

s401 - Personnel Licensing Standards Respecting Flight Crew Licensing

s401.07 Issue and Endorsement of Flight Crew Licences and Ratings

1. Proof of Citizenship

The following documents are acceptable as proof of citizenship:

- a) a Lebanese Identity Card;
- b) a valid passport; or
- c) an aviation personnel licence showing the citizenship of the holder and issued by the state of which the applicant is a citizen, plus a second legal document satisfactory to the Authority.

2. Proof of Age

The following documents are acceptable proof of the age of an applicant for a personnel licence or rating:

- a) a Lebanese Identity Card;
- b) a valid passport; or
- c) an aviation personnel licence showing the citizenship of the holder and issued by the state of which the applicant is a citizen, plus a second legal document satisfactory to the Authority.

3. English Language Proficiency

An applicant shall demonstrate to the satisfaction of the Authority, the ability to use the English language in the following circumstances:

- a) radio telephony relevant to all phases of flight, including emergency situations.
- b) use of all information relevant to the accomplishment of a flight, including
 - i) to be able to read and demonstrate an understanding of technical manuals written in English, such as an Operations Manual, or an Aeroplane Flight Manual,
 - ii) to carry out pre-flight planning, weather information collection, NOTAMs, ATC Flight Plan, etc.
 - iii) to use all aeronautical en-route, departure and approach charts and associated documents written in English.
- c) be able to communicate in English during all phases of flight, including flight preparation.

s401.08 Validation of Foreign Licences

1. Issue of Foreign Licence Validation Certificate.

- a) A Foreign Licence Validation Certificate shall be issued to an applicant who provides the following:
 - i) a foreign licence valid under the laws of a Contracting State and valid for the privileges requested; and
 - ii) a letter requesting issue of the Foreign Licence Validation Certificate and specifying the purpose for which the foreign licence is to be validated.

- b) The Foreign Licence Validation Certificate shall normally be issued for a period of one year from the date of issue and shall clearly indicate that its validity will be dependent on the validity of the foreign licence. A shorter period may be granted if the requirement is of short duration.
2. Purposes For Which Foreign Licence Validation Certificates May Be Issued
- a) for the holder to undergo a flight test;
 - b) for private recreational flying;
 - c) for ferry of an aircraft registered in Lebanon to or from a foreign country;
 - d) for the holder to give training on an aircraft registered in Lebanon to the registered owner, or to Lebanese flight crew employed by the registered owner;
 - e) for the holder to receive training in a Lebanese registered aircraft;
 - f) for operation of aircraft registered in a foreign state under the operating certificate of a Lebanese air operator provided that the privileges are limited to the specific aircraft or type of aircraft being operated;
 - g) for operation of aircraft on Lebanese commercial air services on a short term basis when no qualified Lebanese pilots are available;
 - h) for the operation of aircraft registered in Lebanon on lease to foreign carriers;
 - i) for reasons other than those mentioned above, the Authority is satisfied that it is in the national interest and is not likely to affect aviation safety.

s401.09 Issuance of a Licence Based on a Foreign Licence

1. A licence issued by a foreign state may be converted to a Lebanese licence provided that the Authority is satisfied that the training and testing requirements of the foreign state are equivalent to the Lebanese requirements. The Authority shall periodically review the licensing training and testing requirements and ICAO Oversight Reports, of states from which licence holders may request Lebanese licences.
2. Where the condition in para 1 have been met, the standard for the issue of the Lebanese licence is when the applicant has:
- a) completed, as a flight test, the type or class rating revalidation requirements of this Part, relevant to the privileges of the licence held;
 - b) demonstrated to the satisfaction of the Authority that a knowledge of the relevant parts of the Lebanese Aviation Regulation has been acquired;
 - c) demonstrated a knowledge of English to the standards specified in this Part;
 - d) hold a valid Lebanese medical certificate of the Class appropriate to the licence; and
 - e) complied with the experience requirements for the requested Lebanese licence.
3. A licence issued on the basis of a foreign licence shall have an entry indicating the state upon which the licence is based.

s401.10 Credits Towards Requirements for a Flight Crew Licence or Rating

1. Credits of flight time towards a licence or rating shall be as specified in the standard for each licence or rating. The holder of a pilot licence, when acting as a co-pilot on an aircraft required to be operated with more than one pilot, may be credited not more than 50% of the co-pilot time towards the total flight time required for the issuance of a higher grade of pilot licence.
2. The holder of a pilot licence, when acting as pilot in command under supervision, under a training program as provided for in this Part, shall be entitled to be credited in full with this flight time towards the total flight time required for a higher grade of licence.
3. When an application for an Airline Transport Pilot Licence is based in part on pilot-in-command under supervision flight time, the applicant shall:
 - a) submit a personal log or other reliable record that contains a summary of the pilot-in-command under supervision flight time and the number of takeoffs and landings; and
 - b) enter a notation on the application form showing the portion of pilot-in-command flight time that was done under supervision.

s401.13 Airline Transport Pilot Licence Training Program

1. All air operators using large aeroplanes may institute programs of supervision to allow co-pilots to credit flight time as pilot-in-command time.
2. Air operators using small aeroplanes and air operators using helicopters, may institute a program of supervision referred to in subsection (1) provided that they have received authorization to do so from the Authority, based on the operator's ability to institute such a program in a safe and effective manner.
3. The training program shall be conducted in accordance with the following:
 - a) the operator shall ensure that the supervisory pilots are briefed on these procedures; and
 - b) the pilot-in-command under supervision flight time shall include:
 - A) with the exception of taxiing all the flight functions of a pilot-in-command including flight planning, takeoff, landing, en route flying and approach; and
 - B) a minimum of one takeoff and one landing for each ten hours of flight time.

s401.15 Examination Prerequisites

1. For admission to a written examination required for the issue of a licence or rating an applicant shall have met the medical standards for the issue of the licence or rating and shall produce proof of medical fitness in one of the following forms:
 - a) a Medical Certificate in the appropriate medical class; or
 - b) a Medical Examination Report assessed to the appropriate medical class by the Authority.

2. For admission to a written examination, proof of identification shall be required in the form of a licence or other official document bearing the signature and photograph of the candidate.
3. To be eligible to write the examination required for the issue of a licence or rating, the candidate shall produce the following:
 - a) an applicant for a Private Pilot Licence, or Commercial Pilot Licence shall provide a letter of recommendation from the Flight Training Organization stating that the applicant has completed the ground school instruction, and has reached a sufficient level of knowledge to write the examination;
 - b) an applicant for an Instructor Rating shall provide a letter of recommendation from the applicant's ground training instructor stating that the applicant has completed the ground school instruction, and has reached a sufficient level of knowledge to write the examination;
 - c) in the case of a military applicant, proof of having qualified to pilot wings standard;
 - d) in the case of an applicant holding a licence issued by a contracting state, the recommendation shall not be required provided the applicant is applying for the equivalent Lebanese licence.
4. To be eligible to write the examination required for the issue of a licence or rating, the candidate shall provide proof that the experience and training requirements set out below have been met:
 - a) an applicant for a Private Pilot Licence shall have completed 10 hours flight time in the same category of aircraft;
 - b) an applicant for an Instructor Rating shall have completed fifty percent (50%) of the flight training requirement, and all ground school requirements;
 - c) an applicant for an instrument rating shall have completed a minimum of 20 hours of instrument flight or instrument ground time;
 - d) all other applicants shall have a minimum of fifty percent (50%) of the total flight experience for the issue of the, licence, or rating.

Note: The pass mark for all written examinations under this Sub-part shall be 70% for multiple choice and 60% for essay type exams unless otherwise specified by the Authority.

s401.16 Flight Test Prerequisites

1. Prior to admittance to the flight test for a licence or rating the applicant shall have met the medical standards and hold a valid medical certificate appropriate to the licence or rating for which application is made.
2. For admission to a flight test, proof of identification shall be required in the form of a licence or other official document bearing the signature and photograph of the candidate.
3. Except as stated in paragraphs (d) and (e) below, for admission to a flight test required for the issue of a licence or rating, the candidate shall produce a recommendation, as follows:
 - a) in the case of an applicant for a Private Pilot Licence, a recommendation from a qualified flight instructor certifying that the applicant meets the competency standard for issue of the licence.

- b) in the case of an applicant for a Commercial Pilot Licence, a recommendation from a flight instructor certifying that the applicant meets the competency standard for issue of the Commercial Pilot Licence.
 - c) in the case of an applicant for a rating, a recommendation from the person that provided the training stating that the applicant meets the competency standards for the issue of the rating.
 - d) military applicants who are qualified to pilot wings standard shall not be required to submit the recommendation referred to in (a), (b) and (c) above.
 - e) holders of valid Private and Commercial Pilot Licences issued by a contracting state are not required to have the recommendation referred to in (a) and (b) above, provided that the flight test is for the purpose of obtaining the equivalent Lebanese licence.
4. To be eligible to attempt a flight test required for the issue of a licence or rating:
- a) an applicant for a Private Pilot Licence shall have completed at least 35 hours in the same category of aircraft.
 - b) an applicant for a licence, other than a Private Pilot Licence, shall have completed a minimum of 75% of the total flying experience required for that licence.
 - c) an applicant for an instrument or instructor rating flight test shall have met all the applicable knowledge and experience requirements for the rating prior to the flight test.
 - d) an applicant shall have completed at least 3 hours of the flight training required for the licence or rating within the previous 60 days.

s401.17 Conduct of a Flight Test

1. A person shall be considered to be designated by the Authority to conduct a flight test where:
 - a) the person is the holder of a licence or rating that includes the privileges to conduct the flight test;
 - b) the person is authorized pursuant to the Flight Test Examiner Program or Aircrew Designee Program, to conduct the flight test and meets the following qualifications:
or
 - c) the person is so designated by the Authority.

Type of Flight Test	Minimum Qualifications
1. PPL and Aircraft Class Rating	<ul style="list-style-type: none"> • holds a valid commercial or airline transport pilot licence for the category and class of aircraft; • is qualified to act as PIC of the aircraft; • has not less then 1000 hours flight time as pilot in the category of aircraft; • not less than 100 hours flight time as pilot in the class of aircraft • has not less than 250 hours flight instructor time; and • has not less than 5 hours PIC on the aircraft type.
2. CPL	<ul style="list-style-type: none"> • holds a valid commercial or airline transport pilot licence for the category and class of aircraft; • is qualified to act as PIC of the aircraft;

	<ul style="list-style-type: none"> • has not less than 2000 hours flight time as pilot in the category of aircraft; • has not less then 250 hours flight instructor time; and • has not less than 5 hours PIC on the aircraft type.
3. ATPL	<ul style="list-style-type: none"> • holds a valid airline transport pilot licence for the category and class of aircraft; • is qualified to act as PIC of the aircraft; • has not less than 2000 hours flight time as a pilot including not less than 250 IFR flight time; • has not less than 100 hours PIC of aircraft operated by two crew; and • has not less than 5 hours PIC on the aircraft type.
4. Aeroplane Type Rating	<ul style="list-style-type: none"> • holds a valid commercial or airline transport pilot licence for the category, class and type of aircraft; • is qualified to act as PIC of the aircraft; • has not less then 1500 hours flight time as a pilot of multi-pilot aeroplanes; • has at least 500 hours as PIC of the aircraft type. <p><i>Note The PIC time requirement may be reduced in situations were a new type is introduced into an aircraft fleet.</i></p>
5. Helicopter Type Rating	<ul style="list-style-type: none"> • holds a valid commercial or airline transport pilot licence for the category, class and type of aircraft; • is qualified to act as PIC of the aircraft; • has not less then 1500 hours flight time as a pilot of helicopters, of which at least 500 hours is as PIC; and • has not less than 5 hours PIC on the aircraft type.
6. Other Aircraft Type Rating	<ul style="list-style-type: none"> • holds a valid commercial or airline transport pilot licence for the category, class and type of aircraft; • is qualified to act as a flight instructor of the aircraft. • is qualified to act as PIC of the aircraft; and • has not less than 5 hours PIC on the aircraft type.
7. Instrument Rating	<ul style="list-style-type: none"> • holds a valid commercial or airline transport pilot licence for the category and class of aircraft with an Instrument Rating; and • has not less than 2000 hours flight time as a pilot including not less than 250 IFR flight time.
8. Flight Instructor Rating	<ul style="list-style-type: none"> • holds a commercial or airline transport pilot licence in the category of aircraft with an Instructor Rating; and • has not less than 2000 hours as a pilot of aircraft of the category, including not less then 100 hours flight time instructing applicants for a Flight Instructor Rating.

2. An Examiner serves as an agent of the Authority. The designation of an Examiner shall be valid for not more than three years and may be renewed at the discretion of the Authority.

3. A flight test conducted in an aeroplane or helicopter shall be conducted in accordance with the procedures and test tolerances as specified in Flight Test Examiner Guide. A record of each flight tests conducted in aeroplanes or helicopters shall be submitted to the Authority and shall contain the following information:
 - a) an assessment of the results for each flight test item;
 - b) the overall results; and
 - c) whether or not the candidate successfully completed the flight test.
4. An examiner's designation may be canceled by the Authority for just cause.
5. The Authority may monitor any flight test provided the aircraft can accommodate the additional person.

Note: In the case of an examiner who's appointment is through the Aircrew Designee program, the Air Operator Certificate holder shall be advised of the decision as soon as possible.

s401.18 Failure of a Flight Test

1. Where an applicant has failed a flight test, the applicant shall be provided with a copy of his/her flight test report and informed by the person conducting the flight test of the conditions to be met prior to the next attempt of the flight test, as set out in the Flight Test Examiner Guide.
2. Where an applicant has failed a flight test, prior to attempting a re-test the applicant shall obtain a written recommendation or certification from a person authorized in this Part to recommend or certify the applicant in respect of the licence or rating applied for, stating that the applicant has received the required training or met any other specified conditions and is considered competent to undertake a flight test

s401.25 Student Pilot Licence Requirements

1. The Student Pilot Licence is valid for the aeroplane, helicopter, glider, free balloon and ultra-light aeroplane categories.
2. An applicant for a Student Pilot Licence shall meet the following requirements:
 - a) Citizenship:
 - i) Confirmation of citizenship shall be provided in accordance with subsection s401.07(1).
 - b) Age:
 - i) Confirmation of age shall be provided in accordance with subsection s401.07(2).
 - ii) An applicant shall be a minimum of eighteen years of age.
 - c) Medical Fitness and Validity:
 - i) An applicant for a Student Pilot Licence shall be in possession of one of Class 1 or 2 Medical Certificate.

- ii) The Medical Certificate for a Student Pilot Licence shall be valid for 24 months if the holder is under the age of 40 years and 12 months if the holder is 40 years of age or older.
- d) English Language Proficiency:
An applicant must be proficient in the English language and be able to converse fluently, in that language. Prior to solo flight the instructor shall ensure that the holder of a Student Pilot Licence can communicate effectively and fully understand air traffic control communications.
- e) Knowledge
Prior to solo flight, the Chief Flight Instructor of the Flight Training Organization, or an authorized flight instructor, shall endorse the Student Pilot Licence certifying that the holder has written and successfully passed, a pre-solo exam covering:
 - i) Air law,
 - ii) Air traffic rules and procedures,
 - iii) Communications,
 - iv) Basic aerodynamics applicable to the type of aircraft being used for the training,
 - v) Meteorological phenomena as applicable,
 - vi) Stall recognition and recovery procedures, and
 - vii) Applicable aircraft emergency procedures.
- f) Experience and Skill
The instructor shall be responsible for ensuring that the holder of a student pilot licence has reached a satisfactory standard of experience and skill to complete solo flight before authorizing the first solo flight.

s401.26 Private Pilot Licence-Aeroplanes - Requirements

1. Age - An applicant shall be a minimum of eighteen years of age.
2. Medical Fitness and Validity:
 - a) an applicant shall hold a valid Class 1 or 2 Medical Certificate.
 - b) the medical validity period for the licence holder under 40 years of age is 24 months and for a licence holder 40 years of age or over, is 12 months.
 - c) the licence is maintained by a valid Class 1 or 2 Medical Certificate.
3. Knowledge - An applicant shall have completed an approved course that includes a minimum of 40 hours private pilot ground school that meets a standard equivalent to the ground training syllabus contained in Appendix A, and passed exams specified by the Authority, in:
 - a) Air law,
 - b) Aircraft general knowledge,
 - c) Principles of flight,
 - d) Flight performance and planning,
 - e) Navigation,
 - f) Meteorology,
 - g) Operational procedures,
 - h) Human performance and limitations, and
 - i) Communications.

4. Experience -
- a) An applicant shall have completed a minimum of 40 hours private pilot flight training in aeroplanes, at a certificated Flight Training Organization, in accordance with an approved Flight Training Program. A maximum 5 of the 40 hours may be conducted on an approved aeroplane simulator or flight training device.
 - b) The flight training program shall include a minimum of:
 - i) 15 hours of dual instruction flight time, including
 - a) 3 hours cross-country flight time; and
 - b) 5 hours instrument time, 3 of which may be ground instrument time; and
 - ii) 10 hours solo flight time, including 5 hours cross-country flight time with a flight of a minimum of 150 nautical miles, in the course of which full stop landings at two different aerodromes shall be made.
5. Skill - Within the 12 months preceding the date of application for the licence, an applicant shall have successfully completed a flight test to the standard specified in the Flight Test Examiner Guide.
6. Credits - Holders of pilot licences in another category of aircraft may be granted credit toward the knowledge and experience requirements as follows:.
- a) Knowledge
 - i) An applicant who holds a private or higher type pilot licence for helicopters may, when applying for the issue of Private Pilot Licence - Aeroplanes have the 40 hour ground instruction requirement reduced to 20 hours.
 - b) Experience
 - i) The total flight time must include a minimum of 30 hours in aeroplanes.
 - ii) Where an applicant holds a pilot licence in another aircraft category flight time credits shall be claimed as follows:
 - a) Helicopter
 - (1) a maximum of 10 hours towards the total flight time; and
 - (2) a maximum of 4 hours solo flight time, 2 hours of which shall be credited to solo cross-country flight time.
 - b) Glider
 - (1) A maximum of 5 hours pilot-in-command flight time towards the total flight time.
 - c) Three Axis Ultra-light Aeroplane
 - (1) A maximum of 10 hours pilot-in-command flight time towards the total flight time.

Credits for Military Applicants - Active and retired Lebanese Air Force personnel who have qualified to pilot wings standard on aeroplanes, and who have not been removed from flying status for lack of proficiency or because of disciplinary action involving aircraft operations, shall be deemed to have met the ground school instruction and flight training requirements, provided that:

- a) the applicant meets the experience requirements of which a minimum of 10 hours flight time in aeroplanes shall have been acquired in the 12 months preceding the date of application.

s401.27 Private Pilot Licence-Helicopters - Requirements

1. Age - An applicant shall be a minimum of seventeen years of age.
2. Medical Fitness and Validity
 - a) an applicant shall hold a valid Class 1 or 2 Medical Certificate.
 - b) the medical validity period for the licence holder under 40 years of age is 24 months and for a licence holder 40 years of age or over, is 12 months.
 - c) the licence is maintained by a valid Class 1 or 2 Medical Certificate.
3. Knowledge - An applicant shall have completed an approved course that includes a minimum of 40 hours private pilot ground school that meets a standard equivalent to the ground training syllabus contained in Appendix A, and passed exams specified by the Authority, in:
 - a) Air law,
 - b) Aircraft general knowledge,
 - c) Principles of flight,
 - d) Flight performance and planning ,
 - e) Navigation,
 - f) Meteorology,
 - g) Operational procedures,
 - h) Human performance and limitations, and
 - i) Communications.
4. Experience -
 - a) An applicant shall have completed a minimum of 40 hours private pilot flight training in helicopters, at a certificated Flight Training Organization, in accordance with an approved Flight Training Program. A maximum 5 of the 40 hours may be conducted on an approved aeroplane simulator or flight training device.
 - b) The flight training program shall include a minimum of:
 - i) 20 hours of dual instruction flight time, including 3 hours cross-country flight time; and
 - ii) 10 hours solo flight time, including 5 hours cross-country flight time with a flight of a minimum of 100 nautical miles, which shall include 2 landings at points other than the point of departure.
5. Skill - Within the 12 months preceding the date of application for the licence, an applicant shall have successfully completed a flight test to the standard specified in the Flight Test Examiner Guide.
6. Credits - Holders of pilot licences in another category of aircraft may be granted credit toward the knowledge and experience requirements as follows:
 - a) Knowledge
 - i) An applicant who holds a private or higher type pilot licence for aeroplanes may, when applying for the issue of Private Pilot Licence - Helicopters have the 40 hour ground instruction requirement reduced to 20 hours.
 - b) Experience

- i) The total flight time must include a minimum of 30 hours in helicopters.
 - ii) Where an applicant holds a pilot licence in another aircraft category flight time credits shall be claimed as follows:
 - A) Aeroplanes and Gyroplanes
 - (1) a maximum of 10 hours towards the total flight time; and
 - (2) a maximum of 4 hours solo flight time, 2 hours of which shall be credited to solo cross-country flight time.
 - B) Glider
 - (1) A maximum of 5 hours pilot-in-command flight time towards the total flight time.
 - C) Three Axis Ultra-light Aeroplane
 - (1) A maximum of 10 hours pilot-in-command flight time towards the total flight time.
7. Credits for Military Applicants - Active and retired Lebanese Air Force personnel who have qualified to pilot wings standard on helicopters, and who have not been removed from flying status for lack of proficiency or because of disciplinary action involving aircraft operations, shall be deemed to have met the ground school instruction and flight training requirements, provided that:
- a) the applicant meets the experience requirements of which a minimum of 10 hours flight time in helicopters shall have been acquired in the 12 months preceding the date of application.

s401.28 Commercial Pilot-Aeroplanes - Requirements

1. Age - An applicant shall be a minimum of eighteen years of age.
2. Medical Fitness and Validity
 - a) an applicant shall hold a Class 1 Medical Certificate valid for a Commercial Pilot Licence - Aeroplanes.
 - b) The medical validity period for the licence holder under 40 years of age is 12 months and for a licence holder 40 years of age or over is 6 months.
 - c) The licence holder may exercise Private Pilot Licence - Aeroplanes privileges until the end of the medical period specified for the Private Pilot Licence.
 - d) The licence is maintained by a valid Class 1 Medical Certificate.
3. Knowledge - An applicant shall have completed an approved course that includes a minimum of 40 hours commercial pilot ground school that meets a standard equivalent to the ground training syllabus contained in Appendix B, and passed exams specified by the Authority, in:
 - a) Air law,
 - b) Aircraft general knowledge,
 - c) Principles of flight,
 - d) Flight performance and planning ,
 - e) Navigation,
 - f) Meteorology,
 - g) Operational procedures,
 - h) Human performance and limitations, and

- i) Communications
4. Experience -
- a) An applicant for a shall have completed a minimum of 200 flight time hours in aeroplanes having a standard certificate of airworthiness, or 150 hours flight time in aeroplanes if the ground school course specified in para 3 and the flight training specified in para 4.b was completed at a certificated Flight Training Organization, in accordance with an approved Flight Training Program. A maximum of 10 of the required hours may be conducted on an approved aeroplane simulator or flight training device. The flight time shall include 100 hours pilot-in-command 20 of which shall be cross-country time.
 - b) The applicant shall have completed in aeroplanes, not less than:
 - i) 35 hours of dual instruction time, including:
 - A) 3 hours night, including a minimum of 1 hour cross-country flight time;
 - B) 5 hours cross-country flight time, which may include the cross-county experience from A) above; and
 - C) 10 hours instrument time in addition to the experience stated in A) and B) above. A maximum of 5 hours of the 10 hours may be conducted in an approved aeroplane simulator or flight training device.
 - ii) 30 hours supervised solo flight time, including:
 - A) 25 hours solo flight time emphasizing the improvement of general flying skills of the applicant which shall include a cross-country flight to a point of a minimum of 300 nautical miles from the point of departure, in the course of which full stop landings at two different aerodromes shall be made; and
 - B) 5 hours solo flight at night during which a minimum of 10 take-offs, circuits and landings were completed.
5. Skill - Within the 12 months preceding the date of application for the licence, an applicant shall have successfully completed a flight test to the standard specified in the Flight Test Examiner Guide.
6. Credits - Holders of pilot licences for other aircraft, may be granted credit toward the knowledge and experience requirements as follows:
- a) Knowledge
 - i) An applicant who holds a Commercial Pilot Licence - Helicopters, shall, when applying for the issue of a Commercial Pilot Licence - Aeroplanes have the 40 hour ground school instruction requirement reduced to 20 hours.
 - b) Experience

Where an applicant holds a pilot licence in another aircraft category, flight time credits may be claimed as follows:

 - i) Commercial Pilot Licence - Helicopters

Where an applicant holds a Commercial Pilot Licence - Helicopters, the 200 hours total flight time in aeroplanes required by paragraph (4)(a) above shall be deemed to have been met provided the applicant has completed a minimum of 100 hours pilot flight time in aeroplanes, including the 65 hours experience requirement demanded by paragraph (4)(b) above.

- ii) **Private Pilot Licence - Helicopters**
Where an applicant holds a Private Pilot Licence - Helicopters
 - A) a maximum of 50 hours flight time in helicopters shall be credited towards the 200 hours total flight time requirement, and
 - B) a maximum of 25 hours of pilot-in-command flight time in helicopters shall be credited towards the 100 hours pilot-in-command flight time requirement.
 - iii) **Pilot Licence - Glider**
Where an applicant holds a Pilot Licence - Glider, a maximum of 50 hours flight time in gliders shall be credited towards the 200 hours total flight time requirement and this time shall not be credited towards the 100 hour pilot-in-command flight time.
 - iv) **Three Axis Ultra-light Aeroplane**
A maximum of 25 hours pilot-in-command flight time in three axis ultra-light aeroplanes shall be credited towards the 200 hours total flight time requirement and this time shall not be credited towards the 100 hour pilot-in-command flight time.
 - v) **Instrument Flight Time**
An applicant who holds a pilot licence - helicopter category shall be credited with instrument flight time acquired in helicopters towards meeting the instrument flight time experience requirements provided that the applicant has acquired a minimum of 10 hours of dual instrument flight time in aeroplanes.
 - vi) **Night Flight Time**
 - A) Where an applicant holds a Private Pilot Licence - Aeroplanes with a night rating, the total dual and solo night flight time requirements shall be deemed to have been met provided that the 35 hours dual instruction flight time and 30 hours solo flight time requirements are met.
 - B) Where an applicant holds a pilot licence - helicopter category valid for night privileges, the night flight time acquired in helicopters shall be credited towards the total dual and solo night flight time requirements provided that the applicant has acquired at night, in aeroplanes, a minimum of 1 hour dual instruction flight time and 1 hour solo flight time and the 35 hours dual instruction flight time and 30 hours solo flight time requirements are met.
7. Credits for Military Applicants - Active and retired Lebanese Air Force personnel who have qualified to pilot wings standard on aeroplanes, and who have not been removed from flying status for lack of proficiency or because of disciplinary action involving aircraft operations, shall be deemed to have met the ground school instruction and flight training requirements provided that:
- a) the applicant meets the experience requirements of which a minimum of 10 hours flight time in aeroplanes shall have been acquired in the 12 months preceding the date of application.

s401.29 Commercial Pilot-Helicopters - Requirements

- 1. Age - An applicant shall be a minimum of eighteen years of age.

2. Medical Fitness and Validity
 - a) an applicant shall hold a Class 1 Medical Certificate valid for a Commercial Pilot Licence - Helicopters.
 - b) The medical validity period for the licence holder under 40 years of age is 12 months and for a licence holder 40 years of age or over is 6 months.
 - c) The licence holder may exercise Private Pilot Licence - Helicopters privileges until the end of the medical period specified for the Private Pilot Licence.
 - d) The licence is maintained by a valid Class 1 Medical Certificate.

3. Knowledge - An applicant shall have completed an approved course that includes a minimum of 40 hours commercial pilot ground school that meets a standard equivalent to the ground training syllabus contained in Appendix B, and passed exams specified by the Authority, in:
 - a) Air law,
 - b) Aircraft general knowledge,
 - c) Principles of flight,
 - d) Flight performance and planning ,
 - e) Navigation,
 - f) Meteorology,
 - g) Operational procedures,
 - h) Human performance and limitations, and
 - i) Communications

4. Experience -
 - a) An applicant for a shall have completed a minimum of 150 flight time hours in helicopters, or 100 hours flight time in helicopters if the ground school course specified in para 3 and the flight training specified in paras 4.b was completed at a certificated Flight Training Organization, in accordance with an approved Flight Training Program. A maximum of 10 of the required hours may be conducted on an approved helicopter simulator or flight training device. The flight time shall include not less than 35 hours pilot-in-command, 10 hours of which shall be cross-country time.
 - b) The applicant shall have completed in helicopters, not less than:
 - i) 35 hours of dual instruction time, including:
 - A) 3 hours night, including a minimum of 1 hour cross-country flight time; which may include the cross-county experience from a) above; and
 - B) 10 hours instrument time. A maximum of 5 hours of the 10 hours may be conducted in an approved aeroplane simulator or flight training device.
 - ii) 20 hours solo flight time, including:
 - A) 15 hours solo flight time emphasizing the improvement of general flying skills of the applicant which shall include a cross-country flight to a point of a minimum of 2 hours flight time from the point of departure and shall include a minimum of 3 landings at a points other than the point of departure; and
 - B) 5 hours solo flight at night during which a minimum of 5 take-offs, circuits and landings were completed.

5. Skill - Within the 12 months preceding the date of application for the licence, an applicant shall have successfully completed a flight test to the standard specified in the Flight Test Examiners Guide.

6. Credits - Holders of pilot licences for other aircraft, may be granted credit toward the knowledge and experience requirements as follows:
 - a) Knowledge
 - i) An applicant who holds a Commercial Pilot Licence - Aeroplanes, shall, when applying for the issue of a Commercial Pilot Licence - Helicopters have the 40 hour ground school instruction requirement reduced to 20 hours.
 - b) Experience

Where an applicant holds a pilot licence in another aircraft category, flight time credits may be claimed as follows:

 - i) Where an applicant holds a Commercial Pilot Licence - Aeroplanes, the 150 hours total flight time in helicopters required by paragraph (4)(a) above shall be deemed to have been met provided the applicant has completed a minimum of 60 hours pilot flight time in helicopters, including the experience requirement demanded by paragraph (4)(b) above.
 - ii) Instrument Flight Time

An applicant who holds a pilot licence - aeroplane category shall be credited with instrument flight time acquired in aeroplanes towards meeting the instrument flight time experience requirements provided that the applicant has acquired a minimum of 5 hours of dual instrument flight time in aeroplanes.
 - iii) Night Flight Time
 - A) Where an applicant holds a Private Pilot Licence - Helicopters with a night rating, the total dual and solo night flight time requirements shall be deemed to have been met provided that the 35 hours dual instruction flight time and 20 hours solo flight time requirements are met.
 - B) Where an applicant holds a pilot licence - aeroplanes category valid for night privileges, the night flight time acquired in aeroplanes shall be credited towards the total dual and solo night flight time requirements provided that the applicant has acquired at night, in helicopters, a minimum of 1 hour dual instruction flight time and 1 hour solo flight time and the 35 hours dual instruction flight time and 20 hours solo flight time requirements are met.

7. Credits for Military Applicants - Active and retired Lebanese Air Force personnel who have qualified to pilot wings standard on helicopters, and who have not been removed from flying status for lack of proficiency or because of disciplinary action involving aircraft operations, shall be deemed to have met the ground school instruction and flight training requirements provided that:
 - a) the applicant meets the experience requirements of which a minimum of 10 hours flight time in aeroplanes shall have been acquired in the 12 months preceding the date of application.

s401.30 Airline Transport Pilot Licence-Aeroplanes - Requirements

1. Age - An applicant shall be a minimum of twenty-one years of age.

2. Medical Fitness and Validity
 - a) An applicant shall hold a Class 1 Medical Certificate valid for an Airline Transport Pilot Licence - Aeroplanes.
 - b) The medical validity period for the licence holder under 40 years of age is 12 months and for a licence holder 40 years of age or over is 6 months.
 - c) The licence holder may exercise Private Pilot Licence - Aeroplanes privileges until the end of the medical period specified for the Private Pilot Licence.
 - d) The licence is maintained by a valid Class 1 Medical Certificate.

3. Knowledge - An applicant shall have passed exams, as specified by the Authority, in:
 - a) Air law:
 - i) rules and regulations relevant to the holder of an airline transport pilot licence - aeroplane; rules of the air; appropriate air traffic services practices and procedures;
 - b) Aircraft general knowledge:
 - i) general characteristics and limitations of electrical, hydraulic, pressurization and other aeroplane systems; flight control systems, including autopilot and stability augmentation;
 - ii) principles of operation, handling procedures and operating limitations of aeroplane powerplants; effects of atmospheric conditions on engine performance; relevant operational information from the flight manual or other appropriate document;
 - iii) operating procedures and limitations of appropriate aeroplanes; effects of atmospheric conditions on aeroplane performance;
 - iv) use and serviceability checks of equipment and systems of appropriate aeroplanes;
 - v) flight instruments; compasses, turning and acceleration errors; gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments;
 - vi) maintenance procedures for airframes, systems and powerplants of appropriate aeroplanes;
 - c) Flight performance and planning:
 - i) effects of loading and mass distribution on aeroplane handling, flight characteristics and performance; mass and balance calculations;
 - ii) use and practical application of take-off, landing and other performance data, including procedures for cruise control;
 - iii) pre-flight and en-route operational flight planning; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; altimeter setting procedures;
 - d) Human performance and limitations:
 - i) human performance and limitations relevant to the airline transport pilot - aeroplane;
 - ii) Crew Resource Management;
 - e) Meteorology:
 - i) interpretation and application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;
 - ii) aeronautical meteorology; climatology of relevant areas in respect of the elements having an effect upon aviation; the movement of pressure systems; the

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- structure of fronts, and the origin and characteristics of significant weather phenomena which affect take-off, en-route and landing conditions;
 - iii) causes, recognition and effects of engine and airframe icing; frontal zone penetration procedures; hazardous weather avoidance;
 - iv) practical high altitude meteorology, including interpretation and use of weather reports, charts and forecasts; jetstreams;
 - f) Navigation:
 - i) air navigation, including the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for long-range flights;
 - ii) use, limitation and serviceability of avionics and instruments necessary for the control and navigation of aeroplanes;
 - iii) use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids;
 - iv) principles and characteristics of self-contained and external-referenced navigation systems; operation of airborne equipment;
 - g) Operational procedures:
 - i) interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations, and instrument procedure charts for departure, en-route, descent and approach;
 - ii) precautionary and emergency procedures; safety practices associated with flight under IFR;
 - iii) operational procedures for carriage of freight and dangerous goods;
 - iv) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aeroplanes;
 - h) Principles of flight:
 - i) principles of flight relating to aeroplanes; sub-sonic aerodynamics; compressibility effects, manoeuvre boundary limits, wing design characteristics, effects of supplementary lift and drag devices; relationships between lift, drag and thrust at various airspeeds and in different flight configurations;
 - i) Radiotelephony:
 - i) radiotelephony procedures and phraseology; action to be taken in case of communication failure.
4. Experience - An applicant shall have at least 1,500 hours of flight time of which a minimum of 900 hours shall be in aeroplanes. The remainder may be in helicopters provided the applicant hold at least a Commercial Pilot Licence - Helicopters, or may include flight time credits specified in s401.28. The total flight time shall include an minimum of:
- a) 250 hours pilot-in-command flight time in aeroplanes which shall include where applicable, a maximum of 150 hours pilot-in-command under supervision flight time completed in accordance with s401.13;
 - b) 100 hours night flight time as pilot-in-command or as co-pilot of which a minimum of 30 hours shall have been acquired in aeroplanes;
 - c) 200 hours cross-country flight time as pilot, or as co-pilot in an aeroplane required to be operated with a co-pilot of which not less than 100 hours shall be as pilot-in-command or pilot-in-command under supervision in accordance with a401.13; and
 - d) 75 hours instrument time of which a maximum of 30 hours may be instrument ground time acquired in an approved flight training device and a maximum of 35 hours may have been acquired in helicopters.

- e) Instrument ground time shall not be applied toward the total 1500 hour flight time requirement.
 - f) A maximum of 100 hours may have been completed in an approved flight simulator.
5. Flight Instruction
- a) The applicant shall have received the dual flight instruction required for the issue of a commercial pilot licence - aeroplanes and for the issue of an instrument rating - aeroplanes.
6. Skill
- a) Within the 12 months preceding the date of application for the licence, an applicant shall have successfully completed a flight test to the standard specified in the Flight Test Examiners Guide. The applicant shall demonstrate the ability to perform as pilot-in-command in a multi-engine aeroplane required to be operated by a crew of at least two pilots under IFR or simulated IFR, conditions.
 - b) The ATPL-A skill test may serve at the same time as a skill test for the issue of the licence and a proficiency check for the revalidation of the type rating for the aeroplane used in the test and may be combined with the skill test for the issue of a type rating.
7. Other - A valid Instrument Rating is required for the exercise of the privileges of an Airline Transport Pilot Licence - Aeroplanes.
8. Credits - Holders of pilot licences or equivalent privileges for other aircraft may be granted credits as follows:
- a) Glider - a maximum of 50 hours flight time in gliders shall be credited towards the total 1500 hour flight time requirement.
 - b) Three Axis Ultra-light Aeroplanes - a maximum of 50 hours flight time in three axis ultra-light aeroplanes shall be credited towards the total 1500 hour flight time requirement.

s401.31 Airline Transport Pilot Licence-Helicopters - Requirements

1. Age - An applicant shall be a minimum of twenty-one years of age.
2. Medical Fitness and Validity
 - a) An applicant shall hold a Class 1 Medical Certificate valid for an Airline Transport Pilot Licence - Helicopters.
 - b) The medical validity period for the licence holder under 40 years of age is 12 months and for a licence holder 40 years of age or over is 6 months.
 - c) The licence holder may exercise Private Pilot Licence - Helicopters privileges until the end of the medical period specified for the Private Pilot Licence.
 - d) The licence is maintained by a valid Class 1 Medical Certificate.
3. Knowledge - An applicant shall have passed exams, as specified by the Authority, in:
 - a) Air law:
 - i) rules and regulations relevant to the holder of an airline transport pilot licence - helicopter; rules of the air; appropriate air traffic services practices and procedures;
 - b) Aircraft general knowledge:
 - i) general characteristics and limitations of electrical, hydraulic, and other helicopter systems; flight control systems, including autopilot and stability augmentation;
 - ii) principles of operation, handling procedures and operating limitations of helicopter powerplants; transmission (power-trains); effects of atmospheric conditions on engine performance; relevant operational information from the flight manual;
 - iii) operating procedures and limitations of appropriate helicopters; effects of atmospheric conditions on helicopter performance; relevant operational information from the flight manual;
 - iv) use and serviceability checks of equipment and systems of appropriate helicopters;
 - v) flight instruments; compasses, turning and acceleration errors; gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments;
 - vi) maintenance procedures for airframes, systems and powerplants of appropriate helicopters;
 - c) Flight performance and planning:
 - i) effects of loading and mass distribution, including external loads, on helicopter handling, flight characteristics and performance; mass and balance calculations;
 - ii) use and practical application of take-off, landing and other performance data, including procedures for cruise control;
 - iii) pre-flight and en-route operational flight planning; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; altimeter setting procedures;
 - d) Human performance and limitations:
 - i) human performance and limitations relevant to the airline transport pilot - helicopter;
 - e) Meteorology:

- i) interpretation and application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;
 - ii) aeronautical meteorology; climatology of relevant areas in respect of the elements having an effect upon aviation; the movement of pressure systems, the structure of fronts, and the origin and characteristics of significant weather phenomena which affect take-off, en-route and landing conditions;
 - iii) causes, recognition and effects of engine, airframe and rotor icing; hazardous weather avoidance;
 - f) Navigation:
 - i) air navigation, including the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for long-range flights;
 - ii) use, limitation and serviceability of avionics and instruments necessary for the control and navigation of helicopters;
 - iii) use, accuracy and reliability of navigation systems; identification of radio navigation aids;
 - iv) principles and characteristics of self-contained and external-referenced navigation systems; operation of airborne equipment;
 - g) Operational procedures:
 - i) interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 - ii) precautionary and emergency procedures; settling with power, ground resonance, retreating blade stall, dynamic roll-over and other operating hazards; safety practices associated with flight under VFR;
 - iii) operational procedures for carriage of freight, including external loads, and dangerous goods;
 - iv) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from helicopters;
 - h) Principles of flight:
 - i) principles of flight relating to helicopters;
 - i) Radiotelephony:
 - i) radiotelephony procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure.
- 4. Experience - An applicant shall have at least 1,000 hours of flight time, of which a minimum of 600 hours shall have been completed in helicopters. The remainder may be in aeroplanes provided the applicant hold at least a Commercial Pilot Licence - Aeroplanes, or may include flight time credits specified in s401.29. The experience shall include :
 - a) 250 hours pilot-in-command flight time in helicopters as pilot-in-command, which may include a maximum of 150 hours pilot-in-command under supervision flight time in accordance with s401.13;
 - b) 50 hours night flight time as pilot-in-command or as co-pilot of which a minimum of 15 hours shall have been acquired in helicopters;
 - c) 200 hours cross-country flight time in helicopters of which a minimum of 100 hours shall be as pilot-in-command or as pilot-in-command under supervision in accordance with Section s401.13;
 - d) 30 hours instrument time of which a maximum of 10 hours may be instrument ground time acquired in an approved flight training device and a maximum of 15 hours may have been acquired in aeroplanes.

- e) Instrument ground time may not be applied toward the total 1000 hour flight time requirement.
 - f) A maximum of 15 hours of the total flight time may have been completed in gliders or ultra-light aircraft.
 - g) A maximum of 100 hours of the total flight time may have been completed in an approved flight simulator.
5. Flight Instruction
- a) The applicant shall have received the dual flight instruction required for the issue of a commercial pilot licence - helicopters and for the issue of an instrument rating - helicopters.
6. Skill
- a) Within the 12 months preceding the date of application for the licence, an applicant shall have successfully completed a flight test to the standard specified in the Flight Test Examiners Guide. The applicant shall demonstrate the ability to perform as pilot-in-command in a helicopter required to be operated by a crew of at least two pilots.
 - b) The ATPL-H skill test may serve at the same time as a skill test for the issue of the licence and a proficiency check for the revalidation of the type rating for the helicopter used in the test and may be combined with the skill test for the issue of a type rating.

s401.32 Pilot Licence-Gliders - Requirements

1. Age - An applicant shall be a minimum of eighteen years of age.
2. Medical Fitness and Validity
 - a) An applicant shall hold a Class 2 Medical Certificate valid for a pilot licence – gliders.
 - b) The medical validity period for the licence holder under 40 years of age is 24 months and for a licence holder 40 years of age or over, 12 months.
 - c) The licence is maintained by a valid Class 1 or 2 Medical Certificate.:
3. Knowledge - An applicant shall have completed a course of glider pilot ground instruction of at least 15 hours in the following subjects:
 - a) Air law:
 - i) rules and regulations relevant to the holder of a glider pilot licence; rules of the air; appropriate air traffic services practices and procedures;
 - b) Aircraft general knowledge:
 - i) principles of operation of glider systems and instruments;
 - ii) operating limitations of gliders; relevant operational information from the flight manual or other appropriate document;
 - c) Flight performance and planning:
 - i) effects of loading and mass distribution on flight characteristics; mass and balance considerations;
 - ii) use and practical application of launching, landing and other performance data;
 - iii) pre-flight and en-route flight planning appropriate to operations under VFR; appropriate air traffic services procedures; altimeter setting procedures; operations in areas of high-density traffic;
 - d) Human performance and limitations:

- i) human performance and limitations relevant to the glider pilot;
 - e) Meteorology:
 - i) application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry;
 - f) Navigation:
 - i) practical aspects of air navigation and dead-reckoning techniques; use of aeronautical charts;
 - g) Operational procedures:
 - i) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 - ii) different launch methods and associated procedures;
 - iii) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather and wake turbulence and other operating hazards;
 - h) Principles of flight:
 - i) principles of flight relating to gliders.
 - i) Radiotelephony:
 - i) procedures and phraseology applicable to VFR operations and actions to be taken in case of communication failure; and
 - j) passed exams, as approved by the Authority.
- 4. Experience - An applicant shall have completed a minimum of 6 hours of glider pilot flight training, under the direction and supervision of a glider pilot, qualified, in accordance with this subpart, to provide glider pilot instruction. The flight training shall include:
 - a) a minimum of 1 hour dual instruction flight time, and
 - b) 2 hours solo flight time, including a minimum of 20 takeoffs and 20 landings,
 - c) The flight training shall include experience in the following areas.
 - i) pre-flight operations, including glider assembly and inspection;
 - ii) techniques and procedures for the launching method used, including appropriate airspeed limitations, emergency procedures and signals used;
 - iii) traffic pattern operations, collision avoidance precautions and procedures;
 - iv) control of the glider by external visual reference;
 - v) flight throughout the flight envelope;
 - vi) recognition of, and recovery from, incipient and full stalls and spiral dives;
 - vii) normal and cross-wind launches, approaches and landings;
 - viii) cross-country flying using visual reference and dead-reckoning;
 - ix) emergency procedures.
- 5. Skill - Within the 12 months preceding the date of application for the licence, an applicant shall demonstrate to a glider instructor, in flight and on the ground, familiarity with, and the ability to perform both normal and emergency manoeuvres appropriate to the glider used in the test and with a degree of competency such that the successful outcome of a procedure or maneuver is never in doubt.
- 6. Credits
 - a) Knowledge
 - i) An applicant who holds a pilot licence in any other category of aircraft shall be deemed to have met 10 of the 15 hours ground school instruction requirement.
 - ii) An applicant who holds a pilot licence - aeroplane may be deemed to have met the ground school instruction requirement.

- iii) An applicant who holds a pilot licence - aeroplane shall be deemed to have met the written examination requirement.

 - b) Experience - An applicant who holds a pilot licence - aeroplane category shall have the total glider pilot flight training time reduced to a minimum of 3 hours, which shall include the minimum flight training specified.
7. Credits for Foreign Applicants - The holder of a licence or equivalent document in the glider category, issued by a Contracting State shall be deemed to have met the ground school instruction requirement, the written examination requirement and the skill requirement provided that the applicant:
- a) meets the experience requirements;
 - b) has passed the Air Law written examination, and
 - c) has completed in gliders a minimum of 5 take-offs and landings within the 6 months preceding.
8. Instructor Qualifications - The standard to be met for the holder of a Pilot Licence-Gliders to provide glider pilot instruction is:
- a) Age - A minimum of eighteen years of age.
 - b) Knowledge and Experience -
 - i) shall have completed a course of instructional techniques which shall be a minimum of 10 hours and include the following:
 - a) the practical application of the basic principles of learning and techniques of instruction;
 - b) preparation and use of lesson plans;
 - c) flight preparatory instruction;
 - d) pre and post flight briefing procedures relative to air exercises and weather conditions; and
 - e) normal and emergency manoeuvres.
 - ii) Shall have completed in gliders a minimum of:
 - a) 20 hours flight time including a minimum of 125 flights of which no fewer than 10 flights have been completed in a two-seat glider; or
 - b) 10 hours flight time including a minimum of 200 flights of which no fewer than 10 flights have been completed in a two-seat glider.
 - c) Skill - Shall have a log book endorsement from the holder of a Pilot Licence-Gliders who meets the qualifications to provide glider pilot instruction, certifying that the applicant has reached a standard of skill to instruct in gliders.
 - d) Credits -
 - i) A person who holds a private or higher pilot licence - aeroplane shall have the total flight time and the total number of flights specified in the Experience Requirement above reduced by 25%.
 - ii) A person with aeroplane pilot experience in excess of 100 hours who holds a private or higher pilot licence - aeroplanes shall be issued a Flight Instructor Rating - Glider after completing a minimum of 10 hours flight time in gliders and at least 50 flights with no fewer than 10 of these flights in two-seat gliders.
 - iii) A person with a commercial or higher pilot licence - aeroplanes who holds a valid Flight Instructor Rating - Aeroplanes:

- a) shall be issued a Flight Instructor Rating - Glider after completing a minimum of at least 25 flights in gliders with no fewer than 10 of these flights in two seat gliders.
- b) the instructional techniques course specified under the Knowledge Requirement above shall also be deemed to have been met.

s401.33 Free Balloons Pilot Licence - Requirements

1. Age - An applicant shall be a minimum of eighteen years of age.
2. Medical Fitness and Validity
 - a) An applicant shall hold a Class 2 Medical Certificate valid for a free balloon pilot licence.
 - b) The medical validity period for the licence holder under 40 years of age is 24 months and for a licence holder 40 years of age or over, 12 months.
 - c) The licence is maintained by a valid Class 1 or 2 Medical Certificate.
3. Knowledge - An applicant shall have completed a course of free balloon pilot ground instruction of at least 10 hours in the following subjects:
 - a) Air law:
 - i) rules and regulations relevant to the holder of a free balloon pilot licence; rules of the air; appropriate air traffic services practices and procedures;
 - b) Aircraft general knowledge:
 - i) principles of operation of free balloon systems and instruments;
 - ii) operating limitations of free balloons; relevant operational information from the flight manual or other appropriate document;
 - iii) physical properties and practical application of gases used in free balloons;
 - c) Flight performance and planning:
 - i) effects of loading on flight characteristics; mass calculations;
 - ii) use and practical application of launching, landing and other performance data, including the effect of temperature;
 - iii) pre-flight and en-route flight planning appropriate to operations under VFR; appropriate air traffic services procedures; altimeter setting procedures; operations in areas of high-density traffic;
 - d) Human performance and limitations:
 - i) human performance and limitations relevant to the free balloon pilot;
 - e) Meteorology:
 - i) application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry;
 - f) Navigation:
 - i) practical aspects of air navigation and dead-reckoning techniques; use of aeronautical charts;
 - g) Operational procedures:
 - i) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 - ii) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards;
 - h) Principles of flight:

- i) principles of flight relating to free balloons.
 - i) Radiotelephony:
 - i) procedures and phraseology applicable to VFR operations and actions to be taken in case of communication failure; and
 - j) passed exams, as approved by the Authority.
4. Experience - An applicant shall have completed a minimum of 16 hours balloon pilot flight time under the direction and supervision of the holder of a person qualified under this Subpart to provide free balloon pilot instruction. The flight time shall include a minimum of:
- a) 6 dual instruction flights of a minimum of 30 minutes each including 1 ascent to an altitude of a minimum of 5,000 feet above ground level; and
 - b) 2 flights as sole occupant of a minimum of 30 minutes each between takeoff and landing.
 - c) the instruction shall include:
 - i) pre-flight operations, including balloon assembly, rigging, inflation, mooring and inspection;
 - ii) techniques and procedures for the launching and ascent, including appropriate limitations, emergency procedures and signals used;
 - iii) collision avoidance precautions;
 - iv) control of a free balloon by external visual reference;
 - v) recognition of, and recovery from, rapid descents;
 - vi) cross-country flying using visual reference and dead-reckoning;
 - vii) approaches and landings, including ground handling; and
 - viii) emergency procedures.
5. Skill - Within the 12 months preceding the date of application for the licence, an applicant shall demonstrate to a free balloon instructor, in flight and on the ground, familiarity with and the ability to perform both normal and emergency manoeuvres and procedures appropriate to the balloon used in the test and with a degree of competency such that the successful outcome of a procedure or an maneuver is never seriously in doubt.
6. Credits - Knowledge - An applicant who holds a pilot licence in any other category of aircraft shall be deemed to have met 5 of the 10 hours of ground school instruction requirement.
7. Credits for Foreign Applicants - The holder of a free balloon pilot licence, issued by a Contracting State shall be deemed to have met the ground school instruction requirement, the written examination requirement and the skill requirement provided that the applicant:
- a) meets the experience requirements;
 - b) has passed the written Air Law examination; and
 - c) has completed in balloons a minimum of 5 take-offs and landings within the previous 6 months.
8. Instructor Qualifications - The standard to be met for the holder of a Free Balloon Pilot Licence to provide free balloon pilot instruction is:
- a) Age - a minimum of eighteen years of age.
 - b) Knowledge and Experience -
 - i) shall have completed a course of instructional techniques which shall be a minimum of 10 hours and include the following:

- A) the practical application of the basic principles of learning and techniques of instruction;
 - B) preparation and use of lesson plans;
 - C) flight preparatory instruction;
 - D) pre and post flight briefing procedures relative to air exercises and weather conditions; and
 - E) normal and emergency manoeuvres. and
- ii) shall have completed a minimum of 50 hours of flight time in free balloons.
- c) Skill - Shall have a log book endorsement from the holder of a Free Balloon Pilot Licence who meets the qualifications to provide free balloon pilot instruction, certifying that the person has reached a standard of skill to instruct in free balloons.
- d) Credit - The instructional techniques course specified under the Knowledge Requirement above shall be deemed to have been met if the applicant holds, or has held within the preceding 24 months, a valid Commercial or higher pilot licence with flight instructor privileges.

s401.34 Flight Engineer Licence - Requirements

1. Age - An applicant shall be a minimum of eighteen years of age.
2. Medical Fitness and Validity.
 - a) An applicant shall hold a Class 1 Medical Certificate valid for a Flight Engineer Licence.
 - b) The medical validity period for the licence holder is 12 months.
 - c) The licence is maintained by a valid Class 1 Medical Certificate.
3. Knowledge -
 - a) An applicant shall have completed an approved course of training that includes the following:
 - i) Air law:
 - A) rules and regulations relevant to the holder of a flight engineer licence; rules and regulations governing the operation of civil aircraft pertinent to the duties of a flight engineer;
 - ii) Aircraft general knowledge:
 - A) basic principles of powerplants, gas turbines and/or piston engines; characteristics of fuels, fuel systems including fuel control; lubricants and lubrication systems; afterburners and injection systems, function and operation of engine ignition and starter systems;
 - B) principles of operation, handling procedures and operating limitations of aircraft powerplants; effects of atmospheric conditions on engine performance;
 - C) airframes, flight controls, structures, wheel assemblies, brakes and anti-skid units, corrosion and fatigue life; identification of structural damage and defects;
 - D) ice and rain protection systems;
 - E) pressurization and air-conditioning systems, oxygen systems;
 - F) hydraulic and pneumatic systems;
 - G) basic electrical theory, electric systems (AC and DC), aircraft wiring systems, bonding and screening;

- H) principles of operation of instruments, compasses, auto-pilots, radio communication equipment, radio and radar navigation aids, flight management systems, displays and avionics;
- I) limitations of appropriate aircraft;
- J) fire protection, detection, suppression and extinguishing systems;
- K) use and serviceability checks of equipment and systems of appropriate aircraft;
- iii) Flight performance and planning:
 - A) effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;
 - B) use and practical application of performance data including procedures for cruise control;
- iv) Navigation:
 - A) fundamentals of navigation; principles and operation of self-contained systems
- v) Meteorology:
 - A) operational aspects of meteorology
- vi) Human performance and limitations:
 - A) human performance and limitations relevant to the flight engineer;
 - B) Crew Resource Management;
- vii) Operational procedures:
 - A) principles of maintenance, procedures for the maintenance of airworthiness, defect reporting, pre-flight inspections, precautionary procedures for fueling and use of external power; installed equipment and cabin systems;
 - B) normal, abnormal and emergency procedures;
 - C) operational procedures for carriage of freight and dangerous goods;
- viii) Principles of flight:
 - A) fundamentals of aerodynamics;
- ix) Radiotelephony:
 - A) radiotelephony procedures and phraseology;
- b) passed exams, as specified by the Authority. and
- c) completed, an approved course of training, and an examination including the aircraft performance, systems, and normal and emergency procedures with respect to the aircraft type to be endorsed on the licence.

4. Experience –

- a) An applicant shall have completed in the performance of the duties of a flight engineer:
 - i) a minimum of 100 hours of experience, under the supervision of a flight engineer endorsed for the aircraft type, of which a maximum of 50 hours aircraft type simulator time acquired during an approved course of training shall be credited towards the total experience; or
 - ii) where the applicant is the holder a Commercial Pilot or higher licence - aeroplanes and has successfully completed the approved course of training, a minimum of 50 hours experience under the supervision of a flight engineer or second officer endorsed for the aircraft type. In this case a maximum of 25 hours aircraft type simulator time acquired during an approved course of training, may be credited towards the total experience.

- b) An applicant shall have operational experience in the performance of the duties of a flight engineer, under the supervision of a flight engineer accepted by the Licensing Authority for that purpose, in at least the following areas:
- i) normal procedures
 - A) pre-flight inspections
 - B) fuelling procedures, fuel management
 - C) inspection of maintenance documents
 - D) normal flight deck procedures during all phases of flight
 - E) crew co-ordination and procedures in case of crew incapacitation
 - F) defect reporting
 - ii) abnormal and alternate (standby) procedures
 - A) recognition of abnormal functioning of aircraft systems
 - B) use of abnormal and alternate (standby) procedures
 - iii) emergency procedures
 - A) recognition of emergency conditions
 - B) use of appropriate emergency procedures

5. Skill –

- a) An applicant shall provide a letter certifying the applicant has, with respect to the aircraft type to be endorsed on the licence, demonstrated the ability through a flight test in an aircraft or approved flight simulator, to perform both normal abnormal and emergency procedures to a degree of competency appropriate to the privileges granted by the licence, and to.
- i) use aircraft systems within the aircraft's capabilities and limitations;
 - ii) exercise good judgement and airmanship;
 - iii) apply aeronautical knowledge;
 - iv) perform all the duties as part of an integrated crew with the successful outcome never in doubt; and
 - v) communicate effectively with the other flight crew members.
- b) The letter of certification shall be signed by one of the following persons:
- i) a training Flight Engineer whose Lebanese Flight Engineer Licence is valid and endorsed for the aircraft type;
 - ii) the company Chief Pilot; or
 - iii) a designated Flight Engineer Examiner.

6. Endorsement of Aircraft Types

- a) An aircraft type rating shall be issued concurrently with the initial issue of a Flight Engineer Licence.
- b) Additional aircraft types may be endorsed on a Flight Engineer Licence upon submission of a letter certifying that, with respect to the aircraft type, the applicant has met the skill requirement and has successfully completed an approved course of training.

7. Credits

- a) A Lebanese Air Force flight engineer qualified on the applicable aircraft type shall be deemed to have met the knowledge and experience requirements provided that the applicant:

- i) submits the application for licence not later than 3 months following the date of retirement, discharge or termination of active reserve duty,
- ii) has passed the written examination on Air Law and Operational Procedures, and
- iii) has acquired 50 hours flight time in the performance of the duties of a flight engineer within the 12 months preceding the date of application for the licence.

s401.35 Ultra-light Pilot Licence – Aeroplanes – Requirements

1. Age - An applicant shall be a minimum of eighteen years of age.
2. Medical Fitness and Validity
 - a) An applicant shall hold a Class 2 Medical Certificate valid for an ultra-light pilot licence - aeroplanes.
 - b) The medical validity period for the licence holder under 40 years of age is 24 months and for a licence holder 40 years of age or over, 12 months.
 - c) The licence is maintained by a valid Class 1 or 2 Medical Certificate.
3. Knowledge - An applicant shall have completed a course of ultra-light pilot instruction of at least 15 hours on the following subjects:
 - a) Air law:
 - i) rules and regulations relevant to the holder of a ultra-light pilot licence - aeroplanes; rules of the air and appropriate air traffic services practices and procedures;
 - b) Aircraft general knowledge:
 - i) principles of operation of ultra-light aeroplane systems and instruments;
 - ii) operating limitations of ultra-light aeroplanes; relevant operational information from the flight manual or other appropriate document;
 - c) Flight performance and planning:
 - i) effects of loading and mass distribution on flight characteristics; mass and balance considerations;
 - ii) pre-flight and en-route flight planning appropriate to operations under VFR; appropriate air traffic services procedures; altimeter setting procedures; and operations in areas of high-density traffic;
 - d) Human performance and limitations:
 - i) human performance and limitations relevant to the ultra-light aeroplane pilot;
 - e) Meteorology:
 - i) application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry;
 - f) Navigation:
 - i) practical aspects of air navigation and dead-reckoning techniques; use of aeronautical charts;
 - g) Operational procedures:
 - i) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 - ii) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather and wake turbulence and other operating hazards;

- h) Principles of flight:
 - i) principles of flight relating to ultra-light aeroplanes.
 - i) Radiotelephony:
 - i) procedures and phraseology applicable to VFR operations and actions to be taken in case of communication failure; and
 - j) passed exams, as approved by the Authority.
4. Experience - An applicant shall have acquired a minimum of 15 hours in ultra-light aeroplanes under the direction and supervision of an ultra-light pilot, qualified, in accordance with this subpart, to provide ultra-light aeroplane pilot instruction. The flight training shall include:
- a) a minimum of 5 hours dual instruction flight time and 5 hours solo flight time, and
 - b) a minimum of 30 takeoffs and landings, including 10 as the sole occupant of the aircraft;
 - c) the flight training shall include experience in the following areas:
 - i) pre-flight operations including aircraft inspection and servicing;
 - ii) control of the aircraft by external references,
 - iii) recognition of, and recovery from incipient and full stalls and spiral dives,
 - iv) normal and crosswind takeoff, and landing,
 - v) traffic pattern operations,
 - vi) cross country flying using visual reference and dead-reckoning, and
 - vii) emergency procedures.
5. Skill - Within the 12 months preceding the date of application for the permit, an applicant shall demonstrate to a ultra-light aeroplane instructor, in the air and on the ground, familiarity with and the ability to perform, both normal and emergency maneuvers appropriate to the ultra-light aeroplane used in the test with a degree of competency such that the successful outcome of a procedure or maneuver is never in doubt.
6. Credits
- a) Knowledge
 - i) An applicant who holds a pilot licence in any other category of aircraft shall be deemed to have met the written examination requirement.
 - ii) An applicant who holds a pilot licence - aeroplane shall be deemed to have met the knowledge requirements.
 - b) Experience - An applicant who is the holder of, or has held a pilot licence - aeroplanes within the preceding 5 years shall have the experience requirements reduced to a minimum of 5 hours of flight time in ultra-light aeroplanes. This shall include a minimum of 2 hours dual instruction flight time and a minimum of 2 hours solo flight time. The flight time shall include a minimum of 20 takeoffs, full circuits and landings, including a minimum of 10 as sole occupant.
 - c) Skill - An applicant who holds a pilot licence - aeroplanes shall be deemed to have met the skill requirements.
7. Instructor Qualifications - The standard to be met for the holder of a n Ultra-light Pilot Licence – Aeroplanes to provide ultra-light pilot instruction is:
- a) Age - a minimum of eighteen years of age.
 - b) Knowledge and Experience -

- i) shall have completed a course of instructional techniques which shall be a minimum of 10 hours and include the following:
 - A) the practical application of the basic principles of learning and techniques of instruction;
 - B) preparation and use of lesson plans;
 - C) flight preparatory instruction;
 - D) pre and post flight briefing procedures relative to air exercises and weather conditions; and
 - E) normal and emergency manoeuvres. and
- ii) shall have completed a minimum of 50 hours of flight time ultra-light aircraft .
- c) Skill - Shall have a log book endorsement from the holder of an Ultra-light Pilot Licence – Aeroplanes who meets the qualifications to provide ultra-light pilot instruction, certifying that the person has reached a standard of skill to instruct in ultra-light aeroplanes.
- a) Credits :
 - i) The instructional techniques course specified under the Knowledge and Experience requirement above shall be deemed to have been met if the applicant holds, or has held within the preceding 24 months, a valid Commercial or higher pilot licence with flight instructor privileges.
 - ii) A person who holds a private or higher pilot licence - aeroplane shall have the total flight time specified in the Knowledge and Experience requirement above reduced by 25%.
 - iii) A person with a commercial or higher pilot licence - aeroplanes who holds a valid Flight Instructor Rating – Aeroplanes shall be deemed to have met the Knowledge and Experience requirement after completing a minimum of 10 hours flight time in ultra-light aeroplanes.

s401.38 Aeroplane Class Rating - Requirements

1. The following are the classes of single-pilot aeroplanes that do not requiring a type rating:
 - a) single-engine - land;
 - b) single-engine - sea;
 - c) multi-engine - land; and
 - d) multi-engine - sea.
2. Seaplane Rating - Requirements
 - a) Experience
 - i) An applicant for a seaplane rating shall have completed a course, given by the holder of a Flight Instructor rating, that includes a total of 7 hours of seaplane training, including:
 - A) a minimum of 5 hours dual instruction, and
 - B) a minimum of 5 takeoffs and landings as sole occupant of the aeroplane, except for two crew aircraft, in which case the takeoffs and landings shall be done as pilot at the controls.
 - ii) The following exercises shall be included in the seaplane training:
 - A) taxiing,
 - B) sailing,

- C) docking,
 - D) takeoff, and landing, and
 - E) as conditions exist, operations on glassy water, rough water and in crosswind conditions.
 - b) Skill - An applicant shall complete a flight test to the standard specified in Flight Test Examiner Guide.
 - c) Renewal -
 - i) A Class rating will be renewed when the holder provides to the Authority documentary evidence that the renewal requirements specified in s401.39(4) have been met.
 - ii) Renewal of a multi-engine seaplane Class rating will also renew a single engine seaplane Class rating.
 - d) Credits for military Applicants - Active and retired personnel of the Lebanese Air Force who are qualified to the pilot aeroplane wings standard, shall be deemed to have satisfied the seaplane training requirements specified above, provided that the applicant:
 - i) has completed not less than 50 hours flight time as pilot-in-command in seaplanes during the 12 months preceding the date of application for the rating, and
 - ii) has met the prescribed standard of the Lebanese Air Force to act as pilot-in-command of seaplanes during the 24 months preceding the date of application for the rating. In such cases the rating issued will be valid for two years from the date that the prescribed standard was met.
- 3. Landplane Rating - Requirements
 - a) Experience - An applicant for a landplane rating shall complete a course, given by the holder of a Flight Instructor rating, that includes the following:
 - i) a total of 3 hours of landplane flight training including:
 - A) a minimum of 2 hours dual instruction, and
 - B) a minimum of 5 takeoffs and five landings as sole occupant of the aeroplane.
 - ii) The following exercises shall be included in the landplane training:
 - A) taxiing,
 - B) landings, including crosswind landings, and
 - C) takeoffs.
 - b) Skill - An applicant shall complete a flight test to the standard specified in Flight Test Examiner Guide.
 - c) Renewal -
 - i) A Class rating will be renewed when the holder provides to the Authority documentary evidence that the renewal requirements specified in s401.39(4) have been met.
 - ii) Renewal of a multi-engine landplane Class rating will also renew a single engine landplane Class rating.
- 4. Multi-engine Class Rating - Requirements (*NOTE: Includes center line thrust aeroplanes*)
 - a) Experience -
 - i) An applicant for a class rating for a single-pilot multi-engine aeroplane shall have completed at least 50 hours as pilot-in-command of aeroplanes, and

- ii) An applicant shall have completed an approved course of training that meets a standard equivalent to the training syllabus contained in Appendix C, and that includes a minimum of:
- A) 7 hours technical ground instruction, and
 - B) 5 hours dual flight instruction.
- b) Skill - An applicant shall complete a flight test in a multi-engine aeroplane, other than a center line thrust aeroplane, to the standard specified in the Flight Test Examiner Guide.
- c) Renewal - A Class rating will be renewed when the holder provides to the Authority documentary evidence that the renewal requirements specified in s401.39(4) have been met.

s401.39 Class and Individual Type Rating - Requirements

Where an applicant meets the applicable requirements for issue, the following licences may be endorsed with the class or type rating, as indicated:

Type of Licence	Class Rating	Individual Type Rating
Glider Pilot	All gliders	Medically restricted.
Free Balloon Pilot	All free balloons	Medically restricted.
Ultra-light Pilot - Aeroplanes	All ultra-light aeroplanes	Medically restricted.
Private Pilot – Aeroplanes	Single pilot aeroplanes <ul style="list-style-type: none"> • single engine - land • single engine - sea • multi engine - land • multi engine - sea 	Individual type aeroplanes requiring two or more pilots. Medically restricted.
Commercial Pilot – Aeroplanes	Single pilot aeroplanes <ul style="list-style-type: none"> • single engine - land • single engine - sea • multi engine - land • multi engine - sea 	Individual type aeroplanes requiring two or more pilots. Medically restricted.
Airline Transport Pilot – Aeroplanes	Single pilot aeroplanes <ul style="list-style-type: none"> • single engine - land • single engine - sea • multi engine - land • multi engine - sea 	Individual type aeroplanes requiring two or more pilots. Medically restricted.

Type of Licence	Class Rating	Individual Type Rating
Private Pilot – Helicopter	none	Each type of helicopter. Medically restricted
Commercial Pilot – Helicopter	none	Each type of helicopter. Medically restricted.
Airline Transport Pilot – Helicopter	none	Each type of helicopter. Medically restricted.
Flight Engineer	none	Individual type aeroplanes. Medically restricted.

1. Class Rating - The requirements for issue of an aeroplane class rating is as specified in section s401.38.

2. Individual Type Rating:
 - a) Aeroplanes types requiring two or more pilots, or as designated by the Authority, as identified in LAR - Personnel Licensing Circular _____ may be endorsed on an aeroplane pilot licence.
 - b) All individual types of helicopters, as identified in LAR - Personnel Licensing Circular _____ may be endorsed on a helicopter pilot licence.
 - c) All individual aircraft types certificated for a flight crew of three or more persons may be endorsed on a Flight Engineer licence.
 - d) Individual aircraft type ratings may be endorsed on certain medically restricted licences.

3. Individual Type Rating Requirements:
 - a) Aeroplane and Helicopter Two Crew
 - i) Knowledge - An applicant for an individual aircraft type rating for aeroplanes or helicopters with a minimum flight crew requirement of at least two pilots shall have completed a program of ground and flight training on the aircraft type that has been approved by the Authority. Also for the endorsement of the rating on a Private or Commercial Pilot Licence, have passed the Airline Transport Pilot Licence or Two Crew Aircraft Knowledge written examinations within the 12 months preceding the application for the first endorsement of the rating.
 - ii) Experience - An applicant shall have completed flight training on the aeroplane type and have completed a minimum of 250 hours pilot flight time on aeroplanes for an aeroplane type rating and helicopters for a helicopter type rating.
 - iii) Skill - An applicant shall have passed the Airline Transport Pilot fight test as specified in the Flight Test Examiner Guide or a Pilot Proficiency Check as required by LAR Part VI or VII, on the aircraft type within the 90 days preceding the application for the rating.
 - b) Helicopter One Pilot
 - i) An applicant shall have passed a private or commercial pilot licence flight test on the helicopter type, or
 - ii) A Pilot Proficiency Check as required by LAR Part VI or VII on the aircraft type within the 90 days preceding the application for the rating.
 - c) Flight Engineer Type Rating requirements shall be as specified in s401.34.

4. Renewal of a Class Rating - The Authority will renew a class rating upon receipt of documentary evidence that the holder has in the category and class of aircraft:
- a) during the period of validity, flown at least ten route sectors as pilot of the relevant type or class of aircraft and successfully completed a refresher program of one hour ground training and one hour flight training with the holder of a flight instructor rating for the category and class of aircraft. (A route sector is defined for this purpose as a flight comprising take-off, departure, cruise of not less than 15 minutes, arrival, approach and landing phases.) or
 - b) has completed a refresher program of 2 hours ground training and 2 hours flight training including at least one route sector. A flight test as specified for initial issue of the class rating will be accepted in lieu of the 2 hours flight training.
 - c) The ground and flight refresher program required for the renewal of a class rating may be conducted within the 90 day period prior to the “valid until” date of the existing rating. In this case, the renewed rating shall be valid until the same date as if the flight test was done the date the rating was scheduled to expire.
 - d) Where a class rating has lapsed for more than 24 months, an applicant for renewal of a rating shall have:
 - i) completed the refresher program referred to in paragraph 4(b); and
 - ii) a flight test as specified for initial issue of the class rating.
 - e) Where a class rating has lapsed for more than 5 years, an applicant shall complete the knowledge and skill requirements for the licence held.
 - f) The renewal of a multi-engine class rating also satisfies the requirements for renewal of a single engine class rating.
5. Renewal of a Type Rating - The Authority will renew an individual type rating upon receipt of documentary evidence that the holder has:
- a) successfully completed a flight test as specified for initial issue of the rating or a renewal process approved through an Air Operator Certificate issued under Part VI or Part VII.
 - b) A flight test for the renewal of a type rating may be conducted within the 90 day period prior to the valid until date of the existing rating. In this case, the renewed rating shall be valid until the same date as if the flight test was done the date the rating was scheduled to expire.
 - c) A Type Rating on a Flight Engineer Licence shall be renewed when the requirements of s401.34(5) have been met.
 - d) Where an individual type rating has lapsed for more than 24 months, an applicant for renewal of a rating shall have:
 - i) met the Knowledge requirement specified in 3(a); and
 - ii) passed the flight test referred to in paragraph 3(c) of this section.
 - e) The renewal of a type rating also satisfies the requirements for renewal of a class rating.

s401.40 Night Rating - Requirements

1. Private Pilot Licence - Aeroplanes
 - a) Experience - An applicant for a night rating shall have acquired in aeroplanes a minimum of 20 hours of pilot flight time which shall include a minimum of:
 - i) 5 hours of night flight time including a minimum of:
 - A) 3 hours dual flight time, including 1 hour of cross-country flight time,
 - B) 2 hours solo flight time, including 5 takeoffs, and full stop landings, and
 - ii) 5 hours dual instrument time.
 - iii) The 2 of the 5 hours dual instrument time may be dual instrument ground time acquired in an approved flight simulator or flight training device, and shall be in addition to the 5 hours night flight time in subparagraph (a)(i) above.
 - b) Skill - An applicant for a night rating shall have reached the level of skill specified in the Flight Instructor Guide.
 - c) Credits - An applicant who holds a licence endorsed with a night rating in one of the other aircraft categories shall have the total 20 hour pilot flight time reduced to a minimum of 5 hours in aeroplanes including a minimum of:
 - i) 2 hours dual night flight time,
 - ii) 1 hour solo night flight time, and
 - iii) 1 hour dual instrument flight time which shall be in addition to the flight time of (i) and (ii).
2. Private Pilot Licence - Helicopters
 - a) Experience - An applicant for a night rating shall have acquired in helicopters a minimum of 20 hours of pilot flight time which shall include a minimum of:
 - i) 5 hours of night flight time including a minimum of:
 - A) 3 hours dual flight time, including 2 hours of cross-country flight time,
 - B) 2 hours solo flight time, including 10 takeoffs and landings, and
 - ii) 5 hours dual instrument time.
 - iii) The 2 of the 5 hours dual instrument time may be dual instrument ground time acquired in an approved flight simulator or flight training device, and shall be in addition to the 5 hours night flight time in subparagraph (a)(i) above.
 - b) Skill - An applicant for a night rating shall have reached the level of skill specified in the Flight Instructor Guide.
 - c) Credits - An applicant who holds a licence endorsed with a night rating in one of the other aircraft categories shall have the total 20 hour pilot flight time reduced to a minimum of 5 hours in helicopters including a minimum of:
 - i) 2 hours dual night flight time,
 - ii) 1 hour solo night flight time, and
 - iii) 1 hour dual instrument flight time which shall be in addition to the flight time of (i) and (ii).
3. Free Balloon Pilot Licence:

An applicant shall have completed in free balloons a minimum of:

- a) One dual and one solo ascent by night, and
- b) a minimum of 4 hours night flight time under the direction and supervision of the holder of a free balloon pilot licence that meets the requirements in this Sub-part to provide flight instruction and whose licence is endorsed for night.

s401.41 Instrument Rating - Requirements

1. General - An instrument rating is issued for the following aircraft groups:
 - a) Single Engine Aeroplanes - valid for multi-engine centre line thrust and single engine aeroplanes where the flight test was conducted in a multi-engine centre line thrust or single engine aeroplane,
 - b) Multi Engine Aeroplanes - valid for all aeroplanes where the flight test was conducted in a multi-engine aeroplane, or
 - c) Helicopters - valid for helicopters where the flight test was conducted in a helicopter.
2. Requirements
 - a) Medical - Applicants who hold a Class 2 Medical Certificate shall establish their hearing acuity on the basis of compliance with the hearing requirements for the issue of a Class 1 Medical Certificate.
 - b) Knowledge - An applicant shall have passed exams, as specified by the Authority, in:
 - i) Air law:
 - A) rules and regulations relevant to flight under IFR; related air traffic services practices and procedures;
 - ii) Aircraft general knowledge:
 - A) use, limitation and serviceability of avionics and instruments necessary for the control and navigation of aeroplanes under IFR and in instrument meteorological conditions; use and limitations of autopilot;
 - B) compasses, turning and acceleration errors; gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments;
 - iii) Flight performance and planning:
 - A) pre-flight preparations and checks appropriate to flight under IFR;
 - B) operational flight planning; preparation and filing of air traffic services flight plans under IFR; altimeter setting procedures;
 - iv) Human performance and limitations:
 - A) human performance and limitations relevant to instrument flight in aeroplanes;
 - v) Meteorology:
 - A) application of aeronautical meteorology; interpretation and use of reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information; altimetry;
 - B) causes, recognition and effects of engine and airframe icing; frontal zone penetration procedures; hazardous weather avoidance;
 - vi) Navigation:
 - A) practical air navigation using radio navigation aids;
 - B) use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids;

- vii) Operational procedures:
- A) interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations, and instrument procedure charts for departure, en-route, descent and approach;
 - B) precautionary and emergency procedures; safety practices associated with flight under IFR;
- viii) Radiotelephony:
- A) radiotelephony procedures and phraseology as applied to aircraft operations under IFR; action to be taken in case of communication failure.
- c) Experience - An applicant shall have completed a minimum of:
- i) 50 hours of cross-country flight as pilot-in-command in aeroplanes or helicopters of which 10 hours must be in the appropriate category; and
 - ii) 40 hours of instrument time of which a maximum of 20 hours may be instrument ground time in an approved flight training device or 30 hours if obtained in an approved flight simulator for which the applicant holds a category, class and type rating. The ground instrument time shall be obtained under the supervision of an approved flight instructor. The 40 hours instrument time shall include a minimum of:
 - A) 20 hours of dual instrument flight time acquired from the holder of a flight instructor rating,
 - B) 5 hours in aeroplanes where the applicant is applying for aeroplane instrument rating or in helicopters where the applicant is applying for helicopter instrument rating,
 - C) one dual cross-country flight under simulated or actual IMC conditions of a minimum of 100 nautical miles, the flight to be conducted in accordance with an IFR flight plan to include at, two different locations, an instrument approach to minima.
 - iii) The applicant shall have gained not less than 10 hours of the instrument flight time required in (ii)(A) while receiving dual instrument flight instruction in the category and class of aircraft from the holder of a flight instructor rating. The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the holder of an instrument rating:
 - A) pre-flight procedures, including the use of the flight manual or equivalent document, and appropriate air traffic services documents in the preparation of an IFR flight plan;
 - B) pre-flight inspection, use of checklists, taxiing and pre-take-off checks;
 - C) procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:
 - transition to instrument flight on take-off
 - standard instrument departures and arrivals
 - en-route IFR procedures
 - holding procedures
 - instrument approaches to specified minima
 - missed approach procedures
 - landings from instrument approaches
 - D) in-flight manoeuvres and particular flight characteristics.
 - iv) If the privileges of the instrument rating are to be exercised on multi-engine aircraft, the applicant shall have received dual instrument flight instruction in

such an aircraft from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in the operation of the aircraft solely by reference to instruments with one engine inoperative or simulated inoperative.

- d) Skill - An applicant shall complete a flight test to the standard specified in the Flight Test Examiner Guide.
- e) Medical Fitness - The holder of a Private Pilot Licence shall meet the Medical Class 1 hearing requirements.

3. Renewal of Instrument Rating

- a) The Authority will renew an instrument rating upon receipt of documentary evidence that the holder has successfully completed a flight test to the standard specified in the Flight Test Examiner Guide. The instrument flight test may be combined with a type rating renewal skill or proficiency check.
- b) A flight test for the renewal of an instrument rating may be conducted within the 90 day period prior to the valid until date of the existing rating. In this case, the renewed rating shall be valid until the same date as if the flight test was done the date the rating was scheduled to expire.
- c) Where an instrument rating has lapsed for more than 24 months, an applicant for renewal of an instrument rating shall have:
 - i) passed the flight test referred to in paragraph 2(c); and
 - ii) passed the written examination described in the Knowledge Requirement above.
 - iii) Where the applicant has held, within the previous 24 months, a valid instrument rating issued by a contracting state, the knowledge requirement shall be considered to have been met.

s401.44 Flight Instructor Rating Aeroplanes and Helicopters - General Requirements

- 1. Age - An applicant for a flight instructor rating shall be a minimum of eighteen years of age.
- 2. Renewal of an Instructor Rating - An instructor rating will be renewed when the holder successfully completes a flight test to the standard specified in the Flight Test Examiner Guide or if within the validity period the applicant:
 - a) attended an approved Flight Instructor Refresher course; or
 - b) recommended at least 10 students for flight test, of which 70% attained a full pass.
- 3. The Authority may at their own discretion, require the holder of a Flight Instructor rating to pass a flight test for renewal of the rating.
- 4. Renewal of an expired rating - If a Flight Instructor rating has expired for more than two years the applicant, to be eligible to take a renewal flight test, shall present a recommendation from the holder of a Flight Instructor rating that is qualified to instruct flight instructors, certifying that the applicant meets the knowledge and skill requirements for the issue of a Flight Instructor Rating.

s401.45 Flight Instructor Rating Aeroplanes - Requirements

- 1. Age - An applicant for a flight instructor rating shall be a minimum of eighteen years of age.

2. Training Pre-requisite - Before being permitted to begin an approved course of ground training for a Flight Instructor-Aeroplanes rating an applicant shall hold a valid Commercial Pilot Licence - Aeroplanes or an Airline Transport Pilot Licence - Aeroplanes:
3. Knowledge -
 - a) An applicant shall have completed an approved technical course of training of at least 25 hours of instruction that includes:
 - i) practical application of the basic principles of learning and techniques of instruction;
 - ii) preparation and use of lesson plans;
 - iii) classroom instructional techniques;
 - iv) use of training aids;
 - v) assessment of student performance, evaluation and testing;
 - vi) procedures for planning and presenting preparatory ground instruction, pre-flight briefings, in-flight instruction, and post-flight debriefings;
 - vii) analysis and correction of student errors;
 - viii) theory of flight required to teach the air exercises;
 - ix) aircraft flight manuals and aircraft operating limits;
 - x) hazards involved in simulating system failures and malfunctions in the aircraft;
 - xi) presentation of pilot decision-making concepts; and
 - xii) the use of the Flight Instructor Guide, Flight Training Manual, Lebanese pilot licensing regulations and standards and the Flight Test Standards for Private and Commercial Pilot Licences - Aeroplanes Category.
 - b) An applicant shall pass the written examination Flight Instructor Rating - Aeroplanes, as specified by the Authority.
4. Experience - An applicant shall have successfully completed an approved course of a minimum of 25 hours dual flight training that includes:
 - a) instruction on overall pilot proficiency training,
 - b) the presentation of the exercises contained in the Flight Instructor's Guide, and
 - c) a minimum of 5 hours of training in the teaching of instrument flight skills.
 - d) a maximum of 5 of the 25 hours may be conducted on an approved aeroplane simulator or flight training device.
5. Skill - An applicant shall complete a flight test to the standard specified in the Flight Test Examiner Guide.
6. The holder of a FI-A rating may conduct instruction for the issue of licences and ratings provided the holder meets the following requirements:
 - a) for the issue of a CPL-A, provided that the FI-A has completed at least 500 hours of flight time as a pilot of aeroplanes including at least 200 hours of flight instruction;
 - b) the issue of an instrument rating, provided that the FI-A holds a valid instrument rating and has at least 150 hours flight time in accordance with instrument flight rules, of which up to 50 hours may be instrument ground time in an approved flight simulator; and

- c) the issue of a single-pilot, single or multi-engine class rating, provided that the FI-A has
 - i) completed at least 500 hours flight time as a pilot of aeroplanes, and
 - ii) completed within the 12 months preceding the application at least 15 hours as pilot-in-command on the applicable class of aeroplane.
- d) the issue of a FI-A rating, provided that the FI-A:
 - i) has completed at least 500 hours of instruction in aeroplanes; and
 - ii) has demonstrated to the Authority the ability to instruct a FI-A during a skill test as specified in the Flight Test Examiner Guide; and
 - iii) is authorized by the Authority for this purpose.
- e) has flown within the last 12 months, at least 5 hours as pilot-in-command of the type of aircraft.

s401.46 Flight Instructor Rating Aeroplanes - Restricted Period Requirements

The restrictions specified in 401.46 will be removed by the Authority when:

- a) the holder of a FI-A rating has completed at least 100 hours flight instruction,
- b) has supervised at least 25 student solo flights, and
- c) the supervising FI-A recommends that the restrictions be removed.

s401.47 Flight Instructor Rating Helicopters - Requirements

1. Age - An applicant for a flight instructor rating shall be a minimum of eighteen years of age.
2. Training Pre-requisite - Before being permitted to begin an approved course of ground training for a Flight Instructor - Helicopters (FI-H) rating an applicant shall hold a valid Commercial Pilot Licence - Helicopters or an Airline Transport Pilot Licence - Helicopters:
3. Knowledge -
 - a) An applicant shall have completed an approved technical course of training of at least 25 hours of instruction that includes:
 - i) practical application of the basic principles of learning and techniques of instruction;
 - ii) preparation and use of lesson plans;
 - iii) classroom instructional techniques;
 - iv) use of training aids;
 - v) assessment of student performance, evaluation and testing;
 - vi) procedures for planning and presenting preparatory ground instruction, pre-flight briefings, in-flight instruction, and post-flight debriefings;
 - vii) analysis and correction of student errors;
 - viii) theory of flight required to teach the air exercises;
 - ix) aircraft flight manuals and aircraft operating limits;
 - x) hazards involved in simulating system failures and malfunctions in the aircraft;
 - xi) presentation of pilot decision-making concepts; and

- xii) the use of the Flight Instructor Guide, Flight Training Manual, Lebanese pilot licensing regulations and standards and the Flight Test Standards for Private and Commercial Pilot Licences - Helicopter Category.
 - b) An applicant shall pass the written examination Flight Instructor Rating - Helicopters, as specified by the Authority.
- 4. Experience - An applicant shall have successfully completed an approved course of a minimum of 25 hours dual flight training that includes:
 - a) instruction on overall pilot proficiency training,
 - b) the presentation of the exercises contained in the Flight Instructor's Guide, and
 - c) a minimum of 5 hours of training in the teaching of instrument flight skills.
 - d) a maximum of 5 of the 25 hours may be conducted on an approved helicopter flight simulator or flight training device.
- 5. Skill - An applicant shall complete a flight test to the standard specified in the Flight Examiner Guide.
- 6. The holder of a FI-H rating may conduct instruction for:
 - a) the issue of licences and ratings the issue of a CPL-H, provided that the FI-H has completed at least 500 hours of flight time as a pilot of helicopters including at least 200 hours of flight instruction;
 - b) the issue of type ratings for single-pilot, single-engine helicopters, provided that the FI-H has completed not less than 15 hours on the relevant type in the preceding 12 months;
 - c) the issue of a single-pilot multi-engine type rating, provided that the FI-H has:
 - i) completed at least 1000 hours flight time as a pilot of helicopters, which includes at least 350 hours as a pilot of multi-engine helicopters;
 - ii) completed within the 12 months at least 15 hours flight time on the applicable helicopter type, or a similar type as agreed by the Authority, of which not more than 10 hours may be completed in an approved flight simulator;
 - d) the issue of an instrument rating, provided that the FI-H holds a valid instrument rating and has:
 - i) at least 150 hours flight time in accordance with instrument flight rules, of which up to 50 hours may be instrument ground time in a flight simulator
 - e) the issue of a FI-H rating, provided that the FI-H:
 - i) has completed at least 500 hours of instruction in helicopters; and
 - ii) has demonstrated to the Authority the ability to instruct a FI-H during a skill test as specified in the Flight Test Examiner Guide; and
 - iii) is authorized by the Authority for this purpose.
 - f) has flown within the last 12 months, at least 5 hours as pilot-in-command of the type of aircraft.

s401.48 Flight Instructor Rating-Helicopters - Restricted Period Requirements

The restrictions specified in 401.47 will be removed by the Authority when:

- a) the holder of a FI-H rating has completed at least 100 hours flight instruction,
- b) has supervised at least 25 student solo flights, and

- c) the supervising FI-H recommends that the restrictions be removed.

Appendix A - Private Pilot Ground School Training Syllabus

This Appendix contains a Private Pilot ground training syllabus that meets the requirement so this Sub-part. Flight Training Organizations may request approval of a customized syllabus that meets an equivalent standard. The form of the syllabus may vary, but it should always be in the form of an abstract or digest of the course of training. It also should consist of the blocks of learning so that the course is completed in the most efficient manner.

There are many tried and proven syllabi available that may be used. These are found in various training manuals, approved school syllabi, and in publications available from other state civil aviation authorities and pilot training schools.

Private pilot training courses conducted by a certified Flight Training Organization shall be given in accordance with the course training program that they submitted to the Authority and that was approved as part of their Flight Training Organization Operator Certificate. An approved ground training program is part of this approved training program. Completion of an approved training program is a private pilot licensing requirement.

It is recognized that any practical training syllabus must be flexible, and should be used as a guide. The order of training can be altered, when necessary, to suit the progress of the student and the demands of special circumstances. In departing from the order prescribed by the syllabus, however, it is the responsibility of the Chief Flight Instructor and individual instructors, to consider the relationships of the blocks of learning affected. It is often preferable to skip to a completely different part of the syllabus when the conduct of a scheduled lesson is impossible, rather than proceeding to the next block, which may be predicated completely on skills to be developed during the lesson that is being postponed.

Sample Private Pilot Licence - Aeroplane Ground Training Syllabus

Each lesson of the sample private pilot licence - aeroplane ground training syllabus which follows sets forth a unit of ground school instruction. Neither the time nor the number of ground school periods to be devoted to each lesson is specified. The sequence in which the sample lessons are listed is not necessarily the most desirable one to use in all training situations and may be varied as desired. Each lesson includes an *objective, content, and completion standards*.

LESSON NO. 1

OBJECTIVE. To develop the student's knowledge with regard to the definitions and abbreviations in Part 1 of the Lebanese Aviation Regulations (LARs) and the appropriate regulatory requirements of the Aviation Act and Parts II and IV of the regulations.

CONTENT.

1. LAR, Part 1 – Definitions and abbreviations important to a private pilot.
2. Aircraft registration and Certificate of Airworthiness.
3. LAR, Parts 400 & 401.
 - a) Requirements for licences and ratings.
 - b) Validity periods of pilot licences and ratings.
 - c) Medical certificate requirements.
 - d) Written tests.
 - e) Flight tests.
 - f) Pilot logbooks.

- g) Recency of experience requirements.
- h) Private pilot privileges and limitations.

LESSON NO. 2

OBJECTIVE. To develop the student's knowledge of the pertinent regulatory requirements of Part VI of the LARs and accident reporting rules as they relate to private pilot operations.

CONTENT.

1. LAR, Part VI.
 - a) General operating and flight rules.
 - b) VFR requirements.
 - c) Operation in the vicinity of aerodromes.
 - d) IFR requirements (familiarization).
 - e) Aircraft maintenance rules.
2. Accident reporting requirements.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test, the student demonstrates the ability to locate and use information in the appropriate rule as related to private pilot operations.

LESSON NO. 3

OBJECTIVE. To develop the student's knowledge of the Aeronautical Information Publication and other publications as they relate to VFR operations and to develop competence in using the Lebanese Advisory Circular System.

CONTENT.

1. Aeronautical Information Publication as it relates to:
 - a) Air navigation radio aids.
 - b) Airports and air navigation lighting and marking aids.
 - c) Airspace.
 - d) Air Traffic Control.
 - e) Services available to pilots.
 - f) Airport operations.
 - g) Emergency procedures.
 - h) Operating practices.
 - i) Air Directory (legend).
 - j) Airport facility directory (legend).
 - k) Graphic notices and supplemental data.
2. Authority Advisory Circular System (familiarization).

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test and demonstration, the student displays a basic knowledge of appropriate Parts of the Aeronautical Information Publication and the Authority Advisory Circular System.

LESSON NO. 4

OBJECTIVE. To develop the student's knowledge of the operation of aircraft radios, the use of proper radio phraseology with respect to air traffic control facilities, and to develop competence in the use of the slide rule face of the flight computer and aeronautical charts in planning a VFR cross-country flight.

CONTENT.

Radio communications.
Operation of radio communications equipment.
Ground control.
Tower
ATIS.
Flight service station.
UNICOM.
Technique and phraseology.
ATC light signals.
Flight computer – slide rule face.
Time.
Speed.
Distance.
Fuel consumption.
VFR navigation.
Aeronautical charts.
Measurement of courses.
Pilotage.
Dead reckoning.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test and demonstration, the student displays a basic knowledge of radio communications, ATC facilities, and aeronautical charts, and is able to use the flight computer to solve elementary VFR navigation problems.

LESSON NO. 5

OBJECTIVE. To further develop the student's knowledge of pilotage, dead reckoning, and radio navigation.

CONTENT.

VFR navigation.
Pilotage.
Dead reckoning
Operation of the navigational radio equipment.
VOR.
ADF.
Use of radio aids.
Flight computer – wind face.
Determination of wind correction angle and true heading.
Determination of groundspeed.
Flight computer – slide rule face.

Review time, speed, and distance problems.
Review fuel consumption problems.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test and demonstration, the student displays a basic knowledge of VFR navigation and the use of radio aids. The student should be able to solve fundamental and advanced problems on the flight computer.

LESSON NO. 6

OBJECTIVE. To review Lesson 5 and thereby improve the student's competence in VFR navigation procedures; to introduce advanced VFR radio navigational problems; to develop the student's knowledge of emergency procedures with respect to VFR cross-country flying; and to introduce flight planning.

CONTENT.

Review of Lesson 5.
Use of ADF.
Radar,
Use of VOR, intercepting and maintaining radials.
Emergency procedures.
Diversion to an alternate.
Lost procedures, including the use of radar and DF instructions.
Inflight emergencies, including emergency landings.
Transponder.
DME.
Flight planning.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test and demonstration, the student displays a working knowledge of advanced VFR radio navigational procedures, cross-country emergency procedures, and can accurately plan and plot VFR cross-country flight.

LESSON NO. 7

OBJECTIVE. To further develop the student's competence in flight planning and to acquaint the student with the human factors related to flight.

CONTENT.

1. Flight planning.
2. Human factors related to flight.
 - a) Introduction
 - b) Learning to fly
 - i) The learning attitude
 - ii) Learning techniques
 - c) The brain
 - i) The working of the brain
 - ii) Memory
 - iii) Attention
 - iv) Motivation thinking and problem solving

- v) Expectancy
- d) The body
 - i) Hypoxia.
 - ii) Hyperventilation.
 - iii) Alcohol.
 - iv) Drugs.
 - v) Carbon monoxide.
 - vi) Fatigue.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test, the student displays a basic knowledge of flight planning, the human factors related to flight.

LESSON NO. 8

OBJECTIVE. To further develop the student's knowledge of the human factors and general safety related to flight.

Human factors related to flight (continued).

- a) The eyes
 - i) How we see
 - ii) Factors affecting vision
 - iii) Psychological issues of vision
 - iv) Visual illusions fixation and motion
 - b) The ears
 - i) Physical characteristics of the ears
 - ii) Hearing and communication
 - iii) Orientation and disorientation
 - c) Stress
 - i) What is stress
 - ii) Types of stress
 - iii) Effects of stress
 - iv) preventing and managing stress
 - d) Decision making and judgment
 - e) Good flying practices
2. General safety.
- a) Ground handling of aircraft.
 - b) Fire – on the ground and in the air.
 - c) Collision avoidance precautions.
 - d) Wake turbulence avoidance.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test, the student displays a basic knowledge of the human factors and general safety related to flight.

LESSON NO. 9

OBJECTIVE. To develop the student's knowledge of the fundamentals of weather, as associated with the operation of aircraft.

CONTENT.

1. Atmospheric layers.
2. Pressure.
3. Circulation.
4. Temperature and moisture.
5. Stability and lapse rate.
6. Turbulence.
7. Clouds.
8. Airmasses.
9. Fronts.
10. Aircraft icing.
11. Thunderstorms.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test, the student demonstrates a fundamental knowledge of aviation weather.

LESSON NO. 10

OBJECTIVE. To develop the student's ability to interpret and use weather charts, reports, forecasts, and broadcasts; and to develop the student's knowledge of the procedure for obtaining weather briefings.

CONTENT.

1. Review Lesson 8.
2. Weather charts.
 - a) Weather depiction charts.
 - b) Surface prognostic charts.
3. Aviation weather reports.
 - a) Hourly sequence reports.
 - b) Special surface reports.
 - c) Pilot reports.
 - d) Radar reports
4. Aviation weather broadcasts.
 - a) Transcribed weather broadcasts.
 - b) Inflight weather advisories.
5. Weather briefings.
6. Review requirements of regulations for VFR flight.
7. Aviation weather forecasts.
 - a) Area forecasts.
 - b) Terminal forecasts.
 - c) Winds aloft forecasts and reports.
 - d) Route forecasts.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test and demonstration, the student displays the ability to interpret and use weather charts, reports, forecasts, and broadcasts, and can obtain and understand a weather briefing.

LESSON NO. 11

OBJECTIVE. To further develop the student's knowledge of aviation weather through a review of Lessons 8 and 9; to develop the student's knowledge of Greenwich time; and to develop the student's ability to recognize various weather conditions.

CONTENT.

1. Review of Lessons 8 and 9.
2. Greenwich time.
3. Weather recognition.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test, the student displays a working knowledge of Greenwich time, and a knowledge of how critical weather situations can be recognized both from the ground and during flight.

LESSON NO. 12

OBJECTIVE. To develop the student's knowledge of aeroplane structures, propellers, engines, systems, and the magnetic compass.

CONTENT.

1. Aeroplane structures.
 - a) Construction features.
 - b) Flight control systems.
 - c) Rigging.
2. Propellers.
 - a) Fixed pitch.
 - b) Controllable.
3. Reciprocating aircraft engines.
 - a) Construction features.
 - b) Principle of operation – four stroke cycle.
 - c) Fuel system, including carburetors and fuel injectors.
 - d) Lubrication system.
 - e) Ignition system.
 - f) Engine instruments.
 - g) Operating limitations.
 - h) Malfunctions and remedial actions.
4. Aeroplane hydraulic system.
 - a) Principle of hydraulics.
 - b) Use of hydraulics in airplanes
 - c) Construction features of a simple aeroplane hydraulic system.
 - d) Retractable landing gear and flaps.
 - e) Malfunctions and remedial actions.
5. Aeroplane electrical system.
 - a) Fundamentals of electricity.

- b) Operation of aeroplane electrical power system units.
- c) Electrically operated flight instruments.
- d) Retractable landing gear
- e) Flaps.
- f) Fuses and circuit breakers.
- g) Malfunctions and remedial actions.
- 6. Pilot-static system and instruments.
 - a) Airspeed indicator, including markings.
 - b) Altimeter.
 - c) Vertical-speed indicator.
- 7. Vacuum system and instruments.
 - a) Attitude indicator.
 - b) Heading indicator
 - c) Turn and slip indicator.
- 8. Magnetic compass.
 - a) Errors.
 - b) Use in flight.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test, the student displays a basic understanding of aeroplane structures, engines, systems and instruments.

LESSON NO. 13

OBJECTIVE. To develop the student's knowledge of basic aerodynamics.

CONTENT.

- 1. Forces acting on an aeroplane in flight
 - a) Lift.
 - b) Weight.
 - c) Thrust.
 - d) Drag.
- 2. Airfoils.
 - a) Angle of incidence.
 - b) Angle of attack.
 - c) Bernoulli's Principle.
 - d) Newton's Laws.
- 3. Factors affecting lift and drag.
 - a) Wing area.
 - b) Airfoil shape.
 - c) Angle of attack
 - d) Airspeed.
 - e) Air density.
- 4. Function of the controls.
 - a) Axes of rotation – longitudinal, lateral and vertical.
 - b) Primary controls – ailerons, elevators and rudder.
 - c) Secondary controls – trim tabs.
 - d) Flaps and other high-lift devices.
- 5. Stability.
 - a) Static stability.
 - b) Dynamic stability.

6. Loads and load factors.
 - a) Effect of bank angle on stall speed.
 - b) Effect of turbulence on load factor.
 - c) Effect of speed on load factor.
 - d) Effect of load factor on stall speed.
7. Torque.
 - a) Gyroscopic reaction.
 - b) Asymmetrical loading of propeller ("P" factor).
 - c) Slipstream rotation.
 - d) Torque reaction.

COMPLETION STANDARD. The lesson will have been successfully completed when, by an oral test, the student displays an understanding of basic aerodynamics.

LESSON NO. 14

OBJECTIVE. To develop the student's knowledge of the fundamental flight maneuvers.

CONTENT.

1. Straight-and-level- flight.
 - a) Pitch, bank and yaw.
 - b) Trim.
 - c) Integrated use of outside references and flight instruments.
2. Level turns.
 - a) Forces acting in a turn.
 - b) Aileron drag and coordination.
 - c) Speed of roll.
 - d) Slips and skids.
 - e) Integrated use of outside references and flight instruments.
3. Climbs and climbing turns.
 - a) Best rate-of-climb airspeed.
 - b) Best angle-of-climb airspeed.
 - c) Torque and coordination
 - d) Trim.
4. Glides and gliding turns.
 - a) Effect of high lift devices.
 - b) Most efficient glide speed.
 - c) Coordination.
 - d) Trim.
5. Descents with power.
 - a) Power settings and airspeeds.
 - b) Trim.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test, the student displays a basic understanding of the fundamental flight maneuvers.

LESSON NO. 15

OBJECTIVE. To develop the student's ability to properly use Pilot's Operating Handbooks and Approved Aeroplane Flight Manuals; to develop the student's ability to perform basic weight and

balance computations; and to develop the student's understanding of fundamental flight training maneuvers.

CONTENT.

1. Use of data in Pilot's Operating Handbook or Approved Aeroplane Flight Manual.
 - a) Takeoff and landing distances.
 - b) Fuel consumption and related charts.
 - c) Maximum range power settings.
 - d) Maximum endurance power settings.
2. Weight and balance.
 - a) Terms and definitions.
 - b) Effects of adverse balance.
 - c) Finding loaded weight.
 - d) Finding center of gravity – when weight is added or removed – when weight is shifted.
3. Maneuvering at minimum controllable air speed.
4. Stalls.
 - a) Theory of stalls.
 - b) Imminent stalls – power-on and power-off.
 - c) Full stalls – power-on and power-off.
5. Flight maneuvering by reference to ground objects.
 - a) "S" turns across a road.
 - b) Rectangular course.
 - c) Eight's along a road.
 - d) Eight's across a road.
 - e) Turns around a point.
6. Takeoffs and landings.
 - a) Normal and crosswind takeoffs and landings.
 - b) Soft field takeoffs and landings.
 - c) Short field takeoffs and landings.
 - d) Go-arounds or rejected landings.
7. Introduction to attitude instrument flying. Maneuvering by reference to flight
 - a) Instruments – pitch , power, bank and trim control in the performance of basic flight maneuvers.
 - b) Straight-and-level flight.
 - c) Turns.
 - d) Climbs.
 - e) Descents.
 - f) Recovery from unusual attitudes.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test and demonstration, the student displays a basic knowledge of Pilot's Operating Handbooks and Approved Aeroplane Flight Manuals; when the student is able to perform basic weight and balance computations; and when the student has a working knowledge of the performance of fundamental flight training maneuvers.

Reference Documents

1. Lebanese Civil Aviation Regulation
 - a) Part I - General
 - b) Part II - Aircraft Registration and Marking
 - c) Part IV - Personnel Licensing

- d) Part V - Aircraft Maintenance
- e) Part VI - General Operating and Flight Rules
- 2. Lebanese Aeronautical Information Publication
- 3. Human Factors For Aviation - Transport Canada Safety and Security
 - a) Basic Handbook - TP 12863
 - b) Instructor's Guide - TP 12865
- 4. Aeroplane Flight Training Manual - Transport Canada Aviation & Gage Publishing Company, Canada

Sample Private Pilot Licence - Helicopter Ground Training Syllabus

Each lesson of the sample private pilot licence - helicopter ground training syllabus which follows sets forth a unit of ground school instruction. Neither the time nor the number of ground school periods to be devoted to each lesson is specified. The sequence in which the sample lessons are listed is not necessarily the most desirable one to use in all training situations and may be varied as desired. Each lesson includes an *objective*, *content*, and *completion standards*.

LESSON NO. 1

OBJECTIVE. To develop the student's knowledge with regard to the definitions and abbreviations in Part 1 of the Lebanese Aviation Regulations (LARs) and the appropriate regulatory requirements of the Aviation Act and Parts II and IV of the regulations.

CONTENT.

1. LAR, Part 1 – Definitions and abbreviations important to a private pilot
2. Aircraft registration and Certificate of Airworthiness.
3. LAR, Parts 400 & 401.
 - a) Requirements for licences and ratings.
 - b) Validity periods of pilot licences and ratings.
 - c) Medical certificate requirements.
 - d) Written tests.
 - e) Flight tests.
 - f) Pilot logbooks.
 - g) Recency of experience requirements.
 - h) Private pilot privileges and limitations.

LESSON NO. 2

OBJECTIVE. To develop the student's knowledge of the pertinent regulatory requirements of Part VI of the LARS and accident reporting rules as they relate to private pilot operations.

CONTENT.

1. LAR, Part VI.
 - a) General operating and flight rules.
 - b) VFR requirements.
 - c) Operation in the vicinity of aerodromes.
 - d) IFR requirements (familiarization).
 - e) Aircraft maintenance rules.
2. Accident reporting requirements.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test, the student demonstrates the ability to locate and use information in the appropriate rule as related to private pilot operations.

LESSON NO. 3

OBJECTIVE. To develop the student's knowledge of the Aeronautical Information Publication and other publications as they relate to VFR operations and to develop competence in using the Lebanese Advisory Circular System.

CONTENT.

1. Aeronautical Information Publication as it relates to:
 - a) Air navigation radio aids.
 - b) Airports and air navigation lighting and marking aids.
 - c) Airspace.
 - d) Air Traffic Control.
 - e) Services available to pilots.
 - f) Airport operations.
 - g) Emergency procedures.
 - h) Operating practices.
 - i) Air Directory (legend).
 - j) Airport facility directory (legend).
 - k) Graphic notices and supplemental data.
2. Authority Advisory Circular System (familiarization).

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test and demonstration, the student displays a basic knowledge of appropriate Parts of the Aeronautical Information Publication and the Authority Advisory Circular System.

LESSON NO. 4

OBJECTIVE. To develop the student's knowledge of the operation of aircraft radios, the use of proper radio phraseology with respect to air traffic control facilities, and to develop competence in the use of the slide rule face of the flight computer and aeronautical charts in planning a VFR cross-country flight.

CONTENT.

Radio communications.
Operation of radio communications equipment.
Ground control.
Tower
ATIS.
Flight service station.
UNICOM.
Technique and phraseology.
ATC light signals.
Flight computer – slide rule face.
Time.
Speed.
Distance.
Fuel consumption.
VFR navigation.
Aeronautical charts.
Measurement of courses.

Pilotage.
Dead reckoning.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test and demonstration, the student displays a basic knowledge of radio communications, ATC facilities, and aeronautical charts, and is able to use the flight computer to solve elementary VFR navigation problems.

LESSON NO. 5

OBJECTIVE. To further develop the student's knowledge of pilotage, dead reckoning, and radio navigation.

CONTENT.

VFR navigation.
Pilotage.
Dead reckoning
Operation of the navigational radio equipment.
VOR.
ADF.
Use of radio aids.
Flight computer – wind face.
Determination of wind correction angle and true heading.
Determination of groundspeed.
Flight computer – slide rule face.
Review time, speed, and distance problems.
Review fuel consumption problems.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test and demonstration, the student displays a basic knowledge of VFR navigation and the use of radio aids. The student should be able to solve fundamental and advanced problems on the flight computer.

LESSON NO. 6

OBJECTIVE. To review Lesson 5 and thereby improve the student's competence in VFR navigation procedures; to introduce advanced VFR radio navigational problems; to develop the student's knowledge of emergency procedures with respect to VFR cross-country flying; and to introduce flight planning.

CONTENT.

Review of Lesson 5.
Use of ADF.
Radar.
Use of VOR, intercepting and maintaining radials.
Emergency procedures.
Diversion to an alternate.
Lost procedures, including the use of radar and DF instructions.
Inflight emergencies, including emergency landings.

Transponder.
DME.
Flight planning.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test and demonstration, the student displays a working knowledge of advanced VFR radio navigational procedures, cross-country emergency procedures, and can accurately plan and plot VFR cross-country flight.

LESSON NO. 7

OBJECTIVE. To further develop the student's competence in flight planning and to acquaint the student with the human factors related to flight.

CONTENT.

1. Flight planning.
2. Human factors related to flight.
 - a) Introduction.
 - b) Learning to fly.
 - i) The learning attitude.
 - ii) Learning techniques.
 - c) The brain.
 - i) The working of the brain.
 - ii) Memory.
 - iii) Attention.
 - iv) Motivation thinking and problem solving.
 - v) Expectancy.
 - d) The body.
 - i) Hypoxia.
 - ii) Hyperventilation.
 - iii) Alcohol.
 - iv) Drugs.
 - v) Carbon monoxide.
 - vi) Fatigue.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test, the student displays a basic knowledge of flight planning, the human factors related to flight.

LESSON NO. 8

OBJECTIVE. To further develop the student's knowledge of the human factors and general safety related to flight.

1. Human factors related to flight (continued).
 - a) The eyes.
 - i) How we see.
 - ii) Factors affecting vision.
 - iii) Psychological issues of vision.
 - iv) Visual illusions fixation and motion.

- b) The ears.
 - i) Physical characteristics of the ears.
 - ii) Hearing and communication.
 - iii) Orientation and disorientation.
 - c) Stress.
 - i) What is stress.
 - ii) Types of stress.
 - iii) Effects of stress.
 - iv) preventing and managing stress.
 - d) Decision making and judgment.
 - e) Good flying practices.
2. General safety.
- a) Ground handling of aircraft.
 - b) Fire – on the ground and in the air.
 - c) Collision avoidance precautions.
 - d) Wake turbulence avoidance.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test, the student displays a basic knowledge of the human factors and general safety related to flight.

LESSON NO. 9

OBJECTIVE. To develop the student's knowledge of the fundamentals of weather, as associated with the operation of aircraft.

CONTENT.

- 1. Atmospheric layers.
- 2. Pressure.
- 3. Circulation.
- 4. Temperature and moisture.
- 5. Stability and lapse rate.
- 6. Turbulence.
- 7. Clouds.
- 8. Airmasses.
- 9. Fronts.
- 10. Aircraft icing.
- 11. Thunderstorms.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test, the student demonstrates a fundamental knowledge of aviation weather.

LESSON NO. 10

OBJECTIVE. To develop the student's ability to interpret and use weather charts, reports, forecasts, and broadcasts; and to develop the student's knowledge of the procedure for obtaining weather briefings.

CONTENT.

1. Review Lesson 8.
2. Weather charts.
 - a) Weather depiction charts.
 - b) Surface prognostic charts.
3. Aviation weather reports.
 - a) Hourly sequence reports.
 - b) Special surface reports.
 - c) Pilot reports.
 - d) Radar reports
4. Aviation weather broadcasts.
 - a) Transcribed weather broadcasts.
 - b) Inflight weather advisories.
5. Weather briefings.
6. Review requirements of regulations for VFR flight.
7. Aviation weather forecasts.
 - a) Area forecasts.
 - b) Terminal forecasts.
 - c) Winds aloft forecasts and reports.
 - d) Route forecasts.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test and demonstration, the student displays the ability to interpret and use weather charts, reports, forecasts, and broadcasts, and can obtain and understand a weather briefing.

LESSON NO. 11

OBJECTIVE. To further develop the student's knowledge of aviation weather through a review of Lessons 8 and 9; to develop the student's knowledge of Greenwich time; and to develop the student's ability to recognize various weather conditions.

CONTENT.

1. Review of Lessons 8 and 9.
2. Greenwich time.
3. Weather recognition.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test, the student displays a working knowledge of Greenwich time, and a knowledge of how critical weather situations can be recognized both from the ground and during flight.

LESSON NO. 12

OBJECTIVE. To develop the student's knowledge of helicopter structures, propellers, engines, systems, and the magnetic compass.

CONTENT.

1. Helicopter structures.
 - a) Construction features.
 - b) Flight control systems.
 - c) Rigging.
2. Rotors.
 - a) Types.
 - b) Blades.
3. Helicopter power plants.
 - a) Piston engines.
 - i) Principle of operation – four stroke cycle.
 - ii) Fuel system, including carburetors and fuel injectors.
 - iii) Lubrication system.
 - iv) Ignition system.
 - v) Engine instruments.
 - vi) Operating limitations.
 - vii) Malfunctions and remedial actions.
 - b) Turbine engines.
 - i) Principle of operation.
 - ii) Fuel systems.
 - iii) Ignition system.
 - iv) Lubrication system.
 - v) Engine controls.
 - vi) Engine instruments.
 - vii) Operating limitations.
 - viii) Malfunctions and remedial actions.
4. Helicopter electrical system.
 - a) Fundamentals of electricity.
 - b) Operation of Helicopter electrical power system units.
 - c) Electrically operated flight instruments.
 - d) Fuses and circuit breakers.
 - e) Malfunctions and remedial actions.
5. Pilot-static system and instruments.
 - a) Airspeed indicator, including markings.
 - b) Altimeter.
 - c) Vertical-speed indicator.
6. Vacuum system and instruments.
 - a) Attitude indicator.
 - b) Heading indicator.
 - c) Turn and slip indicator.
7. Magnetic compass.
 - a) Errors.
 - b) Use in flight.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test, the student displays a basic understanding of helicopter structures, engines, systems and instruments.

LESSON NO. 13

OBJECTIVE. To develop the student's knowledge of basic aerodynamics.

CONTENT.

1. The atmosphere.
 - a) Composition and structure.
 - b) ICAO standard atmosphere.
 - c) Atmospheric pressure.
2. Airflow around a body, sub-sonic.
 - a) Air resistance and air density.
 - b) Boundary layer.
 - c) Friction forces.
 - d) Laminar and turbulent flow.
 - e) Bernoulli's principle - venturi effect.
3. Airflow about a two dimensional airfoil.
 - a) Airflow around a flat plate.
 - b) Airflow around a curved plate (airfoil).
 - c) Description of airfoil cross section.
 - d) Lift and drag.
 - e) Cl and Cd and their relationship to angle of attack.
4. Three dimensional flow about an airfoil.
 - a) Airfoil shapes and wing platforms.
 - b) Induced drag.
 - i) Downwash angle, vortex drag, ground effect.
 - ii) Aspect ratio.
 - c) Parasite (profile) drag.
 - i) Form, skin friction and interference drag.
 - d) Lift/drag ratio.
5. Rotor aerodynamics.
 - a) Blade movement (feathering, flapping, dragging).
 - b) Forces acting on rotors (blades lift/drag, weight, rotor thrust, H-force).
 - c) Forces acting on entire helicopter (M.R. thrust, helicopter weight, fuselage drag, tail rotor thrust).
 - d) Finite blade element and momentum theory.
 - e) Advancing blade high mach, retreating blade high incidence.
 - f) Distribution of lift.
 - g) Autorotation anti-torque.
6. Flying controls.
 - a) The three planes.
 - i) Pitching about the lateral axis.
 - ii) Rolling about the longitudinal axis.
 - iii) Yawing about the normal axis.
 - b) Effects of cyclic, collective and rudder pedal inputs.
 - c) Stabilizer and rudder.
 - d) Control in pitch, roll and yaw.
 - e) Cross coupling, roll and yaw.
 - f) Effect of rotor configuration on control power.
7. Stability.
 - a) Definitions of static and dynamic stability.

- b) Longitudinal stability.
 - c) Centre of gravity effect on control in pitch.
 - d) Lateral and directional stability.
 - e) Interrelationship, lateral and directional stability.
8. Load factor and manoeuvres.
- a) Structural considerations.
 - b) Manoeuvring and gust envelope.
 - c) Limiting load factors.
 - d) Changes in load factor in turns and pull-ups.
 - e) Vibrations, controls feedback.
 - f) In-flight precautions.
 - g) H/V diagram, take off and landing.
9. Stress loads on the ground.
- a) Side loads on the landing gear.
 - b) Landing.
 - c) Taxiing, precautions during turns.
10. Helicopter specific hazards.
- a) Ground resonance.
 - b) Blade stall.
 - c) Mast bumping.
 - d) Vortex ring (main and tail rotor).
 - e) Settling with power.
 - f) Dynamic and static rollover.

COMPLETION STANDARD. The lesson will have been successfully completed when, by an oral test, the student displays an understanding of basic aerodynamics.

LESSON NO. 14

OBJECTIVE. To develop the student's knowledge of the fundamental flight maneuvers.

CONTENT.

1. Effects of controls.
 - a) Function of flying controls, primary and secondary effect.
 - b) Effect of airspeed.
 - c) Effect of power.
 - d) Effect of sideslip.
 - e) Effect of control friction.
2. Power and attitude changes.
 - a) Power changes with constant RPM to be focused in the cockpit.
 - b) Altitude and speed changes at constant power.
3. Straight and level.
 - a) At normal cruising power, attaining and maintaining straight and level flight.
 - b) Control in pitch, including use of control friction and/or trim.
 - c) Lateral level, direction and balance, yawstring use.
 - d) At selected airspeeds (use of power).
4. Climbing.
 - a) Entry, maintaining the normal and Max rate climb, leveling off.
 - b) Leveling off at selected altitudes.
 - c) Maximum angle of climb.
5. Descending.

- a) Entry, maintaining and leveling off.
 - b) Leveling off at selected altitudes.
 - c) Descent (including effect of power and airspeed).
6. Turning.
- a) Entry and maintaining medium level turns.
 - b) Resuming straight flight.
 - c) Faults in the turn - balance.
 - d) Climbing turns.
 - e) Descending turns.
7. Hovering.
- a) Effect of wind direction on helicopter attitude and control margin.
8. Transition from hover to climb and vice versa.
- a) Ground effect, transitional lift and their effects.
 - b) Flapback and its effect.
 - c) Effect of wing direction during transition from hover to climb and vice versa.
9. Autorotation.
- a) Straight autorotation from level flight.
 - b) Control of rotor RPM.
 - c) Control of speed, rate of descent and ground distance.
 - d) Recovery, power flight (throttle over-ride during re-engagement).
 - e) Low/medium turns in autorotation.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test, the student displays a basic understanding of the fundamental flight maneuvers.

LESSON NO. 15

OBJECTIVE. To develop the student's ability to properly use Pilot's Operating Handbooks and Approved Helicopter Flight Manuals and to develop the student's ability to perform basic weight and balance computations.

CONTENT.

1. Use of data in Pilot's Operating Handbook or Approved Helicopter Flight Manual.
 - a) Takeoff and landing limitations.
 - b) Fuel consumption and related charts.
 - c) Maximum range power settings.
 - d) Maximum endurance power settings.
2. Weight and balance.
 - a) Terms and definitions.
 - b) Effects of adverse balance.
 - c) Finding loaded weight.
 - d) Finding center of gravity – when weight is added or removed – when weight is shifted.

COMPLETION STANDARDS. The lesson will have been successfully completed when, by an oral test and demonstration, the student displays a basic knowledge of Pilot's Operating Handbooks and Approved Helicopter Flight Manuals and when the student is able to perform basic weight and balance computations.

Reference Documents

1. Lebanese Civil Aviation Regulation
 - a) Part I - General
 - b) Part II - Aircraft Registration and Marking
 - c) Part IV - Personnel Licensing
 - d) Part V - Aircraft Maintenance
 - e) Part VI - General Operating and Flight Rules
2. Lebanese Aeronautical Information Publication
3. Human Factors For Aviation - Transport Canada Safety and Security
 - a) Basic Handbook - TP 12863
 - b) Instructor's Guide - TP 12865
4. Helicopter Flight Training Manual - Transport Canada Aviation & Gage Publishing Company, Canada.

Appendix B Commercial Pilot Training Program

Flight Training Organizations may request approval of a training program based on a proven commercial pilot training program such as the Jeppesen Sanderson, Inc. commercial pilot training program or a customized syllabus that meets an equivalent standard. If the training program is based on a program such as the Jeppesen Sanderson, Inc. program, it shall be augmented to include the Lebanese Aviation Regulations (LARs), the Lebanese AIP, related local procedures and related considerations.

The form of the syllabus may vary, but it should always be in the form of an abstract or digest of the course of training. It also should consist of the blocks of learning so that the course is completed in the most efficient manner.

There are many tried and proven syllabi available that may be used. These are found in various training manuals, approved school syllabi, and in publications available from other state civil aviation authorities and pilot training schools.

Commercial pilot training courses conducted by a certified Flight Training Organization shall be given in accordance with the course training program that they submitted to the Authority and that was approved as part of their Flight Training Organization Operator Certificate. An approved ground training program is part of this approved training program. Completion of an approved ground school training program is a commercial pilot licensing requirement.

It is recognized that any practical training syllabus must be flexible, and should be used as a guide. The order of training can be altered, when necessary, to suit the progress of the student and the demands of special circumstances. In departing from the order prescribed by the syllabus, however, it is the responsibility of the Chief Flight Instructor and individual instructors, to consider the relationships of the blocks of learning affected. It is often preferable to skip to a completely different part of the syllabus when the conduct of a scheduled lesson is impossible, rather than proceeding to the next block, which may be predicated completely on skills to be developed during the lesson that is being postponed.

Appendix C Multi-engine Aeroplane Class Rating Training Syllabus

Flight Training Organizations may request approval of a training program based on a proven multi-engine aeroplane class rating training program such as the Jeppesen Sanderson, Inc. commercial pilot training program or a customized syllabus that meets an equivalent standard. If the training program is based on a program such as the Jeppesen Sanderson, Inc. program, it shall be augmented to include the Lebanese regulatory and local requirements and considerations.

The form of the syllabus may vary, but it should always be in the form of an abstract or digest of the course of training. It also should consist of the blocks of learning so that the course is completed in the most efficient manner.

There are many tried and proved syllabi available which may be used. These are found in various training manuals, approved school syllabi, and in publications available from other state civil aviation authorities and pilot training schools.

Multi-engine aeroplane class rating training courses conducted by a certified flight training organization shall be given in accordance with the course training program that they submitted to the Authority and that was approved as part of their Flight Training Organization Operator Certificate. Completion of an approved training program is a Multi-engine Aeroplane class rating licensing requirement.

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