and with power ;

(F) recovery when a wing drops ;

(G) approach to stall in the approach and in the landing configurations, with and without

power, recovery at the incipient stage.

**( xii ) Exercise 9 :** *Take - off and Climb to Downwind Position :*

(A) pre-take-off checks ;

(B) into wind take-off ;

(C) safeguarding the nose wheel *( if applicable ) ;*

(D) crosswind take-off ;

(E) drills during and after take-off ;

(F) short take-off and soft field procedure or techniques including performance calculations ;

(G) noise abatement procedures.

**( xiii ) Exercise 10 :** *Circuit, Approach and Landing :*

(A) circuit procedures, downwind and base leg ;

(B) powered approach and landing ;

(C) safeguarding the nose wheel *( if applicable ) ;*

(D) effect of wind on approach and touchdown speeds ;

(E) use of airbrakes, flaps, slats or spoilers ;

(F) crosswind approach and landing ;

(G) glide approach and landing *( engine stopped ) ;*

(H) short landing and soft field procedures or techniques ;

(I) flapless approach and landing *( if applicable ) ;*

(J) wheel landing *( tail wheel aeroplanes ) ;*

(K) missed approach and go-around ;

(L) noise abatement procedures.

**( xiv ) Exercise 9 / 10 e :** *Emergencies :*

(A) abandoned take-off ;

(B) engine failure after take-off ;

(C) mislanding and go-around ;

(D) missed approach.

***Note :*** *in the interests of safety it will be necessary for pilots trained on nose wheel TMGs to undergo dual conversion training before flying tail wheel TMGs, and vice versa.*

**( xv ) Exercise 11 :** *Advanced Turning :*

(A) steep turns ( 45 ° ), level and descending ;

(B) stalling in the turn and recovery ;

(C) recoveries from unusual attitudes, including spiral dives.

**( xvi ) Exercise 12 :** *Stopping and Restarting the Engine :*

(A) engine cooling procedures ;

(B) switching off procedure in-flight ;

(C) sailplane operating procedures ;

(D) restarting procedure.

**( xvii ) Exercise 13 :** *Forced Landing without Power :*

(A) forced landing procedure ;

(B) choice of landing area, provision for change of plan ;

(C) gliding distance ;

(D) descent plan ;

(E) key positions ;

(F) engine failure checks ;

(G) use of radio ;

(H) base leg ;

(I) final approach ;

(J) landing ;

(K) actions after landing.

**( xviii ) Exercise 14 :** *Precautionary Landing :*

(A) full procedure away from aerodrome to break-off height ;

(B) occasions necessitating ;

(C) in-flight conditions ;

(D) landing area selection :

(a) normal aerodrome ;

(b) disused aerodrome ;

(c) ordinary field.

(E) circuit and approach ;

(F) actions after landing.

**( xix ) Exercise 15 a :** *Navigation*

(A) Flight planning :

(a) weather forecast and actuals ;

(b) map selection and preparation :

(1) choice of route ;

(2) airspace structure ;

(3) safety altitudes.

(c) calculations :

(1) magnetic heading(s) and time(s) en-route ;

(2) fuel consumption ;

(3) mass and balance ;

(4) mass and performance.

(d) flight information :

(1) NOTAMs, etc.. ;

(2) radio frequencies ;

(3) selection of alternate aerodromes.

(e) TMG documentation ;

(f) notification of the flight :

(1) pre-flight administrative procedures;

(2) flight plan form.

(B) Departure :

(a) organization of cockpit workload ;

(b) departure procedures :

(1) altimeter settings ;

(2) ATC liaison in regulated airspace ;

(3) setting heading procedure ;

(4) noting of ETAs.

(C) En-route :

(a) maintenance of altitude and heading ;

(b) revisions of ETA and heading ;

(c) log keeping ;

(d) use of radio or compliance with ATC procedures ;

(e) minimum weather conditions for continuation of flight ;

(f) in-flight decisions ;

(g) transiting controlled or regulated airspace ;

(h) diversion procedures ;

(i) uncertainty of position procedure ;

(j) lost procedure.

(D) Arrival, aerodrome joining procedure :

(a) ATC liaison in regulated airspace ;

(b) altimeter setting;

(c) entering the traffic pattern ;

(d) circuit procedures ;

(e) parking ;

(f) security of TMG ;

(g) refueling ;

(h) closing of flight plan, if appropriate ;

(i) post-flight administrative procedures.

**( xx ) Exercise 15 b :** *Navigation Problems at Lower Levels and in Reduced Visibility :*

(A) actions before descending ;

(B) hazards *( for example obstacles and terrain ) ;*

(C) difficulties of map reading ;

(D) effects of wind and turbulence ;

(E) vertical situational awareness *( avoidance of controlled flight into terrain ) ;*

(F) avoidance of noise sensitive areas ;

(G) joining the circuit ;

(H) bad weather circuit and landing.

**( xxi ) Exercise 15 c :**  *Radio Navigation ( basics ) :*

(A) Use of GNSS or VOR / NDB ;

(a) selection of waypoints ;

(b) to or from indications or orientation ;

(c) error messages.

(B) Use of VHF / DF :

(a) availability, AIP and frequencies ;

(b) R / T procedures and ATC liaison ;

(c) obtaining a QDM and homing.

(C) Use of en-route or terminal radar :

(a) availability and AIP ;

(b) procedures and ATC liaison ;

(c) pilot’s responsibilities ;

(d) secondary surveillance radar ;

(1) transponders ;

(2) code selection ;

(3) interrogation and reply.

***AMC 1.* FCL. 110. B LAPL ( B ) - Experience Requirements and Crediting**

*CREDITING : PRE - ENTRY FLIGHT TEST*

The pre-entry flight test referred to in FCL.110. B ( b ) should cover the total content of the syllabus of flight instruction for the issuance of the LAPL ( B ), in accordance with AMC 1. FCL. 110. B and FCL. 210. B.

***AMC 1.* FCL. 110. B ; FCL. 210. B - Experience Requirements and Crediting**

*FLIGHT INSTRUCTION for the LAPL ( B ) and FLIGHT INSTRUCTION for the BPL*

*a ) Entry to Training :*

Before being accepted for training an applicant should be informed that the appropriate medical certificate must be obtained before solo flying is permitted ;

*b ) Flight Instruction :*

1 ) The LAPL ( B ) or BPL flight instruction syllabus should take into account the principles of threat and error management and also cover :

( i ) pre-flight operations, including load calculations, balloon inspection and servicing ;

( ii ) crew and passenger briefings ;

( iii ) inflation and crowd control ;

( iv ) control of the balloon by external visual reference ;

( v ) take-off in different wind conditions ;

( vi ) approach from low and high level ;

( vii ) landings in different surface wind conditions ;

( viii ) cross-country flying using visual reference and dead reckoning ;

( ix ) emergency operations, including simulated balloon equipment malfunctions ;

( x ) compliance with air traffic services procedures and communication procedures ;

( xi ) avoidance of nature protection areas, landowner relations.

2 ) Before allowing the applicant to undertake his / her first solo flight, the FI should ensure that the applicant can operate the required systems and equipment.

*c ) Syllabus of Flight Instruction (* ***Hot - air Balloon*** *) :*

1 ) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide ; therefore the demonstrations and practices need not necessarily be given in the order listed. The actual order and content will depend upon the following interrelated factors :

( i ) the applicant’s progress and ability ;

( ii ) the weather conditions affecting the flight ;

( iii ) the flight time available ;

( iv ) instructional technique considerations ;

( v ) the local operating environment ;

( vi ) applicability of the exercises to the balloon type.

2 ) Each of the exercises involves the need for the applicant to be aware of the needs of good airmanship and look-out, which should be emphasized at all times.

**( i ) Exercise 1 :** *Familiarization with the Balloon :*

(A) characteristics of the balloon ;

(B) the components or systems ;

(C) re-fuelling of the cylinders ;

(D) instruments and equipment ;

(E) use of checklist(s) and procedures.

**( ii ) Exercise 2 :** *Preparation for Flight :*

(A) documentation and equipment ;

(B) weather forecast and actuals ;

(C) flight planning :

(a) NOTAMs ;

(b) airspace structure ;

(c) sensitive areas *( for example nature protection areas ) ;*

(d) expected track and distance ;

(e) pre-flight picture ;

(f) possible landing fields.

(D) launch field :

(a) permission ;

(b) field selection ;

(c) behaviour ;

(d) adjacent fields.

(E) load calculations.

**( iii ) Exercise 3 :** *Crew and Passenger Briefing :*

(A) clothing ;

(B) crew briefing ;

(C) passenger briefing.

**( iv ) Exercise 4 :** *Assembly and Layout :*

(A) crowd control ;

(B) rigging envelope, basket and burner ;

(C) burner test ;

(D) use of restraint line ;

(E) pre-inflation checks.

**( v ) Exercise 5 :** *Inflation :*

(A) crowd control ;

(B) cold inflation ;

(C) use of the inflation fan ;

(D) hot inflation.

**( vi ) Exercise 6 :** *Take - off in Different Wind Conditions :*

(A) pre take-off checks and briefings ;

(B) heating for controlled climb ;

(C) ‘hands off and hands on ' procedure for ground crew ;

(D) assessment of lift ;

(E) use of quick release ;

(F) assessment of wind and obstacles ;

(G) take-off in wind without shelter obstacles ;

(H) preparation for false lift.

**( vii ) Exercise 7 :** *Climb to Level Flight :*

(A) climbing with a predetermined rate of climb ;

(B) look-out procedures ;

(C) effect on envelope temperature ;

(D) maximum rate of climb according to manufacturer’s flight manual ;

(E) leveling off at selected altitude.

**( viii ) Exercise 8 :** *Level Flight :*

(A) maintaining level flight by :

(a) use of instruments only ;

(b) use of visual references only ;

(c) all available means.

(B) use of parachute and turning vents *( if applicable ).*

**( ix ) Exercise 9 :** *Descent to Level Flight :*

(A) descent with a predetermined rate of descent ;

(B) fast descent ;

(C) look-out procedures ;

(D) maximum rate of descent according to manufacturer’s flight manual ;

(E) use of parachute ;

(F) parachute stall ;

(G) cold descent ;

(H) leveling off at selected altitude.

**( x ) Exercise 10 :** *Emergencies – Systems :*

(A) pilot light failure ;

(B) burner failure, valve leaks, flame out and re-light ;

(C) gas leaks ;

(D) envelope over temperature ;

(E) envelope damage in-flight ;

(F) parachute or rapid deflation system failure.

**( xi ) Exercise 10 b :** *Other Emergencies :*

(A) fire extinguisher ;

(B) fire on ground ;

(C) fire in the air ;

(D) contact with electrical power lines ;

(E) obstacle avoidance ;

(F) escape drills, location and use of emergency equipment.

**( xii ) Exercise 11 :** *Navigation :*

(A) maps selection ;

(B) plotting expected track ;

(C) marking positions and time ;

(D) calculation of distance, speed and fuel consumption ;

(E) ceiling limitations *( ATC, weather and envelope temperature ) ;*

(F) planning ahead ;

(G) monitoring of weather development and acting so ;

(H) monitoring of fuel consumption and envelope temperature ;

(I) ATC liaison *( if applicable ) ;*

(J) communication with retrieve crew ;

(K) use of GNSS *( if applicable ).*

**( xiii ) Exercise 12 :** *Fuel Management :*

(A) cylinder arrangement and burner systems ;

(B) pilot light supply *( vapour or liquid ) ;*

(C) use of master cylinders *( if applicable ) ;*

(D) fuel requirement and expected fuel consumption ;

(E) fuel state and pressure ;

(F) fuel reserves ;

(G) cylinder contents gauge and change procedure ;

(H) use of cylinder manifolds.

**( xiv ) Exercise 13 :** *Approach from Low Level :*

(A) pre-landing checks ;

(B) passenger pre-landing briefing ;

(C) selection of field ;

(D) use of burner and parachute ;

(E) look-out procedures ;

(F) missed approach and fly on.

**( xv ) Exercise 14 :** *Approach from High Level :*

(A) pre-landing checks ;

(B) passenger pre-landing briefing ;

(C) selection of field ;

(D) rate of descent ;

(E) use of burner and parachute ;

(F) look-out procedures ;

(G) missed approach and fly on.

**( xvi ) Exercise 15 :** *Operating at Low Level :*

(A) use of burner, whisper burner and parachute ;

(B) look-out procedures ;

(C) avoidance of low level obstacles ;

(D) avoidance of protection areas ;

(E) landowner relations.

**( xvii ) Exercise 16 :** *Landing in Different Wind Conditions :*

(A) pre-landing checks ;

(B) passenger pre-landing briefing ;

(C) selection of field ;

(D) turbulences *( in the case of landings with high wind speed only ) ;*

(E) use of burner and pilot lights ;

(F) use of parachute and turning vents *( if applicable ) ;*

(G) look-out procedures ;

(H) dragging and deflation ;

(I) landowner relations ;

(J) airmanship.

**( xviii ) Exercise 17 :** *First Solo :*

(A) supervised flight preparation ;

(B) instructor’s briefing, observation of flight and de-briefing.

*d ) Syllabus of Flight Instruction (* ***Gas Balloon*** *) :*

1 ) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide ; therefore the demonstrations and practices need not necessarily be given in the order listed. The actual order and content will depend upon the following interrelated factors :

( i ) the applicant’s progress and ability ;

( ii ) the weather conditions affecting the flight ;

( iii ) the flight time available ;

( iv ) instructional technique considerations ;

( v ) the local operating environment ;

( vi ) applicability of the exercises to the balloon type.

2 ) Each of the exercises involves the need for the pilot - under - training to be aware of the needs of good airmanship and look-out, which should be emphasized at all times.

**( i ) Exercise 1 :** *Familiarization with the Balloon :*

(A) characteristics of the balloon ;

(B) the components or systems ;

(C) instruments and equipment ;

(D) use of checklist(s) and procedures.

**( ii ) Exercise 2 :** *Preparation for Flight :*

(A) documentation and equipment ;

(B) weather forecast and actuals ;

(C) flight planning :

(a) NOTAMs ;

(b) airspace structure ;

(c) sensitive areas *( for example nature protection areas ) ;*

(d) expected track and distance ;

(e) pre-flight picture ;

(f) possible landing fields.

(D) launch field :

(a) permission ;

(b) behaviour ;

(c) adjacent fields.

(E) load calculations.

**( iii ) Exercise 3 :** *Crew and Passenger Briefing :*

(A) clothing ;

(B) crew briefing ;

(C) passenger briefing.

**( iv ) Exercise 4 :** *Assembly and Layout :*

(A) crowd control ;

(B) rigging envelope and basket *( balloon with net )* ;

(C) rigging envelope and basket *( net-less balloon )* ;

(D) ballast check ;

**( v ) Exercise 5 :** *Inflation :*

(A) crowd control ;

(B) inflation procedure according to manufacturer’s flight manual ;

(C) avoiding electrostatic discharge.

(D) hot inflation.

**( vi ) Exercise 6 :** *Take - off in Different Wind Conditions :*

(A) pre take-off checks and briefings ;

(B) prepare for controlled climb ;

(C) ‘ hands off and hands on ' procedure for ground crew ;

(D) assessment of wind and obstacles ;

(E) preparation for false lift.

**( vii ) Exercise 7 :** *Climb to Level Flight :*

(A) climbing with a predetermined rate of climb ;

(B) look-out procedures ;

(C) maximum rate of climb according to manufacturer’s flight manual ;

(D) leveling off at selected altitude.

**( viii ) Exercise 8 :** *Level Flight :*

(A) maintaining level flight by :

(a) use of instruments only ;

(b) use of visual references only ;

(c) all available means.

(B) use of parachute or valve.

**( ix ) Exercise 9 :** *Descent to Level Flight :*

(A) descent with a predetermined rate of descent ;

(B) fast descent ;

(C) look-out procedures ;

(D) maximum rate of descent according to manufacturer’s flight manual ;

(E) use of parachute or valve ;

(F) parachute stall ;

(G) cold descent ;

(H) leveling off at selected altitude.

**( x ) Exercise 10 :** *Emergencies :*

(A) closed appendix during take-off and climb ;

(B) envelope damage in-flight ;

(C) parachute or valve failure ;

(D) contact with electrical power lines ;

(E) obstacle avoidance ;

(F) escape drills, location and use of emergency equipment.

**( xii ) Exercise 11 :** *Navigation :*

(A) maps selection ;

(B) plotting expected track ;

(C) marking positions and time ;

(D) calculation of distance, speed and ballast consumption ;

(E) ceiling limitations *( ATC, weather and ballast ) ;*

(F) planning ahead ;

(G) monitoring of weather development and acting so ;

(H) monitoring of ballast consumption ;

(I) ATC liaison *( if applicable ) ;*

(J) communication with retrieve crew ;

(K) use of GNSS *( if applicable ).*

**( xiii ) Exercise 12 :** *Ballast Management :*

(A) minimum ballast ;

(B) arrangement and securing of ballast ;

(C) ballast requirement and expected ballast consumption ;

(D) ballast reserves.

**( xiv ) Exercise 13 :** *Approach from Low Level :*

(A) pre-landing checks ;

(B) passenger pre-landing briefing ;

(C) selection of field ;

(D) use of ballast and parachute or valve ;

(E) use of trail rope *( if applicable ) ;*

(F) look-out procedures ;

(G) missed approach and fly on.

**( xv ) Exercise 14 :** *Approach from High Level :*

(A) pre-landing checks ;

(B) passenger pre-landing briefing ;

(C) selection of field ;

(D) rate of descent ;

(E) use of ballast and parachute or valve ;

(F) use of trail rope *( if applicable ) ;*

(G) look-out procedures ;

(H) missed approach and fly on.

**( xvi ) Exercise 15 :** *Operating at Low Level :*

(A) use of ballast and parachute or valve ;

(B) look-out procedures ;

(C) avoidance of low level obstacles ;

(D) avoidance of protection areas ;

(E) landowner relations.

**( xvii ) Exercise 16 :** *Landing in Different Wind Conditions :*

(A) pre-landing checks ;

(B) passenger pre-landing briefing ;

(C) selection of field ;

(D) turbulences *( in the case of landings with high wind speed only ) ;*

(E) use of ballast and parachute or valve ;

(F) look-out procedures ;

(G) use of rip panel ;

(H) dragging ;

(I) deflation ;

(J) avoiding electrostatic discharge ;

(K) landowner relations.

**( xviii ) Exercise 17 :** *First Solo :*

***Note :*** *the exercises 1 to 16 have to be completed and the student must have achieved a safe and competent level before the first solo flight takes place.*

(A) supervised flight preparation ;

(B) instructor’s briefing, observation of flight and de-briefing.

***AMC 1.* FCL. 130. B ; FCL. 220. B**

*FLIGHT INSTRUCTION for the EXTENSION of PRIVILEGES to TETHERED FLIGHTS*

a ) The aim of the flight instruction is to qualify LAPL ( B ) or BPL holders to perform tethered flights ;

b ) The flying exercise should cover the following training items :

1 ) Ground preparations ;

2 ) Weather suitability ;

3 ) Tether points :

( i ) upwind ;

( ii ) downwind.

4 ) Tether ropes ( three point system ) ;

5 ) Maximum all-up-weight limitation ;

6 ) Crowd control ;

7 ) Pre take-off checks and briefings ;

8 ) Heating for controlled lift off ;

9 ) “ Hands off and hands on “ procedure for ground crew ;

10 ) Assessment of lift ;

11 ) Assessment of wind and obstacles ;

12 ) Take-off and controlled climb *( at least up to 60 ft – 20 m ).*

***AMC 1.* FCL. 135. B ; FCL. 225. B**

*THEORETICAL KNOWLEDGE INSTRUCTION for the EXTENSION to another BALLOON CLASS : LAPL ( B ) and BPL*

a ) The aim of the flight instruction is to qualify LAPL ( B ) or BPL holders to exercise the privileges on a different class of balloons ;

b ) The following classes are recognized :

1 ) Hot - air Balloons ;

2 ) Gas Balloons ;

3 ) Hot - air Airships.

c ) The ATO should issue a certificate of satisfactory completion of the instruction to licence endorsement ;

d ) Theoretical knowledge :

The theoretical knowledge syllabus should cover the revision or explanation of :

1 ) principles of flight :

( i ) operating limitations ;

( ii ) loading limitations.

2 ) operational procedures :

( i ) special operational procedures and hazards ;

( ii ) emergency procedures.

3 ) flight performance and planning :

(i) mass considerations ;

( ii ) loading ;

( iii ) performance ( hot-air balloon, gas balloon or hot-air airship ) ;

( iv ) flight planning ;

( v ) fuel planning ;

( vi ) flight monitoring.

4 ) aircraft general knowledge :

( i ) system designs, loads, stresses and maintenance ;

( ii ) envelope ;

( iii ) burner ( only extension to hot-air balloon or airship ) ;

( iv ) fuel cylinders ( except gas balloon ) ;

( v ) basket or gondola ;

( vi ) lifting or burning gas ;

( vii ) ballast ( only gas balloon ) ;

( viii ) engine ( only hot-air airship ) ;

( ix ) instruments and indication systems ;

( x ) emergency equipment.

***AMC 2.* FCL. 135. B ; FCL. 225.**

*FLIGHT INSTRUCTION for the EXTENSION to another BALLOON CLASS :*

*LAPL ( B ) and BPL*

a ) This additional syllabus of flight instruction should be used for the extension of privileges for LAPL ( B ) and BPL - Hot - air Balloon to Hot - air Airship ;

b ) The prerequisite for the extension of privileges to hot-air airships is a valid BPL or LAPL for hot-air balloons because a hot-air airship with a failed engine must be handled in a similar manner as a hot-air balloon. The conversion training has to concentrate therefore on the added complication of the engine, its controls and the different operating limitations of a hot-air airship.

1 ) The numbering of exercises should be used primarily as an exercise reference list and as a broad instructional sequencing guide ; therefore the demonstrations and practices need not necessarily be given in the order listed ;

2 ) The flying exercises should cover the revision or explanation of the following exercises :

**( i ) Exercise 1 :** *Familiarization with the Hot - air Airship :*

(A) characteristics of the hot-air airship ;

(B) the components or systems ;

(C) instruments and equipment ;

(D) use of checklist(s) and procedures.

**( ii ) Exercise 2 :** *Preparation for Flight :*

(A) documentation and equipment ;

(B) weather forecast and actuals ;

(C) flight planning :

(a) NOTAMs ;

(b) airspace structure ;

(c) sensitive areas ;

(d) expected track and distance ;

(e) pre-flight picture ;

(f) possible landing fields.

(D) launch field :

(a) permission ;

(b) behaviour ;

(c) field selection ;

(d) adjacent fields.

(E) load and fuel calculations.

**( iii ) Exercise 3 :**  *Crew and Passenger Briefing :*

(A) clothing ;

(B) crew briefing ;

(C) passenger briefing.

**( iv ) Exercise 4 :** *Assembly and Layout :*

(A) crowd control ;

(B) rigging envelope, gondola, burner and engine ;

(C) burner test ;

(D) pre-inflation checks.

**( v ) Exercise 5 :**  *Inflation :*

(A) crowd control ;

(B) cold inflation :

(a) use of restraint line ;

(b) use of the inflation fan.

(C) hot inflation.

**( vi ) Exercise 6 :** *Engine :*

(A) identification of main parts and controls ;

(B) familiarization with operation and checking of the engine ;

(C) engine checks before take-off.

**( vii ) Exercise 7 :** *Pressurization :*

(A) pressurization fan operation ;

(B) super pressure and balance between pressure and temperature ;

(C) pressure limitations.

**( viii ) Exercise 8 :**  *Take - off :*

(A) before take-off checks and briefings ;

(B) heating for controlled climb ;

(C) procedure for ground crew ;

(D) assessment of wind and obstacles.

**( ix ) Exercise 9 :** *Climb to Level Flight :*

(A) climbing with a predetermined rate of climb ;

(B) effect on envelope temperature and pressure ;

(C) maximum rate of climb according to manufacturer’s flight manual ;

(D) level off at selected altitude.

**( x ) Exercise 10 *:*** *Level Flight :*

(A) maintaining level flight by :

(a) use of instruments only ;

(b) use of visual references only ;

(c) all available means.

(B) maintaining level flight at different air speeds by taking aerodynamic lift into account.

**( xi ) Exercise 11 :** *Descent to Level Flight :*

(A) descent with a predetermined rate of descent ;

(B) maximum rate of descent according to manufacturer’s flight manual ;

(C) leveling off at selected altitude.

**( xii ) Exercise 12 :** *Emergencies - Systems :*

(A) engine failure ;

(B) pressurization failure ;

(C) rudder failure ;

(D) pilot light failure ;

(E) burner failure, valve leaks, flame out and re-light ;

(F) gas leaks ;

(G) envelope over temperature ;

(H) envelope damage in-flight.

**( xiii ) Exercise 12 b :**  *Other Emergencies :*

(A) fire extinguishers ;

(B) fire on ground ;

(C) fire in the air ;

(D) contact with electrical power lines ;

(E) obstacle avoidance ;

(F) escape drills, location and use of emergency equipment.

**( xiv ) Exercise 13 :**  *Navigation :*

(A) map selection and preparation ;

(B) plotting and steering expected track ;

(C) marking positions and time ;

(D) calculation of distance, speed and fuel consumption ;

(E) ceiling limitations *( ATC, weather and envelope temperature ) ;*

(F) planning ahead ;

(G) monitoring of weather development and acting so ;

(H) monitoring of fuel and envelope temperature or pressure ;

(I) ATC liaison *( if applicable ) ;*

(J) communication with ground crew ;

(K) use of GNSS *( if applicable ).*

**( xv ) Exercise 14 :** *Fuel Management :*

(A) engine arrangement and tank system ;

(B) cylinder arrangement and burner systems ;

(C) pilot light supply *( vapour or liquid ) ;*

(D) fuel requirement and expected fuel consumption for engine and burner ;

(E) fuel state and pressure ;

(F) fuel reserves ;

(G) cylinder and petrol tank contents gauge.

**( xvi ) Exercise 15 :** *Approach and Go - around :*

(A) pre-landing checks ;

(B) selection of field into wind ;

(C) use of burner and engine;

(D) look-out procedures ;

(E) missed approach and go-around.

**( xvii ) Exercise 16 :** *Approach with Simulated Engine Failure :*

(A) pre-landing checks ;

(B) selection of field ;

(C) use of burner ;

(D) look-out procedures ;

(E) missed approach and go-around.

**( xviii ) Exercise 17 :** *Operating at Low Level :*

(A) use of burner and engine ;

(B) look-out procedures ;

(C) avoidance of low level obstacles ;

(D) avoidance of sensitive areas *( nature protection areas )* or landowner relations.

**( xix ) Exercise 18 :**  *Steering :*

(A) assessment of wind ;

(B) correcting for wind to steer a given course.

**( xx ) Exercise 19 :** *Final Landing :*

(A) pre-landing checks ;

(B) use of burner and engine ;

(C) look-out ;

(D) deflation ;

(E) landowner relations.

***AMC 3.* FCL. 135. B ; FCL. 225. B**

*CONTENTS of the SKILL TEST for the EXTENSION of a LAPL ( B ) or a*

*BPL to another BALLOON CLASS ( HOT - AIR AIRSHIP )*

a ) The Take-off site should be chosen by the applicant depending on the actual meteorological conditions, the area which has to be overflown and the possible options for suitable landing sites. The applicant should be responsible for the flight planning and should ensure that all equipment and documentation for the execution of the flight are on board ;

b ) An applicant should indicate to the FE the checks and duties carried out.

Checks should be completed in accordance with the flight manual or the authorized checklist for the balloon on which the test is being taken.

During pre-flight preparation for the test the applicant should be required to perform crew and passenger briefings and demonstrate crowd control. The load calculation should be performed by the applicant in compliance with the operations manual or flight manual for the hot - air airship used.

**FLIGHT TEST TOLERANCE**

c ) The applicant should demonstrate the ability to :

1 ) operate the hot-air airship within its limitations ;

2 ) complete all manoeuvres with smoothness and accuracy ;

3 ) exercise good judgment and airmanship ;

4 ) apply aeronautical knowledge ;

5 ) maintain control of the airship at all times in such a manner that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

**CONTENT of the SKILL TEST**

d ) The skill test contents and sections set out in this AMC should be used for the skill test for the issue of a LAPL ( B ) and BPL hot-air airship extension.

|  |  |
| --- | --- |
| **Section 1.** **PRE - FLIGHT OPERATIONS, INFLATION and TAKE - OFF** | |
| *Use of checklist, airmanship, control of hot-air airship by external visual reference,*  *look-out procedures, etc... apply in all sections :* | |
| **a** | Pre-flight documentation, flight planning, NOTAM and weather briefing |
| **b** | Hot-air airship inspection and servicing |
| **c** | Load calculation |
| **d** | Crowd control, crew and passenger briefings |
| **e** | Assembly and layout |
| **f** | Inflation and pre-take-off procedures |
| **g** | Take-off |
| **h** | ATC compliance *( if applicable )* |
| **Section 2.** **GENERAL AIRWORK** | |
| **a** | Climb to level flight |
| **b** | Level flight |
| **c** | Descent to level flight |
| **d** | Operating at low level |
| **e** | ATC compliance *( if applicable )* |
| **Section 3.** **EN - ROUTE PROCEDURES** | |
| **a** | Dead reckoning and map reading |
| **b** | Marking positions and time |
| **c** | Orientation and airspace structure |
| **d** | Plotting and steering expected track |
| **e** | Maintenance of altitude |
| **f** | Fuel management |
| **g** | Communication with ground crew |
| **h** | ATC compliance *( if applicable )* |
| **Section 4.** **APPROACH and LANDING PROCEDURES** | |
| **a** | Approach, missed approach and go-around |
| **b** | Pre-landing checks |
| **c** | Selection of landing field |
| **d** | Landing and deflation |
| **e** | ATC compliance *( if applicable )* |
| **f** | Actions after flight |
| **Section 5.** **ABNORMAL and EMERGENCY PROCEDURES** | |
| *This section may be combined with* ***Sections 1*** *through* ***4*** | |
| **a** | Simulated fire on the ground and in the air |
| **b** | Simulated pilot light -, burner - and engine - failure |
| **c** | Approach with simulated engine failure, missed approach and go- around |
| **d** | Other abnormal and emergency procedures as outlined in the appropriate flight manual |
| **e** | Oral questions |
| **f** |  |
| **g** |  |
| **h** |  |
| **i** |  |

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