

GOVERNO DE MACAU**Portaria n.º 227/95/M****de 7 de Agosto**

O Decreto-Lei n.º 36/95/M, de 7 de Agosto, estabelece os princípios gerais que enquadram a actividade de aviação civil em Macau. Importa agora dar execução ao referido diploma, designadamente no que respeita à aprovação do Regulamento de Navegação Aérea de Macau, prevista no n.º 3 do artigo 9.º daquele diploma.

Ouvido o Conselho Consultivo;

Ao abrigo do disposto no n.º 3 do artigo 9.º do Decreto-Lei n.º 36/95/M, de 7 de Agosto, e nos termos da alínea c) do n.º 1 do artigo 16.º do Estatuto Orgânico de Macau, o Governador determina:

Artigo 1.º É aprovado o Regulamento de Navegação Aérea de Macau, adiante designado por RNAM, o qual se publica em anexo à presente portaria e que dela faz parte integrante.

Artigo 2.º O presidente da Autoridade de Aviação Civil de Macau, adiante designada por AACM, é autorizado a proceder à actualização técnica do RNAM sempre que razões de segurança do transporte aéreo o exijam.

Artigo 3.º As actualizações técnicas a que se refere o artigo anterior são incorporadas na publicação oficial do RNAM quando se proceder à sua revisão periódica.

Artigo 4.º A AACM deve promover as medidas necessárias visando a adequada e permanente divulgação do RNAM e das suas actualizações técnicas pelos potenciais utilizadores do Aeroporto Internacional de Macau.

Artigo 5.º Até 19 de Dezembro de 1999, a nacionalidade das aeronaves registadas em Macau é definida pelas letras «CS» em maiúsculas, seguidas da matrícula constituída por um grupo de três letras maiúsculas, organizado em série, a atribuir pela AACM, nos termos previstos no RNAM.

Artigo 6.º As taxas que constituem a primeira e segunda parte do Anexo 12.º ao RNAM e devidas por serviços prestados pela AACM no âmbito daquele Regulamento, são objecto das portarias a que se referem os artigos 12.º e 16.º do Decreto-Lei n.º 36/95/M, de 7 de Agosto.

Artigo 7.º As sanções aplicáveis pelo incumprimento das disposições do RNAM constituem o seu Anexo 13.º, nos termos do artigo 28.º do Decreto-Lei n.º 36/95/M, de 7 de Agosto.

Artigo 8.º — 1. O presidente da AACM é autorizado a mandar publicar a carta definidora do espaço aéreo sob responsabilidade delegada em Macau, bem como os requisitos mínimos de navegação aérea exigíveis às aeronaves que nele operem.

2. A carta e os requisitos mínimos referidos no número anterior constituem o Anexo 16.º ao RNAM.

Governo de Macau, aos 3 de Agosto de 1995.

Publique-se.

O Governador, *Vasco Rocha Vieira*.

澳門政府**訓令 第227/95/M號****八月七日**

八月七日第36/95/M號法令制定澳門民用航空業務須遵守之一般原則。現有必要執行該法規，尤其應核准該法規第九條第三款所規定之《澳門空中航行規章》。

經聽取諮詢會意見後；

總督根據八月七日第36/95/M號法令第九條第三款之規定及《澳門組織章程》第十六條第一款 c 項之規定，命令：

第一條 核准《澳門空中航行規章》（葡文縮寫為 RNAM），該規章附於本訓令並成為其組成部分。

第二條 許可澳門民用航空局（葡文縮寫為 AACM）局長對《澳門空中航行規章》進行技術性調整，但僅以空中運輸安全之理由為限。

第三條 在定期修訂《澳門空中航行規章》時，應將上條所指之技術性調整載入正式公布之規章文本內。

第四條 澳門民用航空局應採取必要措施，以便將《澳門空中航行規章》及其技術性調整，向可能使用澳門國際機場之人士作適當及長期推介。

第五條 一九九九年十二月十九日之前，在澳門登記之航空器之國籍以“CS”大寫字母表明，其後為一組按字母順序之三個大寫字母組成之註冊號，而該註冊號由澳門民用航空局根據《澳門空中航行規章》之規定給予。

第六條 《澳門空中航行規章》附件十二之第一及第二部分規定之對澳門民用航空局在該規章範圍內所提供服務而應繳之費用，由八月七日第36/95/M號法令第十二條及第十六條所指之訓令訂定。

第七條 根據八月七日第36/95/M號法令第二十八條之規定，對不遵守《澳門空中航行規章》者所科之處罰，載於該規章之附件十三內。

第八條 一、許可澳門民用航空局局長命令公布確定澳門空域之圖及對在該空域操作之航空器所要求之最基本航行要件。

二、上款所指之圖及要件，載於《澳門空中航行規章》之附件十六內。

一九九五年八月三日於澳門政府

命令公佈

總督 韋奇立

AIR NAVIGATION REGULATION OF MACAU

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FORWARD

A forward to the Air Navigation Regulation is proposed with a view to pre-empting any confusions that might appear about Macau's position as a non-sovereign state as a result of enacting this Air Navigation Regulation by Macau. This Air Navigation Regulation of Macau is enacted upon the authority entrusted to Macau jointly by the Government of the Portuguese Republic and the Government of the People's Republic of China, in accordance with the Sino-Portuguese Joint Declaration on the question of Macau, taking into consideration that Macau, being part of China shall still be under Portuguese administration until December 19, 1999 before it become a Special Administrative Region of the People's Republic of China as from December 20th, 1999.

As Macau stands in a non-sovereign status position as stated above, the expressions in its Air Navigation Regulation of a Contracting State (to the Chicago Convention), a country or State etc., do not in any way imply Macau itself being a Contracting State (to the Chicago Convention), a State or country in its relationship vis-à-vis other Contracting States, States or countries and should not be construed or taken as such.

Regarding aircraft nationality and registration mark, aircraft registered in Macau before December 19, 1999, shall come under a sub-registration book allocated to Macau by the Government of the Portuguese Republic, accordingly, aircraft nationality mark is CS and registration mark is MXX^{} with a hyphen between the nationality and registration marks. After December 19, 1999, the aircraft nationality and registration marks displayed on Macau registered aircraft shall be converted into a sub-registration book allocated to Macau by the Government of the People's Republic of China. Accordingly, the aircraft nationality mark is B, and registration mark is MXX^{*}, with a hyphen between the nationality and registration marks.*

Based on the above mentioned agreement between the Government of the Portuguese Republic and the Government of the People's Republic of China, the Civil Aviation Authority of Macau shall have the authority and power corresponding to its status with jurisdiction over all the civil air transport activities in Macau.

* XX represent Roman letters

Part I

PRELIMINARY

1. This Regulation may be cited as the *Air Navigation Regulation of Macau*.

2. (1) In this Regulation, unless the context otherwise requires:

"*aerial work*" means any purpose (other than public transport) for which an aircraft is flown if hire or reward is given or promised in respect of the flight or for the purpose of the flight;

"*aerial work aircraft*" means an aircraft (other than a public transport aircraft) flying, or intended by the operator to fly, for the purpose of aerial work;

"*aerial work undertaking*" means an undertaking whose business includes the performance of aerial work;

"*aerobatic manoeuvres*" includes loops, spins, rolls, bunts, stall turns, inverted flying and any other similar manoeuvre;

"*aerodrome*" means any area of land or water designed, equipped, set apart or commonly used for affording facilities for the landing and departure of aircraft and includes any area or space whether on the ground, on the roof of a building or elsewhere which is designed, equipped or set apart for affording facilities for the landing and departure of aircraft capable of descending or climbing vertically but shall not include any area the use of which for affording facilities for the landing and departure of aircraft has been abandoned and has not been resumed;

"*aerodrome traffic zone*", in relation to any aerodrome, means defined airspace, which is notified, around an aerodrome for the protection of aerodrome traffic;

"*aeronautical light*" means any light established for the purpose of aiding air navigation;

"*aeronautical radio station*" means a radio station on the surface which transmits or receives signals for the purpose of assisting aircraft;

"*air traffic control unit*" means an entity appointed by the Civil Aviation Authority of Macau, or by any entity maintaining an aerodrome, to give instructions or advice or both by means of radio and visual signals to aircraft in the interests of safety, and "air traffic control service" shall be construed accordingly;

"*air transport undertaking*" means an undertaking whose business includes the carriage by air of passengers or cargo for hire or reward;

"*appropriate aeronautical radio station*" means, in relation to an aircraft, an aeronautical radio station serving the area in which the aircraft is for the time being;

"*appropriate air traffic control unit*" means, in relation to the aircraft, the air traffic control unit serving the area in which the aircraft is for the time being;

"*authorised entity*" means any entity authorised by the Civil Aviation Authority of Macau either generally or in relation to a particular case or class of cases, and references to an authorised entity include references to the holder for the time being of any office designated by the Civil Aviation Authority of Macau;

"*beneficial interests*" means interests arising under contract and other legal interests;

"*cabin attendant*", in relation to an aircraft, means a person on a flight for the purpose of public transport, carried for the purpose of performing in the interest of the safety of passengers, duties to be assigned by the operator or the commander of the aircraft but who shall not act as a member of the flight crew;

"*cargo*" includes mail and animals;

"*Certificate of Airworthiness*" includes any validation thereof and any flight manual or performance schedule relating to the Certificate of Airworthiness;

"*certificate of maintenance review*" means a certificate of maintenance review issued under paragraph 9;

"*certificate of release to service*" means a certificate of release to service issued under paragraph 10;

"*commander*", in relation to an aircraft, means the member of the flight crew designated as commander of that aircraft by the operator thereof, or, failing such a person, the person who is for the time being the pilot in command of the aircraft;

"*competent authority*" means, in relation to Macau, the Civil Aviation Authority of Macau, and, in relation to any other country or territory, the authority responsible under the law of that country or territory for promoting the safety of civil aviation;

"*congested area*", in relation to a city, town or settlement, means any area which is substantially used for residential, industrial, commercial or recreational purposes;

"*Contracting State*" means any country which is a party to the Chicago Convention;

"*controlled airspace*" means control areas and control zones;

"*control area*" means air space which has been notified as such and which extends upwards from a notified altitude;

"*control zone*" means air space which has been notified as such and which extends upwards from the surface;

"*co-pilot*", in relation to an aircraft, means a pilot who in performing his duties as such is subject to the direction of another pilot carried in the aircraft;

"*crew*" means a member of the flight crew, a person carried on the flight deck who is appointed by the operator of the aircraft to give or to supervise the training, experience, practice and periodical tests required in respect of the flight crew under paragraph 26 (2) or a cabin attendant;

"*flight*" and "*to fly*" have the meanings respectively assigned to them by sub-paragraph (2);

"*flight crew*", in relation to an aircraft, means those members of the crew of the aircraft who respectively undertake to act as pilot, flight navigator, flight engineer and flight radio operator of the aircraft;

"*flight level*" means one of a series of levels of equal atmospheric pressure, separated by notified intervals and each expressed as the number of hundred of feet which would be indicated

at that level on a pressure altimeter calibrated in accordance with the International Standard Atmosphere and set to 1013.2 millibars;

"*flight recording system*" means a system comprising either a flight data recorder or a cockpit voice recorder or both;

"*flight simulator*" means apparatus by means of which flight conditions in an aircraft are simulated on the ground;

"*flight visibility*" means the visibility forward from the flight deck of an aircraft in flight;

"*Instrument Flight Rules*" means Instrument Flight Rules contained in Part VI of the Eleventh Schedule;

"*Instrument Meteorological Conditions*" means weather precluding flight in compliance with the Visual Flight Rules;

"*to land*" in relation to aircraft includes to alight on water;

"*legal personal representative*" means an executor, administrator or other representative of a deceased person;

"*license*" includes any certificate of competency or certificate of validity issued with the license or required to be held in connection with the license by the law of the country or territory in which the license is granted;

"*license for public use*" has the meaning assigned to it by paragraph 69 (1);

"*licensed aerodrome*" means an aerodrome licensed under this Regulation;

"*life jacket*" includes any device designed to support a person individually in or on water;

"*log book*", in the case of an aircraft log book, engine log book or variable pitch propeller log book includes a record kept either in a book or by any other means approved by the Civil Aviation Authority of Macau in any particular case;

"*Macau registered aircraft*" means an aircraft which is registered in Macau;

"*maximum total weight authorised*", in relation to an aircraft, means the maximum total weight of the aircraft and its contents at which the aircraft may take off anywhere in the world in the most favourable circumstances in accordance with the Certificate of Airworthiness in force in respect of the aircraft;

"*military aircraft*" includes the naval, military or air force aircraft of any country;

"*nautical mile*" means the International Nautical Mile which is a distance of 1,852 metres;

- "*night*" means the time when the depression of the center of the sun is not less than 12 degrees below the horizon;
- "*notified*" means shown in publications issued in Macau entitled Notams (Notices to Airmen), Information Circulars, Aeronautical Information Publications, Macau Airworthiness Notices (MAN), Macau Air Safety Publications (MASP) and Macau Airworthiness Requirements (MAR) or any other official publication so issued for the purpose of enabling any of the provisions of this Regulation to be complied with;
- "*operator*" has the meaning assigned to it by sub-paragraph (3);
- "*pilot-in-command*", in relation to an aircraft, means a person who for the time being is in charge of the piloting of the aircraft without being under the direction of any other pilot in the aircraft;
- "*prescribed*" means prescribed by regulations made by the Civil Aviation Authority of Macau under this Regulation;
- "*pressurised aircraft*" means an aircraft provided with means of maintaining in any compartment thereof a pressure greater than that of the surrounding atmosphere;
- "*public transport*" has the meaning assigned to it by sub-paragraph (4);
- "*public transport aircraft*" means an aircraft flying or intended by the operator of the aircraft to fly, for the purpose of public transport;
- "*public transport of passengers*" means transport of passengers which is public transport by virtue of sub-paragraph (4) (a) (i) or (ii);
- "*replacement*", in relation to any part of any aircraft or its equipment, includes the removal and replacement of that part whether or not by the same part, and whether or not any work is done on it, but does not include the removal and replacement of a part which is designed to be removable solely for the purpose of enabling another part to be inspected, repaired, removed or replaced or cargo to be loaded;
- "*Rules of the Air and Air Traffic Control*" means the Rules of the Air and Air Traffic Control contained in the Eleventh Schedule;
- "*scheduled journey*" means one of a series of journeys which are undertaken between the same two places and together amount to a systematic service;
- "*special VFR flight*" means a flight which is a special VFR flight for the purposes of the rules prescribed under paragraph 61 (1);
- "*Visual Flight Rules*" means the Visual Flight Rules contained in Part V of the Eleventh Schedule;
- "*Visual Meteorological Conditions*" means weather permitting flight in accordance with the Visual Flight Rules.

(2) An aircraft shall be deemed to be in flight in the case of a piloted aircraft, from the moment when, after the embarkation of its crew for the purpose of taking off, it first moves under its own power until the moment when it next comes to rest after landing;

(3) References in this Regulation to the operator of an aircraft are, for the purposes of the application of any provision of this Regulation in relation to any particular aircraft, references to the person who at the relevant time has the management of that aircraft:

Provided that, for the purposes of the application of any provision in Part III when by virtue of any charter or other agreement for the hire or loan of an aircraft, a person, other than an air transport undertaking or an aerial work undertaking, has the management of that aircraft for a period not exceeding 14 days, sub-paragraphs (1) and (2) shall have effect as if that agreement had not been entered into.

(4) (a) Subject to this paragraph, an aircraft in flight shall for the purposes of this Regulation be deemed to fly for the purpose of public transport:

(i) if hire or reward is given or promised for the carriage of passengers or cargo in the aircraft on that flight; or

(ii) if any passengers or cargo are carried gratuitously in the aircraft on that flight by an air transport undertaking, not being persons in the employment of the undertaking (including its directors in the case of a body corporate), persons with the authority of the Civil Aviation Authority of Macau either making any inspection or witnessing any training, practice or test for the purposes of this Regulation, or a cargo intended to be used by any such passengers as aforesaid, or by the undertaking; or

(iii) for the purposes of Part III if hire or reward is given or promised for the right to fly the aircraft on that flight otherwise than under a hire purchase agreement.

(b) Where under a transaction effected by or on behalf of a member of an unincorporated association of persons on the one hand and the association of persons or any member thereof on the other hand, a person is carried in, or is given the right to fly, an aircraft in such circumstances that hire or reward would be deemed to be given or promised if the transaction were effected otherwise than as aforesaid, hire or reward, shall, for the purposes of this Regulation, be deemed to be given.

(5) The expressions appearing in the "Table of General Classification of Aircraft" set out in Part A of the First Schedule shall have the meanings thereby assigned to them.

Part II

REGISTRATION AND MARKING OF AIRCRAFT

3. (1) An aircraft shall not fly in Macau unless it is registered in:

- (a) Macau; or
- (b) a Contracting State; or
- (c) some other State or Territory in relation to which there is in force an agreement between the Government of Macau and the government of that State or Territory which makes provision for the flight in Macau of aircraft registered in that State or Territory:

Provided that:

- (i) (a) begins and ends in Macau; and
 - (b) is not for the purpose of public transport or aerial work;
 - (ii) any aircraft may fly unregistered on any flight which:
 - (a) begins and ends in Macau; and
 - (b) is in accordance with the "B Conditions" set out in the Second Schedule;
- (2) The Civil Aviation Authority of Macau may, in such special circumstances and subject to such conditions or limitations as he may think fit, exempt temporarily from sub-paragraph (1) an aircraft registered elsewhere.
- (3) If an aircraft flies in Macau in contravention of sub-paragraph (1) in such manner or circumstances that if the aircraft had been registered in Macau an offence against this Regulation or against other subsidiary legislation made under the law would have been committed, the like offence shall be deemed to have been committed in respect of that aircraft.

4. (1) The Civil Aviation Authority of Macau shall be the authority for the registration of aircraft in Macau.

(2) Subject to this paragraph, an aircraft shall not be registered or continue to be registered in Macau if it appears to the Civil Aviation Authority of Macau that:

- (a) the aircraft is registered outside Macau and that such registration does not cease by operation of law upon the aircraft being registered in Macau;
- (b) an unqualified person is entitled as owner to any legal or beneficial interest in the aircraft or any share therein; or
- (c) it would be inexpedient in the public interest for the aircraft to be or to continue to be registered in Macau.

- (3) The following persons and no other shall be qualified to be the owner of a legal or beneficial interest in an aircraft registered in Macau or a share therein:
- (a) the territory of Macau;
 - (b) residents of Macau; and
 - (c) companies incorporated in Macau.
- (4) If an unqualified person residing, or having their principal place of business, in the territory of Macau is entitled as owner to a legal or beneficial interest in an aircraft, or a share therein, the Civil Aviation Authority of Macau, upon being satisfied that the aircraft may otherwise be properly so registered, may register the aircraft in Macau. The person aforesaid shall not cause or permit the aircraft, while it is registered in pursuance of this sub-paragraph, to be used for the purpose of public transport or aerial work.
- (5) If an aircraft is chartered by demise to a person qualified as aforesaid the Civil Aviation Authority of Macau may, whether or not an unqualified person is entitled as owner to a legal or beneficial interest therein, register the aircraft in Macau in the name of the charterer upon being satisfied that the aircraft may otherwise be properly so registered, and subject to this paragraph the aircraft may remain so registered during the continuation of the charter.
- (6) Application for the registration of an aircraft in Macau shall be made in writing to the Civil Aviation Authority of Macau, and shall include or be accompanied by such particulars and evidence relating to the aircraft and the ownership and chartering thereof as he may require to enable him to determine whether the aircraft may properly be registered in Macau and to issue the certificate referred to in sub-paragraph (9). In particular, the application shall include the proper description of the aircraft according to the "Table of General Classification of Aircraft" set out in Part A of the First Schedule.
- (7) Upon receiving an application for the registration of an aircraft in Macau and being satisfied that the aircraft may properly be so registered, the Civil Aviation Authority of Macau shall register the aircraft, wherever it may be, and shall include in the register the following particulars:
- (a) the number of the certificate;
 - (b) the mark of origin of the aircraft, and the registration mark assigned to it by the Civil Aviation Authority of Macau;
 - (c) the name of the constructor of the aircraft and its designation;
 - (d) the serial number of the aircraft;
 - (e) photographs of the aircraft;
 - (f) (i) the name and address of every person who is entitled as owner to a legal interest in the aircraft or a share therein and in the case of an aircraft which is the subject of a hire-purchase agreement the name and address of the hirer; or

- (ii) in the case of an aircraft registered in pursuance of sub-paragraph (4) or (5) an indication that it is so registered.

(8) For the initial grant, change or renewal of Certificates of Registration regarding the registration of aircraft in Macau, the payment of a fee is due to the Civil Aviation Authority of Macau, according to the Twelfth Schedule of this Regulation.

(9) The Civil Aviation Authority of Macau shall furnish to the person or persons in whose name the aircraft is registered (referred to in this Regulation as the registered owner) a certificate of registration, which shall include the foregoing particulars and the date on which the certificate was issued:

Provided that the Civil Aviation Authority of Macau shall not be required to furnish a certificate of registration if the registered owner:

- (a) is the holder of an aircraft dealer's certificate granted under sub-paragraph (10);

- (b) has made to the Civil Aviation Authority of Macau and has not withdrawn a statement of his intention that the aircraft is to fly only in accordance with the "C Conditions" set out in the Second Schedule; and

- (c) shall use the aircraft only in accordance with the "C Conditions" set out in the Second Schedule.

(10) The Civil Aviation Authority of Macau may grant to any person an aircraft dealer's certificate if he is satisfied that he is a person carrying on in Macau the business of buying and selling aircraft.

(11) Subject to sub-paragraphs (4) and (5), if at any time after an aircraft has been registered in Macau an unqualified person becomes entitled as owner to a legal or beneficial interest in the aircraft or a share therein, the registration of the aircraft shall thereupon become void and the certificate of registration shall forthwith be returned by the registered owner to the Civil Aviation Authority of Macau for cancellation.

(12) Any person who is registered as the owner of an aircraft registered in Macau shall forthwith inform the Civil Aviation Authority of Macau in writing of:

- (a) any change in the particulars which were furnished to the Civil Aviation Authority of Macau upon application being made for the registration of the aircraft;

- (b) the destruction of the aircraft, or its permanent withdrawal from use, or its exportation; or

- (c) in the case of an aircraft registered in pursuance of sub-paragraph (5) the termination of the demise charter.

(13) Any person or entity who becomes the owner of an aircraft registered in Macau shall forthwith inform the Civil Aviation Authority of Macau in writing to that effect.

(14) The Civil Aviation Authority of Macau may, whenever it appears necessary or appropriate to do so for giving effect to this Regulation or for bringing up to date or otherwise correcting the particulars entered in the register, amend the register or, if he thinks fit, may cancel the registration of the aircraft, and shall cancel that registration if he is satisfied that there has been a change in the ownership of the aircraft.

(15) The Civil Aviation Authority of Macau may, by regulations, adapt or modify sub-paragraphs (1) to (14) as he considers necessary or expedient for the purpose of providing for the temporary transfer of aircraft to or from the Macau register, either generally or in relation to a particular case or class of cases.

(16) In this paragraph references to an interest in an aircraft do not include references to an interest in an aircraft to which a person is entitled only by virtue of his membership of a flying club, and the reference in sub-paragraph (12) to the registered owner of an aircraft includes, in the case of a deceased person, his personal representative, and in the case of a body corporate which has been dissolved, its successor.

(17) Nothing in this paragraph shall prevent the Civil Aviation Authority of Macau to cancel, revoke or suspend the registration of an aircraft if in his opinion it would be inexpedient in the public interest to do so.

5. (1) An aircraft (other than an aircraft permitted by or under this Regulation to fly without being registered) shall not fly unless it bears painted thereon or affixed thereto, in the manner required by the law of the country or territory in which it is registered, the origin and registration marks required by that law.

(2) The marks to be borne by aircraft registered in Macau shall comply with Part B of the First Schedule.

(3) An aircraft shall not bear any marks which purport to indicate:

(a) that the aircraft is registered in a country in which it is not in fact registered;
or

(b) that the aircraft is a State aircraft of a particular country if it is not in fact such an aircraft, unless the appropriate authority of that country has sanctioned the bearing of such marks.

Part III

AIRWORTHINESS AND EQUIPMENT OF AIRCRAFT

6. (1) An aircraft shall not fly unless there is in force in respect thereof a Certificate of Airworthiness duly issued or rendered valid under the law of the country or territory in which the aircraft is registered, and any conditions subject to which the certificate was issued or rendered valid are complied with:

Provided that the foregoing prohibition shall not apply to flights beginning and ending in Macau, of:

(a) an aircraft flying in accordance with the "A Conditions" or the "B Conditions" set out in the Second Schedule; and

(b) an aircraft flying in accordance with the conditions of a permit to fly issued by the Civil Aviation Authority of Macau in respect of that aircraft.

(2) In the case of a Macau registered aircraft the Certificate of Airworthiness referred to in sub-paragraph (1) shall be a certificate issued or rendered valid in accordance with paragraph 7.

7. (1) The Civil Aviation Authority of Macau may issue in respect of any aircraft a Certificate of Airworthiness if he is satisfied that the aircraft is fit to fly having regard to:

(a) the design, construction, workmanship and materials of the aircraft (including in particular any engines fitted therein), and of any equipment carried in the aircraft which he considers necessary for the airworthiness of the aircraft; and

(b) the results of flying trials, and such other tests of the aircraft as he may require:

Provided that, if the Civil Aviation Authority of Macau has issued a Certificate of Airworthiness in respect of an aircraft which, in his opinion, is a prototype aircraft or a modification of a prototype aircraft, he may dispense with flying trials in the case of any other aircraft if he is satisfied that it conforms to such prototype or modification.

(2) Every Certificate of Airworthiness shall specify such categories as are, in the opinion of the Civil Aviation Authority of Macau, appropriate to the aircraft in accordance with the Third Schedule and the certificate shall be issued subject to the condition that the aircraft shall be flown only for the purpose indicated in the said Schedule in relation to those categories.

(3) No aircraft shall be classified in its Certificate of Airworthiness as being under the General Purpose Category unless its maximum total weight authorised does not exceed 2,730 kg.

(4) Where an aircraft is classified in its Certificate of Airworthiness as being under the General Purpose Category or Special Category, the purpose for which the aircraft is used shall also be specified in its Certificate of Airworthiness.

(5) The Civil Aviation Authority of Macau may issue the Certificate of Airworthiness subject to such other conditions relating to the airworthiness of the aircraft as he thinks fit.

(6) The Certificate of Airworthiness may designate the performance group to which the aircraft belongs for the purposes of the requirements referred to in paragraph 28 (1).

(7) The Civil Aviation Authority of Macau may, subject to such conditions as he thinks fit, issue a certificate of validation rendering valid for the purposes of this Regulation a Certificate of Airworthiness issued in respect of any aircraft under the law of any country or territory.

(8) Subject to this paragraph and paragraph 59, a Certificate of Airworthiness or validation issued under this paragraph shall remain in force for such period as may be specified therein, and may be renewed from time to time by the Civil Aviation Authority of Macau for such further period as he thinks fit.

(9) A Certificate of Airworthiness or a certificate of validation issued in respect of an aircraft shall cease to be in force when:

(a) the aircraft, or such of its equipment as is necessary for the airworthiness of the aircraft is overhauled, repaired or modified, or if any part of the aircraft or of such equipment is removed or is replaced, otherwise than in a manner and with material of a type approved by the Civil Aviation Authority of Macau either generally or in relation to a class of aircraft or to the particular aircraft;

(b) the aircraft has suffered an accident which has affected its airworthy condition;

(c) by some reason, the aircraft or any of its components are released to service on a condition different from the one which led to the issue of a Certificate of Airworthiness by the Civil Aviation Authority of Macau;

(d) are not fully complied the restrictions and conditions explicitly mentioned in Certificate of Airworthiness of the aircraft;

(e) from the time an inspection is required by the Civil Aviation Authority of Macau to be made for the purpose of ascertaining whether the aircraft remains airworthy until the completion of that inspection of the aircraft or of any such equipment; or

(f) from the time a modification is required by the Civil Aviation Authority of Macau for the purpose of ensuring that the aircraft remains airworthy until the completion to the satisfaction of the Civil Aviation Authority of Macau of that modification of the aircraft or of any such equipment.

(10) Without prejudice to any other provision of this Regulation, the Civil Aviation Authority of Macau may, for the purpose of this paragraph, accept reports furnished to him by a person whom he may approve either absolutely or subject to such conditions as he thinks fit as qualified to furnish such reports.

(11) The Civil Aviation Authority of Macau shall cause to be prepared and preserved in relation to each Macau registered aircraft a record enabling the aircraft (including in particular its engines) and such of its equipment as he may have considered necessary for the airworthiness of the aircraft in issuing, varying or rendering valid a Certificate of Airworthiness, to be identified with the drawings and other documents on the basis of which

the certificate was issued, varied or rendered valid as the case may be. All equipment so identified shall for the purpose of this Regulation be deemed to be equipment necessary for the airworthiness of the aircraft. The Civil Aviation Authority of Macau shall cause such record to be produced for examination upon request being made therefor at any reasonable time by any person having, in the opinion of the Civil Aviation Authority of Macau, reasonable grounds for requiring to examine it.

(12) Nothing in this paragraph shall prevent the Civil Aviation Authority of Macau to cancel, suspend, revoke or not revalidate the Certificate of Airworthiness of an aircraft registered in Macau if, in his opinion, it would be in the public interest to do so.

8. (1) An entity engaged, or intending to engage, in any stage of the design, manufacture, maintenance or distribution of aircraft, aircraft components or aircraft materials in Macau, may apply to the Civil Aviation Authority of Macau for a certificate of approval in respect of those activities.

(2) Where an applicant under this paragraph:

(a) furnishes to the Civil Aviation Authority of Macau such evidence as the Civil Aviation Authority of Macau may require, however, not less than:

(i) the qualifications and competence of the applicant and the qualifications and competence of the employees of the applicant;

(ii) a statement designating an accountable manager;

(iii) the intended scope of work;

(iv) the clear definition of the various management roles, duties and responsibilities, as well as an organisational chart;

(v) the facilities at the disposal of the applicant;

(vi) the work procedures proposed by the applicant; and

(vii) all the necessary means and conditions to enable the applicant to exercise its duties and privileges,

to carry out the activities to which the application relates;

(b) satisfies the Civil Aviation Authority of Macau that, having regard to the evidence so furnished, the applicant is, or will be, able to carry on the activities to which the application relates in a satisfactory manner; and

(c) pays the appropriate fees mentioned in the Twelfth Schedule,

the Civil Aviation Authority of Macau may, subject to such conditions as he thinks fit, issue to the applicant a certificate of approval with respect to those activities.

(3) An authorised entity may, at any time, for the purpose of ascertaining whether the activities to which a certificate of approval relates are being carried on in a satisfactory manner or for any other purpose:

(a) inspect any aircraft, aircraft component, aircraft material, facilities, licenses, personnel or records;

(b) inspect any process or system carried on by, any records maintained by or any documents in the possession of, the holder of the certificate of approval in connection with the activities to which the certificate of approval relates;

(c) conduct inquiries regarding any member of the organisation;

(d) conduct any test or investigation that the authorised entity considers necessary; and

(e) require the holder of the certificate of approval to furnish to the authorised entity such evidence as the authorised entity may require:

(i) of the qualifications and competence of the holder or of the qualification and competence of the employees of the holder;

(ii) of the facilities at the disposal of the holder;

(iii) of the acceptable means available to carry out its duties; and

(iv) of the procedures followed.

(4) Any expense incurred by reason of anything done during, in or incidental to the investigation mentioned in sub-paragraph (3) shall be paid by and be recoverable from the holder of the certificate of approval.

(5) For the purposes of this paragraph:

"aircraft component" means any part or equipment for an aircraft, being a part of equipment that, when fitted to, or provided in, an aircraft, may, if it is not sound or not functioning correctly, affect the safety of the aircraft or cause the aircraft to become a danger to person or property, but does not include a part or equipment of a kind that the Civil Aviation Authority of Macau directs shall not be an aircraft component for the purpose of this paragraph;

"aircraft material" means a material (including a fluid) for use in the manufacture, maintenance, servicing or operation of an aircraft or of an aircraft component, but does not include an aircraft component.

9. (1) A Macau registered aircraft shall not fly unless:

(a) the aircraft (including in particular its engines), together with its equipment and radio station, is maintained in accordance with maintenance schedules and all the procedures and requirements approved by the Civil Aviation Authority of Macau in relation to that aircraft; and

(b) there is in force a certificate of maintenance review issued in accordance with this paragraph and such certificate shall certify the date on which the maintenance review was carried out and the date thereafter when the next review is due:

Provided that an aircraft may, notwithstanding that sub-paragraphs (1) (a) and (b) have not been complied with in relation to the radio station therein, fly for the sole purpose of enabling persons to be trained to perform duties in aircraft.

(2) The approved maintenance schedule referred to in sub-paragraph (1) (a) shall specify the occasions on which a review must be carried out for the purpose of issuing a certificate of maintenance review.

(3) A certificate of maintenance review may be issued for the purposes of this paragraph only by:

(a) the holder of a license granted under this Regulation as an aircraft maintenance engineer being a license of a category appropriate in accordance with paragraph 11 and the Fourth Schedule;

(b) the holder of a license as such an engineer granted under the law of a country and rendered valid under this Regulation, in accordance with the privileges endorsed on the license;

(c) the holder of a license as such an engineer granted under the law of any such country as may be prescribed in accordance with the privileges endorsed on the license and subject to any conditions as may be prescribed;

(d) a person whom the Civil Aviation Authority of Macau has authorised to issue a certificate of maintenance review in a particular case, and in accordance with that authority; or

(e) a person approved by the Civil Aviation Authority of Macau as being competent to issue such certificates, and in accordance with that approval:

Provided that, upon approving a maintenance schedule, the Civil Aviation Authority of Macau may direct that certificates of maintenance review relating to that schedule, or to any part thereof specified in his direction, may be issued only by the holder of such a license as is so specified.

(4) A person referred to in sub-paragraph (3) shall not issue a certificate of maintenance review unless he has first verified that:

- (a) maintenance has been carried out on the aircraft in accordance with the maintenance schedule approved for that aircraft;
 - (b) inspections and modifications required by the Civil Aviation Authority of Macau as provided in paragraph 7 have been completed as certified in the relevant certificate of release to service;
 - (c) defects entered in the technical log of the aircraft in accordance with sub-paragraphs (7) and (8) have been rectified or the rectification thereof has been deferred in accordance with procedures approved by the Civil Aviation Authority of Macau; and
 - (d) certificates of release to service have been issued in accordance with paragraph 10.
- (5) For the purpose of sub-paragraph (4), the operator of the aircraft shall furnish all such information relating to all such matters as may be necessary for the person referred to in that sub-paragraph.
- (6) Certificates of maintenance review shall be issued in duplicate. One of the duplicates shall, during the period of validity of the certificate, be carried in the aircraft when paragraph 55 so requires, and the other shall be kept by the operator elsewhere than in the aircraft
- (7) On the termination of every flight by a Macau registered aircraft for any of the purposes specified in sub-paragraph (1), the commander of the aircraft shall enter in a technical log:
- (a) the times when the aircraft took off and landed;
 - (b) the particulars of any defect which are known to him and which affects the airworthiness or safe operation of the aircraft or if no defect is known to him, an entry to that effect; and
 - (c) such other particulars in respect of the airworthiness or operation of the aircraft as the Civil Aviation Authority of Macau may require.
- (8) Notwithstanding sub-paragraph (7), in the case of a number of consecutive flights each of which begins and ends:
- (a) on the same day;
 - (b) at the same aerodrome; and
 - (c) with the same person as the commander of the aircraft,

the commander of the aircraft may, except where he becomes aware of a defect during an earlier flight, make the entries referred to in sub-paragraph (7) in a technical log at the end of the last of such consecutive flights.

(9) Upon the rectification of any defect which has been entered in a technical log in accordance with sub-paragraphs (7) and (8), a copy of the certificate of release to service required by paragraph 10 in respect of the work done for the rectification of the defect shall be entered in the technical log in such a position or manner as to be readily identifiable with the entry of the defect to which it relates.

(10) The technical log referred to in sub-paragraphs (7), (8) and (9) shall be carried in the aircraft when paragraph 55 so requires and copies of the entries referred to in those sub-paragraphs shall be kept on the ground.

(11) Subject to paragraph 58, every certificate of maintenance review shall be preserved by the operator of the aircraft for a period of two years following the expiry of the period of validity of the certificate and for such further period as the Civil Aviation Authority of Macau may require in any particular case.

10. (1) A Macau registered aircraft, being an aircraft in respect of which a Certificate of Airworthiness issued or rendered valid under this Regulation is in force, shall not fly if any part of the aircraft or of such of its equipment as is necessary for the airworthiness of the aircraft, has been overhauled, repaired, replaced, modified or maintained, or has been inspected as provided in paragraph 7 (9) (b), unless there is in force a certificate of release to service issued in accordance with this paragraph and relating to the overhaul, repair, replacement, modification, maintenance or inspection, as the case may be:

Provided that if a repair or replacement of a part of an aircraft or its equipment is carried out when the aircraft is at such a place that it is not reasonably practicable:

(a) for the repair or replacement to be carried out in such a manner that a certificate of release to service can be issued under this paragraph in respect thereof; or

(b) for such a certificate to be issued while the aircraft is at that place,

the aircraft may fly to a place at which such a certificate can be issued, being the nearest place:

(i) to which the aircraft can, in the reasonable opinion of the commander thereof, safely fly by a route for which it is properly equipped; and

(ii) to which it is reasonable to fly having regard to any hazard to the liberty or health of any person on board,

and in such case the commander of the aircraft shall cause written particulars of the flight, and the reasons for making it, to be given to the Civil Aviation Authority of Macau within 10 days thereafter.

(2) Neither:

(a) equipment provided in compliance with the Fifth Schedule (except paragraph 3 of the Fifth Schedule); nor

(b) in the case of a public transport aircraft, radio equipment provided for use therein or in any survival craft carried therein, whether or not such equipment is provided in compliance with this Regulation or any regulations made or any requirements notified thereunder,

shall be installed, or placed on board for use, in an aircraft after being overhauled, repaired, modified or inspected, unless there is in force in respect thereof at the time when it is installed or placed on board a certificate of release to service issued in accordance with this paragraph and relating to the overhaul, repair, modification or inspection, as the case may be.

(3) For the purposes of this Regulation, "*certificate of release to service*" means a certificate that the part of the aircraft or its equipment has been overhauled, repaired, replaced, modified or maintained, as the case may be, in a manner and with material of a type approved by the Civil Aviation Authority of Macau either generally or in relation to a class of aircraft or the particular aircraft and which identifies the overhaul, repair, replacement, modification or maintenance to which it relates and includes particulars of the work done; and in relation to an inspection required by the Civil Aviation Authority of Macau that the inspection has been made in accordance with the requirements of the Civil Aviation Authority of Macau and that any consequential repair, replacement or modification has been carried out as aforesaid.

(4) A certificate of release to service may be issued for the purposes of this paragraph only by:

(a) the holder of a license granted under this Regulation as an aircraft maintenance engineer being a license of a category appropriate in accordance with Part A of the Fourth Schedule;

(b) the holder of a license as such an engineer granted under the law of a country and rendered valid under this Regulation in accordance with the privileges endorsed on the license;

(c) the holder of a license as such an engineer granted under the law of any such country as may be prescribed in accordance with the privileges endorsed on the license and subject to any condition which may be prescribed;

(d) a person approved by the Civil Aviation Authority of Macau as being competent to issue such certificates;

(e) a person whom the Civil Aviation Authority of Macau has authorised to issue the certificate in a particular case; or

(f) in relation only to the adjustment and compensation of direct reading magnetic compasses, the holder of an Airline Transport Pilot's License (Aeroplanes) or a Flight Navigator's License.

(5) Subject to paragraph 58, if the aircraft to which a certificate of release to service relates is a public transport aircraft or an aerial work aircraft, the certificate of release to service shall be preserved by the operator of the aircraft for the period of time for which he is required to preserve the log book relating to the same part of the aircraft or to the same equipment or apparatus as the case may be. In the case of any other aircraft the certificate shall be preserved by the operator of the aircraft for a period of two years.

(6) In this paragraph, the word "*repair*" includes, in relation to a compass the adjustment and compensation thereof and the word "*repaired*" shall be construed accordingly.

11. (1) The Civil Aviation Authority of Macau may grant to any person a license to act, for the purposes of this Regulation, as a non-flight crew member, in one of the categories specified in the Fourth Schedule upon his being satisfied that the applicant is a fit and proper person to hold the license and is qualified by his knowledge and experience to do so, and for that purpose the applicant shall furnish such evidence and undergo such examinations and tests as the Civil Aviation Authority of Macau may require of him. The Civil Aviation Authority of Macau may include a rating in the license limiting the license to particular types of aircraft or equipment.

(2) A license granted by the Civil Aviation Authority of Macau to a person who suppose to engage in duties other than those attributed to flight crew members, entitles the holder to exercise the duties and privileges of the respective aeronautical license.

(3) In the specific case of licensed aircraft maintenance engineers, a license of any category shall, subject to any rating as aforesaid, entitle the holder to issue certificates of maintenance review, certificates of release to service or certificates of fitness for flight in accordance with the duties and privileges highlighted in the Fourth Schedule.

(4) A license granted to aeronautical personnel other than flight crew members and the respective rating(s) shall, subject to paragraph 59, remain in force for the period specified therein, but may be renewed by the Civil Aviation Authority of Macau, from time to time, upon his being satisfied that the applicant is a fit and proper person and is qualified as aforesaid.

(5) The Civil Aviation Authority of Macau may, on a discretionary basis, issue a certificate rendering valid, for the purpose of this Regulation, any license of an aeronautical technician other than a flight-crew member granted under the law of any country or territory. The certificate may be issued subject to such conditions and for such period as the Civil Aviation Authority of Macau thinks fit.

(6) Upon receiving a license granted under this paragraph, the holder shall forthwith sign his name thereon in ink with his ordinary signature.

12. (1) An aircraft shall not fly unless it is so equipped as to comply with the law of the country or territory in which it is registered, and to enable lights and markings to be displayed, and signals to be made, in accordance with this Regulation and any regulations made and requirements notified thereunder.

(2) In the case of a Macau registered aircraft the equipment required to be provided (in addition to any other equipment required by or under this Regulation) shall be that specified in such parts of the Fifth Schedule as are applicable in the circumstances and shall comply

with the provisions of that Schedule. The equipment, except that specified in paragraph 3 of the Schedule, shall be of a type approved by the Civil Aviation Authority of Macau either generally or in relation to a class of aircraft or in relation to that aircraft and shall be installed in a manner so approved.

(3) In any particular case the Civil Aviation Authority of Macau may direct that a Macau registered aircraft shall carry such additional or special equipment or supplies as he may specify for the purpose of facilitating the navigation of the aircraft, the carrying out of search and rescue operations, or the survival of the persons carried in the aircraft.

(4) The equipment carried in compliance with this paragraph shall be so installed or stowed and kept stowed, and so maintained and adjusted, as to be readily accessible and capable of being used by the person for whose use it is intended.

(5) The position of equipment provided for emergency use shall be indicated by clear markings in or on the aircraft. In particular in every public transport aircraft registered in Macau there shall be:

(a) provided individually for each passenger; or

(b) if the Civil Aviation Authority of Macau so permits in writing, exhibited in a prominent position in every passenger compartment, a notice relevant to the aircraft in question containing pictorial:

(i) instructions on the brace position to be adopted in the event of an emergency landing;

(ii) instructions on the method of use of the safety belts and safety harnesses as appropriate;

(iii) information as to where emergency exits are to be found and instructions as to how they are to be used; and

(iv) information as to where the life-jackets, escape slides, life-rafts and oxygen masks, if required to be provided by sub-paragraph (2), are to be found and instructions as to how they are to be used.

(6) All equipment installed or carried in an aircraft, whether or not in compliance with this paragraph, shall be so installed or stowed and kept stowed and so maintained and adjusted as not to be a source of danger in itself or to impair the airworthiness of the aircraft or the proper functioning of any equipment or services necessary for the safety of the aircraft.

(7) Without prejudice to sub-paragraph (2), all navigational equipment (other than radio equipment) of any of the following types:

(a) equipment capable of establishing the aircraft's position in relation to its position at some earlier time by computing and applying the resultant of the acceleration and gravitational forces acting upon it; and

- (b) equipment capable of establishing automatically the altitude and relative bearing of selected celestial bodies,

when carried in a Macau registered aircraft (whether or not in compliance with this Regulation or any of the regulations made thereunder) shall be of a type approved by the Civil Aviation Authority of Macau either generally or in relation to a class of aircraft or in relation to that aircraft and shall be so installed in a manner so approved.

- (8) This paragraph shall not apply in relation to radio equipment except that specified in the Fifth Schedule.

13. (1) An aircraft shall not fly unless it is so equipped with radio equipment as to comply with the law of the country or territory in which the aircraft is registered and to enable communications to be made, and the aircraft to be navigated, in accordance with the provisions of this Regulation and any regulations made thereunder.

- (2) In the case of a Macau registered aircraft, the aircraft shall be equipped with radio equipment in accordance with the Sixth Schedule.

- (3) In any particular case the Civil Aviation Authority of Macau may direct that a Macau registered aircraft shall carry such additional or special radio equipment as he may specify for the purpose of facilitating the navigation of the aircraft, the carrying out of search and rescue operations or the survival of the persons carried in the aircraft.

- (4) The radio equipment provided in compliance with this paragraph shall always be maintained in serviceable condition.

- (5) All radio equipment installed in a Macau registered aircraft, whether or not in compliance with this Regulation or any regulations made or requirements notified thereunder, shall be of a type approved by the Civil Aviation Authority of Macau as suitable for the purpose for which it is to be used, and shall be installed in a manner approved by the Civil Aviation Authority of Macau. Neither the equipment nor the manner in which it is installed shall be modified except with the approval of the Civil Aviation Authority of Macau.

14. (1) The Civil Aviation Authority of Macau may, subject to such conditions as he thinks fit, grant in respect of any aircraft or class of aircraft registered in Macau a permission permitting such aircraft to commence a flight in specified circumstances notwithstanding that any specified item of equipment (including radio equipment) required by or under this Regulation to be carried in the circumstances of the intended flight is not carried or is not in a fit condition for use.

- (2) An aircraft registered in Macau shall not commence a flight if any of the equipment (including radio equipment) required by or under this Regulation to be carried in the circumstances of the intended flight is not carried or is not in a fit condition for use:

- (a) otherwise than under and in accordance with the terms of a permission under this paragraph which has been granted to the operator; and

- (b) unless in the case of an aircraft to which paragraph 24 applies, the operations manual required thereby contains the particulars specified in subparagraph (v) of Part A of the Ninth Schedule.

15. (1) In addition to any other log book required by or under this Regulation, the following log books shall be kept in respect of every public transport aircraft and aerial work aircraft registered in Macau:

- (a) an aircraft log book; and
- (b) a separate log book in respect of each engine fitted in the aircraft; and
- (c) a separate log book in respect of each variable pitch propeller fitted to the aircraft.

The log books shall include the particulars respectively specified in the Seventh Schedule.

(2) Each entry in the log book shall be made as soon as it is practicable after the occurrence to which it relates, but in no event more than 7 days after the expiration of the certificate of maintenance review (if any) in force in respect of the aircraft at the time of the occurrence.

(3) Entries in a log book may refer to other documents, which shall be clearly identified, and any other document so referred to shall be deemed, for the purposes of this Regulation, to be part of the log book.

(4) It shall be the duty of the operator of every aircraft in respect of which log books are required to be kept to keep them or cause them to be kept in accordance with paragraphs (1) to (3).

(5) Subject to paragraph 58 every log book shall be preserved by the operator of the aircraft until a date two years after the aircraft, the engine or the variable pitch propeller, as the case may be, has been destroyed or has been permanently withdrawn from use.

16. (1) Every aircraft in respect of which a Certificate of Airworthiness issued or rendered valid under this Regulation is in force shall be weighed, and the position of its centre of gravity determined, at such times and in such manner as the Civil Aviation Authority of Macau may require in the case of that aircraft.

(2) Upon the aircraft being weighed as mentioned in sub-paragraph (1), the operator of the aircraft shall prepare a weight schedule showing:

- (a) either the basic weight of the aircraft, that is to say, the weight of the aircraft empty together with the weight of the unusable fuel and unusable oil in the aircraft and of such items of equipment as are indicated in the weight schedule or such other weight as may be approved by the Civil Aviation Authority of Macau in the case of that aircraft; and
- (b) either the position of the centre of gravity of the aircraft when the aircraft contains only the items included in the basic weight or such other position of the centre of gravity as may be approved by the Civil Aviation Authority of Macau in the case of that aircraft.

(3) Subject to paragraph 58 the weight schedule shall be preserved by the operator of the aircraft until the expiry of a period of 6 months following the next occasion on which the aircraft is weighed for the purposes of this paragraph.

17. The Civil Aviation Authority of Macau may cause such inspections, investigations, tests, experiments and flight trials to be made as he thinks necessary to enable him to perform the functions vested in him by this Regulation and any person authorised in writing by the Civil Aviation Authority of Macau shall at all reasonable times have the right of access to any place in any establishment to which access is necessary for the purpose of inspecting the manufacture of or assembly of any part of the aircraft or its equipment or any drawing or other documents relating to any part of the aircraft.

Part IV

AIRCRAFT CREW AND LICENSING

18. (1) An aircraft shall not fly unless it carries a flight crew of the number and description required by the law of the country or territory in which it is registered.

(2) A Macau registered aircraft shall carry a flight crew adequate in number and description to ensure the safety of the aircraft and of at least the number and description specified in the Certificate of Airworthiness issued or rendered valid under this Regulation or, if no Certificate of Airworthiness is required under this Regulation to be in force, the Certificate of Airworthiness, if any, last in force under this Regulation, in respect of that aircraft.

(3) A Macau registered aircraft flying for the purpose of public transport having a maximum total weight authorised of more than 5,700 kg, shall carry not less than two pilots as members of the flight crew thereof.

(4) A Macau registered aircraft engaged on a flight for the purpose of public transport shall carry:

(a) a flight navigator as a member of the flight crew; or

(b) navigational equipment approved by the Civil Aviation Authority of Macau and used in accordance with any conditions subject to which that approval may have been given,

if on the route or any diversion therefrom, being a route or diversion planned before take off, the aircraft is intended to be more than 500 nautical miles from the point of take off measured along the route to be flown, and to pass over part of an area specified in the Fifteenth Schedule.

(5) The flight navigator referred to in sub-paragraph (4) shall be carried in addition to any person who is carried in accordance with this paragraph to perform other duties.

(6) A Macau registered aircraft which is required by paragraph 13 to be equipped with radio communication equipment shall carry a flight radio operator as a member of the flight

crew, who, if he is required to operate radiotelegraph apparatus, shall be carried in addition to any other person who is carried in accordance with this paragraph to perform other duties.

(7) If it appears to him to be expedient to do so in the interests of safety, the Civil Aviation Authority of Macau may direct any particular operator of any Macau registered aircraft that the aircraft operated by him or any such aircraft shall not fly in such circumstances as the Civil Aviation Authority of Macau may specify unless they carry in addition to the flight crew required to be carried therein by sub-paragraphs (1) to (6) such additional persons as members of the flight crew as he may specify in the direction.

(8) (a) This paragraph shall apply to any flight for the purpose of public transport by a Macau registered aircraft:

(i) on which is carried 20 or more passengers; or

(ii) which may, in accordance with its certificate of airworthiness, carry more than 35 passengers and on which at least one passenger is carried.

(b) The crew of an aircraft on a flight to which this paragraph applies shall include cabin attendants.

(c) On a flight to which this paragraph applies, there shall be carried not less than one cabin attendant for every 50, or fraction of 50 passenger seats installed in the aircraft except that the number of cabin attendants calculated in accordance with this sub-paragraph need not be carried where the Civil Aviation Authority of Macau has granted written permission to the operator to carry a lesser number on that flight and the operator carries the number specified in that permission and complies with any other terms and conditions subject to which such permission is granted.

(9) The Civil Aviation Authority of Macau may, if it appears to him to be expedient to do so in the interests of safety, direct any particular operator of any Macau registered aircraft that the aircraft operated by him or any such aircraft shall not fly in such circumstances as the Civil Aviation Authority of Macau may specify unless those aircraft carry in addition to the cabin attendants required to be carried therein by sub-paragraph (8) such additional persons as cabin attendants as he may specify in the direction.

19. (1) Subject to this paragraph, a person shall not act as a member of the flight crew of a Macau registered aircraft unless he is the holder of an appropriate license granted or rendered valid by the Civil Aviation Authority of Macau under the terms of this Regulation:

Provided that a person may, within Macau, act as a flight radiotelephony operator without being the holder of such a license if:

(a) he does so as a person being trained in a Macau registered aircraft to perform duties as a member of the flight crew of an aircraft;

(b) he is authorised to operate the radiotelephony station by the holder of the license granted in respect of that station by the Civil Aviation Authority of Macau;

- (c) messages can only be transmitted for the purpose of instruction, or of the safety or navigation of the aircraft;
 - (d) messages can only be transmitted on a frequency assigned by the Civil Aviation Authority of Macau;
 - (e) the transmitter is pre-set to one or more of the frequencies so assigned and cannot be adjusted in flight to any other frequency;
 - (f) to the operation of the transmitter requires the use only of external switches; and
 - (g) the stability of the frequency radiated is maintained automatically by the transmitter.
- (2) Subject to this paragraph, a person shall not act as a member of the flight crew required by or under this Regulation to be carried in an aircraft registered outside Macau unless:
- (a) in the case of an aircraft flying for the purpose of public transport or aerial work he is the holder of an appropriate license granted or rendered valid under the law of the country or territory in which the aircraft is registered; and
 - (b) in the case of any other aircraft, he is the holder of an appropriate license granted or rendered valid under the law of the country or territory in which the aircraft is registered or under this Regulation, and the Civil Aviation Authority of Macau does not in the particular case give a direction to the contrary.
- (3) For the purposes of this paragraph, a granted license purporting to authorise the holder thereof to act as a member of the flight crew of an aircraft, not being a license purporting to authorise him to act as a student pilot only, shall, unless the Civil Aviation Authority of Macau in the particular case gives a direction to the contrary, be deemed to be a license rendered valid under this Regulation but shall not entitle the holder to act as a member of the flight crew of any aircraft flying for the purpose of public transport or aerial work or on any flight in respect of which he receives remuneration for his services as a member of the flight crew on that flight.
- (4) Notwithstanding sub-paragraph (1), a person may, unless the Certificate of Airworthiness in force in respect of the aircraft otherwise requires, act as pilot of a Macau registered aircraft for the purpose of undergoing training or tests for the grant or renewal of a pilot's license or for the inclusion, renewal or extension of a rating thereon without being the holder of an appropriate license, if the following condition is complied with:
- (a) no other person shall be carried in the aircraft or in an aircraft being towed thereby except a person carried as a member of the flight crew in compliance with this Regulation, a person authorised by the Civil Aviation Authority of Macau to witness the aforesaid training or tests, or to conduct the aforesaid tests, or, if the pilot-in-command of the aircraft is the holder of an appropriate license, a person carried for the purpose of being trained or tested as a member of the flight crew of an aircraft.

20. (1) The Civil Aviation Authority of Macau is the sole entity which may grant or revalidate licenses and ratings to flight crew members that operate or wish to operate aircraft registered in Macau. Those who are acting or intend to act as flight crew members of aircraft registered in Macau shall follow the various requirements prescribed by the Civil Aviation Authority of Macau in the Eight Schedule of this Regulation. The Civil Aviation Authority of Macau may grant or revalidate such licenses:

(a) upon being satisfied that the applicant is a fit and proper person to hold the license and is qualified by reason of his knowledge, experience, competence, skill and physical fitness to act in the capacity to which the license relates, and for that purpose the applicant may be required to undergo the appropriate medical examinations set out in the Fourteenth Schedule and any other examinations and tests or furnish any other evidence as the Civil Aviation Authority of Macau may determine;

(b) provided that a license or rating of any class shall not be granted to any person who is under the minimum age specified for that class of license or rating as specified in the Eighth Schedule; and

(c) provided that a license of the class referred to in paragraph 1 of the Eight Schedule shall not be renewed or granted to any person who has attained the age of 60 years.

(2) Subject to any conditions of the license, a license of any class shall entitle the holder to perform the functions specified in respect of that license in Part D of the Eighth Schedule,

Provided that:

(a) subject to sub-paragraphs (10) and (11) and to paragraph 19 (4), a person shall not be entitled to perform any of the functions specified in Part C of that Schedule in respect of a rating unless his license includes that rating;

(b) a person shall not be entitled to perform any of the functions to which his license relates if he knows or has reason to believe that his physical condition renders him temporarily or permanently unfit to perform such function; and

(c) a person shall not be entitled to perform the functions to which an instrument rating (aeroplanes or (and) helicopters) or flying instructor's rating unless his license bears a certificate signed by a person authorised by the Civil Aviation Authority of Macau to sign such certificate, indicating that the holder of the license has, within the period of 6 months in the case of an instrument rating (aeroplanes) and 24 months in the case of a flying instructor's preceding the day on which he performs those functions, passed a test of his ability to perform the functions to which the rating relates, being a test carried out in flight in the case of the flight instructor rating and in the case of the instrument rating, either in flight or by means of apparatus approved by the Civil Aviation Authority of Macau in which flight conditions are simulated on the ground.

(3) The Civil Aviation Authority of Macau may, if he is satisfied that the applicant is qualified as aforesaid to act in the capacity to which the rating relates, include in a license a

rating of any of the classes specified in Part C of the Eighth Schedule and such rating shall be deemed to form part of the license and shall entitle the holder to perform such functions as are specified in Part D of that Schedule in respect of that rating. An instrument rating (referred to in that Schedule) may be renewed by any person appointed by the Civil Aviation Authority of Macau for that purpose, if that person is satisfied by a test that the applicant continues to be competent to perform the functions to which the rating relates. The test shall be carried out either in flight or by means of apparatus approved by the Civil Aviation Authority of Macau in which flight conditions are simulated on the ground.

(4) A license and a rating shall, subject to paragraph 59 remain in force for the periods indicated in the license, not exceeding those respectively specified in the Eighth Schedule, and may be renewed by the Civil Aviation Authority of Macau from time to time upon his being satisfied that the applicant is a fit and proper person and is qualified as aforesaid.

(5) Upon receiving a license granted under this paragraph the holder shall forthwith sign his name thereon in ink with his ordinary signature.

(6) Every holder of a flight crew member's license granted under this paragraph and the requirements of the Eighth Schedule shall, upon applying for the renewal of the license and upon such other occasions as the Civil Aviation Authority of Macau may require, submit himself to medical examination by a person approved by the Civil Aviation Authority of Macau either generally or in a particular case who shall make a report to the Civil Aviation Authority of Macau in such form as the Civil Aviation Authority of Macau may require.

(7) Every holder of a license, granted under this paragraph or rendered valid under paragraph 21 who:

(a) suffers any personal injury involving incapacity to undertake the functions to which his license relates;

(b) suffers any illness involving incapacity to undertake those functions throughout a period of 20 days or more; or

(c) in the case of a woman, has reason to believe that she is pregnant,

shall inform the Civil Aviation Authority of Macau in writing of such injury, illness, or pregnancy, as soon as possible in the case of the injury or pregnancy, and as soon as the period of 20 days has elapsed in the case of the illness.

(8) A license for a flight crew member granted under the terms of the Eighth Schedule of this Regulation shall be deemed to be suspended upon the occurrence of such an injury, or the elapse of such period of illness as is referred to in sub-paragraph (7).

The suspension of the license shall cease:

(a) upon the holder being medically examined under arrangements made by the Civil Aviation Authority of Macau and pronounced fit to resume his functions under the license; or

(b) upon the Civil Aviation Authority of Macau exempting the holder from the requirement of a medical examination, subject to such conditions as the Civil Aviation Authority of Macau may think fit.

(9) A license granted under this paragraph shall be deemed to be suspended upon the pregnancy of the holder being diagnosed and shall remain suspended until the holder has been medically examined after the termination of the pregnancy and pronounced fit to resume her duties under the license.

(10) Nothing in this Regulation shall be taken to prohibit the holder of a commercial pilot's or airline transport pilot's license (aeroplanes or helicopters) from acting as pilot-in-command of an aircraft carrying passengers by night by reason of the lack of a night rating in his license.

(11) Nothing in this Regulation shall prohibit the holder of a pilot's license from acting as pilot of an aircraft not exceeding 5,700 kg maximum total authorised weight when with the authority of the Civil Aviation Authority of Macau he is testing any person in pursuance of sub-paragraph (1) or (3) notwithstanding that the type of aircraft in which the test is conducted is not specified in the aircraft rating included in his license.

(12) Where any provision of Part B of the Ninth Schedule permits a test to be conducted in a flight simulator approved by the Civil Aviation Authority of Macau, that approval may be granted subject to such conditions as the Civil Aviation Authority of Macau thinks fit.

(13) Without prejudice to any other provision of this Regulation, the Civil Aviation Authority of Macau may, for the purpose of this paragraph, either absolutely or subject to such conditions as he thinks fit:

(a) approve any course of training or instruction;

(b) authorise a person to conduct such examinations or tests as he may specify;
and

(c) approve a person to provide any course of training or instruction.

21. The Civil Aviation Authority of Macau may, on a discretionary basis, issue a certificate of validation rendering valid for the purposes of this Regulation any license or rating as a member of the flight crew of aircraft granted under the law of any country or territory. A certificate of validation may be issued according with the terms of paragraph 4 of the Eight Schedule and subject to such conditions and for such period as the Civil Aviation Authority of Macau thinks fit.

22. Every member of the flight crew of a Macau registered aircraft, and every person who engages in flying for the purpose of qualifying for the grant or renewal of a license under this Regulation shall keep a personal flying log book in which the following particulars shall be recorded:

(a) the name and address of the holder of the log book;

(b) particulars of the holder's license (if any) to act as a member of the flight crew of an aircraft;

30. Whenever a holder of a flight engineer license issued or validated in Macau by the Civil Aviation Authority of Macau, let the privileges of his(her) license to expiry and wishes to apply for the revalidation of the license, the applicant shall meet the following requirements:

- (a) hold a valid medical certificate obtained in accordance with the terms and conditions specified in the Fourteenth Schedule to this Regulation;
- (b) comply with the minimum recent experience required in paragraph 29 (a) of this Schedule;
- (c) demonstrate that he(she) still has the aeronautical knowledge required for the issuing of such license. To fulfil this requirement, the candidate shall obtain from an authorised flight instructor, or approved flight school, an endorsement testifying that the candidate is complying with the requirements referred to in paragraph 16 (4) of this Schedule and has accomplished the minimum experience required in paragraph 29 (a) of this Schedule; and
- (d) pay the applicable fees specified in the Twelfth Schedule of this Regulation.

Flight Radiotelephony Operator

31. The holder of a valid flight radiotelephony operator license issued or validated in Macau may apply for his(her) revalidation to the Civil Aviation Authority of Macau and such revalidation may be granted if the following requirements are met:

- (a) the applicant must demonstrate evidence of recently acquired flight experience appropriate to the qualifications held as part of the privileges of his(her) license. For the purpose of this type of license revalidation, recent experience shall be considered as a minimum of 6 months of exercise of privileges and at least 70 hours of service as a flight radiotelephony officer in the last 12 months preceding the date of the application;
- (b) the applicant must submit to the Civil Aviation Authority of Macau a medical certificate in accordance with the terms and conditions specified in the Fourteenth Schedule of this Regulation. Renewal of the applicant's license is subject to the satisfaction of the medical requirements described in the Fourteenth Schedule of this Regulation;
- (c) the applicant must pay the applicable fees in accordance with the specifications of the Twelfth Schedule of this Regulation; and
- (d) in the case the applicant fails to comply with the requirements specified in this paragraph, the Civil Aviation Authority of Macau shall stamp the word "CANCELLED" in all non-revalidated qualifications.

32. Whenever a holder of a flight radiotelephony operator license issued or validated in Macau by the Civil Aviation Authority of Macau, let the privileges of his(her) license to expire and wishes to apply for the revalidation of the license, the applicant shall meet the following requirements:

- (a) hold a valid medical certificate obtained in accordance with the terms and conditions specified in the Fourteenth Schedule to this Regulation;

- (b) comply with the minimum recent experience required in paragraph 31 (a) of this Schedule;
- (c) demonstrate that he(she) still has the aeronautical knowledge required for the issuing of such license. To fulfil this requirement, the candidate shall obtain from an authorised flight instructor, or approved flight school, an endorsement testifying that the candidate is complying with the requirements referred to in paragraph 17 (4) of this Schedule and has accomplished the minimum experience required in paragraph 31 (a) of this Schedule; and
- (d) pay the applicable fees specified in the Twelfth Schedule of this Regulation.

Flight Instructor Rating - Aeroplanes and(or) Helicopters

33. The holder of a valid flight instructor rating - aeroplanes and(or) helicopters issued or validated in Macau may apply for his(her) revalidation to the Civil Aviation Authority of Macau and such revalidation may be granted if the following requirements are met:

- (a) the applicant shall hold a valid pilot license issued or revalidated by the Civil Aviation Authority of Macau according with the requirements established in this Schedule;
- (b) the flight instructor rating - aeroplanes and(or) helicopters may be, in principle, revalidated for maximum periods of 24 months;
- (c) the applicant must demonstrate evidence of recently provided flight instruction work appropriate to the flight instructor rating - aeroplanes and(or) helicopters qualification(s) hold as part of the privileges of his(her) license. For the purpose of this type of rating revalidation, recent experience shall be ascertained every 12 months and shall consist of a practical test, or those portions of the test that the Civil Aviation Authority of Macau deems necessary to determine his competency as a flight instructor. The Civil Aviation Authority of Macau may exempt the applicant from the practical test, provided that:
 - (i) his(her) record of instruction shows that he(she) is a competent and diligent flight instructor; or
 - (ii) he has a satisfactory record as a company check pilot, chief flight instructor or any other activity involving the regular evaluation of pilots and passes any oral test that the Civil Aviation Authority of Macau deems necessary to determine the instructor's knowledge of current pilot training and standards; or
 - (iii) he(she) has successfully completed within 90 days before the application for the renewal of the rating, an approved flight instructor refresher course consisting of not less than 24 hours of ground flight instruction.
- (d) the applicant must pay the applicable fees in accordance with the specifications of the Twelfth Schedule of this Regulation; and
- (e) in the case the applicant fails to comply with the requirements specified in this paragraph, the Civil Aviation Authority of Macau shall stamp the word "CANCELLED" in all non-revalidated qualifications.

34. Whenever a holder of a flight instructor rating - aeroplanes and(or) helicopters issued or validated in Macau by the Civil Aviation Authority of Macau, let the privileges of his(her) license rating to expiry and wishes to apply for the revalidation of the rating, the applicant shall meet the following requirements:

- (a) the applicant shall hold a valid pilot license issued or revalidated by the Civil Aviation Authority of Macau according with the requirements established in this Schedule;
- (b) hold a valid medical certificate obtained in accordance with the terms and conditions specified in the Fourteenth Schedule to this Regulation;
- (c) comply with the minimum recent experience required in paragraph 33 (c) of this Schedule;
- (d) pass the number and type of tests that the Civil Aviation Authority of Macau deems necessary to demonstrate that he(she) still has the aeronautical knowledge skills and competence required for the issuing of such license rating; and
- (e) the applicant must pay the applicable fees in accordance with the specifications of the Twelfth Schedule of this Regulation.

Instrument Rating - Aeroplanes and(or) Helicopters

35. The holder of a valid instrument rating - aeroplanes and(or) helicopters issued or validated in Macau may apply for his(her) revalidation to the Civil Aviation Authority of Macau and such revalidation may be granted if the following requirements are met:

- (a) the applicant shall hold a valid pilot license issued or revalidated by the Civil Aviation Authority of Macau according with the requirements established in this Schedule;
- (b) the instrument rating - aeroplanes and(or) helicopters may be, in principle, revalidated for maximum periods of 6 months;
- (c) the applicant must demonstrate evidence of recently acquired instrument flight experience appropriate to the instrument rating - aeroplanes and(or) helicopters qualification hold as part of the privileges of his(her) license. For the purpose of this type of rating revalidation, recent experience shall be ascertained every 6 months and shall be considered as a minimum of 6 hours of instrument flight time within the preceding 90 days from the date of the application and having completed satisfactorily an instrument check ride;
- (d) the applicant must pay the applicable fees in accordance with the specifications of the Twelfth Schedule of this Regulation; and
- (e) in the case the applicant fails to comply with the requirements specified in this paragraph, the Civil Aviation Authority of Macau shall stamp the word "CANCELLED" in all non-revalidated qualifications.

36. Whenever a holder of an instrument rating - aeroplanes and(or) helicopters issued or validated in Macau by the Civil Aviation Authority of Macau, let the privileges of his(her) license rating to

expiry and wishes to apply for the revalidation of the rating, the applicant shall meet the following requirements:

- (a) the applicant shall hold a valid pilot license issued or revalidated by the Civil Aviation Authority of Macau according with the requirements established in this Schedule;
- (b) hold a valid medical certificate obtained in accordance with the terms and conditions specified in the Fourteenth Schedule to this Regulation;
- (c) comply with the minimum recent experience required in paragraph 35 (c) of this Schedule and;
- (d) demonstrate that he(she) still has the aeronautical knowledge required for the issuing of such rating. To fulfil this requirement, the candidate shall obtain from an authorised flight instructor, or approved flight school, an endorsement testifying that the candidate is complying with the requirements referred to in paragraph 48 (3) or 49 (3) of this Schedule and has accomplished the minimum experience required in paragraph 35 (c) of this Schedule; and
- (e) pay the applicable fees specified in the Twelfth Schedule of this Regulation.

Part C - License Ratings and Categories

37. (1) The following ratings may be included in a pilot license (other than a student pilot's license) in Macau granted under the present Part of this Schedule, and, subject to the provisions of this Regulation and of the license, the inclusion of a rating in a license shall have the consequences respectively specified as follows:

Aircraft Rating - the license shall entitle the holder to act as pilot only of aircraft of the types specified in the aircraft rating and different types of aircraft may be specified in respect of different privileges of a license.

Instrument Rating (Aircraft) - shall entitle the holder of the license to act as pilot of an aircraft flying in controlled airspace in accordance with the Instrument Flight Rules:

Provided that the holder shall not be so entitled unless the license bears a certificate, signed by a person authorised by the Civil Aviation Authority of Macau for that purpose, indicating that the holder has, within the previous 6 months, passed an instrument flying test.

Night Rating (Private Pilot's License - Aeroplanes) - shall entitle the holder of a private pilot's license - aeroplanes to act as pilot-in-command of an aeroplane carrying passengers by night.

Night Rating (Private Pilot License - Helicopters) - shall entitle the holder of a private pilot's license - helicopters to act as pilot-in-command of a helicopter carrying passengers by night.

Flying Instructor's Rating - shall entitle the holder of the license to give instruction in flying aircraft of such types as may be specified in the rating for that purpose, provided that:

Such instruction shall only be given under the supervision of a person present during the take off and landing at the aerodrome at which the instruction is to begin and end and holding a pilot's license endorsed with a flying instructor's rating;

(2) An aircraft rating may be included in every flight engineer's license. The license shall entitle the holder to act as flight engineer only of aircraft of a type specified in the aircraft rating.

(3) For the purposes of this Schedule:

“*solo flight*” means a flight on which the pilot of the aircraft is not accompanied by a person holding a pilot's license granted or rendered valid under this Regulation;

“*cross-country flight*” means any flight during the course of which the aircraft is more than 4.8 km from the aerodrome of departure.

38. A person shall not act either as pilot-in-command or as co-pilot of a Macau registered aircraft unless that person is the holder of a pilot license issued, validated or revalidated by the Civil Aviation Authority of Macau in accordance with the provisions of this Schedule and in any of the following categories:

(a) aeroplanes

(b) helicopters

Provided that the category of aircraft shall be included in the title of the license itself, or endorsed as a category rating on the license.

39. The holder of a valid pilot license issued, validated or revalidated in Macau by the Civil Aviation Authority of Macau seeking a license for an additional category of aircraft, shall apply to the Civil Aviation Authority of Macau to either:

(a) issue the license holder with an additional pilot license for that category of aircraft;
or

(b) endorse the original license with the new category rating, subject to the conditions established by the Civil Aviation Authority of Macau for the issuing of category ratings.

In this respect, the applicant shall follow the Civil Aviation Authority of Macau's requirements for category ratings in terms of licensing specifications for pilots and at levels appropriate to the privileges to be granted to the license holder.

40. In the process of issuing or validating category ratings for pilot licenses issued validated or revalidated in Macau by the Civil Aviation Authority of Macau, the following requirements must be taken into consideration:

(a) when established, category ratings shall be for categories of aircraft listed in paragraph 38 of this Schedule;

(b) category ratings shall not be endorsed on a license when the category is included in the title of the license itself;

(c) any additional category rating endorsed on a pilot license shall indicate the level of licensing privileges at which the category rating is granted; and

(d) the holder of a pilot license seeking additional category ratings shall meet the requirements specified in this Schedule appropriate to the privileges for which the category rating is sought.

41. The Civil Aviation Authority of Macau establishes the following class ratings for aeroplanes and helicopters for those flight crew members holding a pilot license issued or validated in Macau by the Civil Aviation Authority of Macau:

- (a) single-engine, land;
- (b) single-engine, sea;
- (c) multi-engine, land; or
- (d) multi-engine, sea.

The provisions of this paragraph do not preclude the establishment of other class ratings within this basic structure.

42. The Civil Aviation Authority of Macau shall establish type ratings to be incorporated in the pilots licenses issued or validated in Macau, for:

- (a) each type of aircraft certificated for operation with a minimum crew of at least two pilots;
- (b) each type of helicopter certificated for single-pilot operation; and
- (c) any type of aircraft whenever considered necessary by the Civil Aviation Authority of Macau.

43. The Civil Aviation Authority of Macau having issued, validated or revalidated a pilot license in Macau shall not permit the holder of such license to act either as pilot-in-command or as a co-pilot of an aeroplane or helicopter unless the holder has received authorization as follows:

- (a) the appropriate class rating specified in paragraph 41 of this Schedule;
- (b) a type rating when required in accordance with the provisions of paragraph 42 of this Schedule; or
- (c) for the purpose of training, testing, or specific special purpose non-revenue, non-passenger carrying flights, special authorization may be provided in writing to the license

holder by the Civil Aviation Authority of Macau in place of issuing the class or type rating in accordance with this paragraph. This authorization shall be limited in validity to the time needed to complete the specific flight.

Note: When a type rating is issued limiting the privileges to act as co-pilot, such limitation shall be endorsed on the rating.

44. The applicant for the incorporation of class or type ratings in his(her) license in Macau shall have to demonstrate to the Civil Aviation Authority of Macau a degree of skill appropriate to the license in an aircraft of the class for which the rating is sought. The requirements established by the Civil Aviation Authority of Macau for the issue, validation or revalidation of type ratings for pilot licenses in Macau are as follows:

(1) *Type rating as required by paragraph 42 (a)*

(a) the applicant shall have gained, under appropriate supervision, experience in the applicable type of aircraft and/or flight simulator in the following:

(i) normal flight procedures and manoeuvres during all phases of flight;

(ii) abnormal and emergency procedures and manoeuvres in the event of failures and malfunctions of equipment, such as powerplant, systems and airframe;

(iii) where applicable, instrument procedures, including instrument approach, missed approach and landing procedures under normal, abnormal and emergency conditions, including simulated engine failure;

(iv) procedures for crew incapacitation and crew co-ordination including allocation of pilot tasks; and

(v) crew co-operation and use of checklists.

(b) the applicant shall have demonstrated the skill and knowledge required for the safe operation of the applicable type of aircraft, relevant to the duties of a pilot-in-command or a co-pilot as applicable; and

(c) the applicant shall have demonstrated, at the airline transport pilot license level, an extent of knowledge determined by the Civil Aviation Authority of Macau on the basis of the requirements specified in paragraphs 13 (2) or 14 (2) of this Schedule, as applicable.

(2) *Type rating as required by paragraph 42 (b) and (c)*

The applicant shall have demonstrated the skill and knowledge required for the safe operation of the applicable type of aircraft, relevant to the licensing requirements and piloting functions of the applicant.

(3) *Use of synthetic flight trainers for demonstrations of skill*

The use of a synthetic flight trainer for performing any manoeuvre required during the demonstration of skill for the issue of a license or rating shall be approved by the Civil Aviation Authority of Macau which shall ensure that the synthetic flight trainer used is appropriate to the task.

45. The Civil Aviation Authority of Macau, having issued, validated or revalidated a pilot license in Macau, shall not permit the holder thereof to act either as pilot-in-command or as a co-pilot of an aircraft under instrument flight rules (IFR) unless such holder has received proper authorization from the Civil Aviation Authority of Macau. Proper authorization shall comprise an instrument rating appropriate to the aircraft category. In the case of an airline transport pilot license - aeroplanes, the instrument rating shall be automatically granted as part of the requirements to obtain this license.

46. The Civil Aviation Authority of Macau, having issued, validated or revalidated a pilot license shall not permit the holder thereof to carry out flight instruction required for the issue of a private pilot license - aeroplanes or helicopters, commercial pilot license - aeroplanes or helicopters, or a flight instructor rating appropriate to aeroplanes and helicopters, unless such holder has received proper authorisation from the Civil Aviation Authority of Macau. Proper authorisation shall comprise:

- (a) a flight instructor rating on the holder's license; or
- (b) the authority to act as an agent of an approved organisation authorised by the Civil Aviation Authority of Macau to carry out flight instruction; or
- (c) a specific authorisation granted by the Civil Aviation Authority of Macau.

Flight Instructor Rating - Aeroplanes and Helicopters

47. The Civil Aviation Authority of Macau requires an applicant for a flight instructor rating either in aeroplanes or helicopters in Macau to meet the following requirements in respect of knowledge, experience and skill:

(1) *Knowledge*

The applicant shall have met the knowledge requirements for the issue of a commercial pilot license as specified in paragraphs 11 (2) or 12 (2) of this Schedule, as appropriate. In addition, the applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight instructor rating, in at least the following areas:

- (a) techniques of applied instruction;
- (b) assessment of student performance in those subjects in which ground instruction is given;
- (c) the learning process;
- (d) elements of effective teaching;

- (e) student evaluation and testing, training philosophies;
- (f) training programme development;
- (g) lesson planning;
- (h) classroom instructional techniques;
- (i) use of training aids;
- (j) analysis and correction of student errors;
- (k) human performance and limitations relevant to flight instruction; and
- (l) hazards involved in simulating system failures and malfunctions in the aircraft.

(2) *Experience*

- (a) the applicant shall have met the experience requirements for the issue of a commercial pilot license as specified in paragraphs 11 (3) or 12 (3) of this Schedule, as appropriate.

Flight instruction

- (b) the applicant shall, under the supervision of a flight instructor accepted by the Civil Aviation Authority of Macau for that purpose:
 - (i) have received instruction in flight instructional techniques including demonstration, student practices, recognition and correction of common student errors; and
 - (ii) have practical instructional techniques in those flight manoeuvres and procedures in which it is intended to provide flight instruction.

(3) *Skill*

The applicant shall have demonstrated, in the category of aircraft for which flight instructor privileges are sought, the ability to instruct in those areas in which flight instruction is to be given, including pre-flight, post-flight and ground instruction as appropriate.

Instrument Rating - Aeroplanes

48. The Civil Aviation Authority of Macau requires an applicant in Macau for the incorporation of an instrument rating - aeroplanes in his(her) pilot license to meet the following requirements in respect of knowledge, experience, skill and medical fitness:

(1) *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of an instrument rating - aeroplanes, in at least the following subjects:

Air law

- (a) rules and regulations relevant to flight under IFR; related air traffic services practices and procedures;

Aircraft general knowledge

- (b) 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;

- (c) compasses, turning and acceleration errors; gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments;

Flight performance and planning

- (d) pre-flight preparations and checks appropriate to flight under IFR;

- (e) operational flight planning; preparation and filing of air traffic services flight plans under IFR; altimeter setting procedures;

Human performance and limitations

- (f) human performance and limitations relevant to instrument flight in aeroplanes;

Meteorology

- (g) application of aeronautical meteorology; interpretation and use of reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information; altimetry;

- (h) cause, recognition and effects of engine and airframe icing; frontal zone penetration procedures; hazardous weather avoidance;

Navigation

- (i) practical air navigation using radio navigation aids;

- (j) use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids;

Operational procedures

(k) 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;

(l) precautionary and emergency procedures; safety practices associated with flight under IFR; and

Radiotelephony

(m) radiotelephony procedures and phraseology as applied to aircraft operations under IFR, action to be taken in case of communication failure.

(2) *Experience*

(a) the applicant shall hold a private or commercial pilot license - aeroplanes.

(b) the applicant shall have completed not less than:

(i) 50 hours of cross-country flight time as pilot-in-command of aircraft in categories acceptable to the Civil Aviation Authority of Macau, of which not less than 10 hours shall be in aeroplanes; and

(ii) 40 hours of instrument time in aeroplanes or helicopters of which not more than 20 hours, or 30 hours where a flight simulator is used, may be instrument ground time. The ground time shall be under the supervision of an authorised ground instructor.

Flight instruction

(c) the applicant shall have gained not less than 10 hours of the instrument flight time required in proviso (b) (ii) while receiving dual instrument flight instruction in aeroplanes from an authorized flight instructor. 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:

(i) 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;

(ii) pre-flight inspection, use of checklists, taxiing and pre-take-off checks;

(iii) 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; and
- landings from instrument approaches.

(d) in-flight manoeuvres and particular flight characteristics.

(e) if the privileges of the instrument rating are to be exercised on multi-engine aeroplanes, the applicant shall have received dual instrument flight instruction in such an aeroplane from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in the operation of the aeroplane solely by reference to instruments with one engine inoperative or simulated inoperative.

(3) *Skill*

(a) the applicant shall have demonstrated the ability to perform the procedures and manoeuvres described in sub-paragraph (2) (c) with a degree of competency appropriate to the privileges granted to the holder of an instrument rating - aeroplanes, and to:

- (i) operate the aeroplane within its limitations;
- (ii) complete all manoeuvres with smoothness and accuracy;
- (iii) exercise good judgement and airmanship;
- (iv) apply aeronautical knowledge; and
- (v) maintain control of the aeroplane at all times in a manner such that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

(b) the applicant shall have demonstrated the ability to operate multi-engine aeroplanes solely by reference to instruments with one engine inoperative, or simulated inoperative, if the privileges of the instrument rating are to be exercised on such aeroplanes.

Note: Attention is called to paragraph 6 of this Schedule on the use of synthetic flight trainers for demonstrations of skill.

(4) *Medical fitness*

Applicants who hold a private pilot license shall have established, in addition to the applicable medical standards, their hearing acuity on the basis of compliance with the hearing requirements established for Standard No. 1, according with paragraph 27 of the Fourteenth Schedule.

Instrument rating - Helicopters

49. The Civil Aviation Authority of Macau requires an applicant in Macau for the incorporation of an instrument rating - helicopters in his(her) pilot license to meet the following requirements in respect of knowledge, experience, skill and medical fitness:

(1) *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of an instrument rating - helicopters, in at least the following subjects:

Air law

(a) rules and regulations relevant to flight under IFR; related air traffic services practices and procedures;

Aircraft general knowledge

(b) use, limitation and serviceability of avionics and instruments necessary for the control and navigation of helicopters under IFR and in instrument meteorological conditions; use and limitations of autopilot;

(c) compasses, turning and acceleration errors; gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments;

Flight performance and planning

(d) pre-flight preparations and checks appropriate to flight under IFR;

(e) operational flight planning; preparation and filing of air traffic services flight plans under IFR; altimeter setting procedures;

Human performance and limitations

(f) human performance and limitations relevant to instrument flight in helicopters;

Meteorology

- (g) application of aeronautical meteorology; interpretation and use of reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information; altimetry;
- (h) causes, recognition and effects of engine, airframe and rotor icing; frontal zone penetration procedures; hazardous weather avoidance;

Navigation

- (i) practical air navigation using radio navigation aids;
- (j) use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids;

Operation procedures

- (k) 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;
- (l) precautionary and emergency procedures; safety practices associated with flight under IFR; and

Radiotelephony

- (m) radiotelephony procedures and phraseology as applied to aircraft operations under IFR; action to be taken in case of communication failure.

(2) *Experience*

- (a) the applicant shall hold a private, commercial or airline transport pilot license - helicopters.
- (b) the applicant shall have completed not less than:
 - (i) 50 hours of cross-country flight time as pilot-in-command of aircraft in categories acceptable to the Civil Aviation Authority of Macau, of which not less than 10 hours shall be in helicopters; and
 - (ii) 40 hours of instrument time in helicopters or aeroplanes of which not more than 20 hours, or 30 hours where a flight simulator is used, may be instrument ground time. The ground time shall be under the supervision of an authorized instructor.

Flight instruction

(c) the applicant shall have gained not less than 10 hours of the instrument flight time required in proviso (b) (ii) while receiving dual instrument flight instruction in helicopters from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in at least the following areas and to the level of performance required for the holder of an instrument rating:

(i) pre-flight procedures, including the use of the flight manual or equivalent documents, and appropriate air traffic services documents in the preparation of an IFR flight plan;

(ii) pre-flight inspection, use of checklists, taxiing and pre-take-off checks;

(iii) 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; and
- landings from instrument approaches.

(d) in-flight manoeuvres and particular flight characteristics; and

(e) if appropriate, operation of a multi-engined helicopter solely by reference to instruments with one engine inoperative or simulated inoperative.

(3) *Skill*

The applicant shall have demonstrated the ability to perform the procedures and manoeuvres specified in sub-paragraph (2) (c) with a degree of competency appropriate to the privileges granted to the holder of an instrument rating - helicopters, and to:

(a) operate the helicopter within its limitations;

(b) complete all manoeuvres with smoothness and accuracy;

- (c) exercise good judgement and airmanship;
- (d) apply aeronautical knowledge; and
- (e) maintain control of the helicopter at all times in a manner such that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

Note: Attention is called to paragraph 6 of this Schedule on the use of synthetic flight trainers for demonstrations of skill.

(4) *Medical fitness*

Applicants who hold a private pilot license shall have established, in addition to the applicable medical standards, their hearing acuity on the basis of compliance with the hearing requirements established for Standard No. 1, according with paragraph 27 of the Fourteenth Schedule.

Part D - Privileges of the licenses and ratings holders

Student Pilot License - Aeroplanes and Helicopters

50. Subject to compliance with the requirements specified in paragraph 8 of this Schedule, the privileges of the holder of a student pilot license - aeroplanes or helicopters, granted in Macau by the Civil Aviation Authority of Macau, shall be:

- (a) to entitle the holder to fly as pilot-in-command of an aircraft for the purpose of becoming qualified for the grant or renewal of a pilot license;
- (b) shall be valid only for flights within Macau and within any country specified in the license;
- (c) shall not entitle the holder to fly as pilot-in-command of an aircraft in which any person is carried;
- (d) shall be valid only for flights carried out in accordance with instructions given by a person holding a valid pilot license granted under the terms of this Schedule, being a license which includes a flying instructor's rating entitling him to give instruction in flying the type of aircraft to be flown.

Provided that:

- (e) a student pilot shall not fly solo unless under the supervision of, or with the authority of, an authorized flight instructor with a valid license; and
- (f) a student pilot shall not fly solo in an aircraft on an international flight unless by special, or general arrangement, between the Civil Aviation Authority of Macau and under other Contracting States.

Private Pilot License - Aeroplanes and Helicopters

51. Subject to compliance with the requirements specified in paragraphs 7, 20 and Part B of this Schedule, the privileges of the holder of a private pilot license - aeroplanes or helicopters, granted or revalidated in Macau by the Civil Aviation Authority of Macau, shall be:

- (a) to entitle the holder to fly as pilot-in-command or co-pilot of an aeroplane of any of the types specified in the aircraft rating included in the license, when the aircraft is flying for any purpose other than public transport or aerial work, meaning that engagement in any flights which involve any kind of remuneration or revenue is not allowed;
- (b) not to entitle the holder to act as pilot-in-command by night unless a valid night rating is included in the license, or unless a valid instrument rating is included therein meaning the compliance with the requirements specified in paragraphs 48 and(or) 49 of this Schedule, whichever is the applicable case; or
- (c) to entitle the holder to act as a holder of a flight radiotelephony operator's restricted license.

Commercial Pilot License - Aeroplanes and Helicopters

52. Subject to compliance with the requirements specified in paragraphs 7, 20 and Part B of this Schedule, the privileges of the holder of a commercial pilot license - aeroplanes or helicopters, granted or revalidated in Macau by the Civil Aviation Authority of Macau, shall be:

- (a) to exercise all the privileges of the holder of a private pilot license - aeroplanes or helicopters, whichever is the applicable case;
- (b) to act as pilot-in-command in any aeroplane or helicopter, whichever is the applicable case of his(her) license, engaged in operations other than commercial air transportation;
- (c) to act as pilot-in-command in commercial air transportation in any aeroplane or helicopter, whichever is the applicable case of his(her) license, certified for single-pilot operation; but which maximum total weight authorised does not exceed 5,700 kg and which is of a type specified in the aircraft rating section included in the license, when the aeroplane is engaged in a flight for the purpose of commercial air transportation; and

Provided that:

- (i) he shall not, unless his license includes an instrument rating, fly such an aircraft on any scheduled journey;
- (ii) he shall not fly such an aircraft on a flight carrying passengers at night unless an instrument rating is included in his license; and
- (iii) he shall not, unless his license includes an instrument rating, fly any such aircraft of which the maximum total weight authorised exceeds 2,300 kg on any flight for the purpose of public transport except a flight beginning and ending at Macau and not extending beyond 25 nautical miles from Macau;

- (d) to act as co-pilot in commercial air transportation in aeroplanes or helicopters, whichever is the applicable case of his(her) license, required to be operated with a co-pilot.

53. Before exercising the privileges of a commercial pilot license at night, the Civil Aviation Authority of Macau requires that the license holder shall have completed, within the immediately proceeding 90 days, with the requirements specified in paragraphs 11 (3) (b) (iv) or 12 (3) (b) (iv) of this Schedule, whichever is the applicable case, and paragraphs 11 (3) (e) or 12 (3) (e) of this Schedule, whichever is the applicable case, as pilot-in-command.

Airline Transport Pilot License - Aeroplanes and Helicopters

54. Subject to compliance with the requirements specified in paragraphs 7, 20 and Part B of this Schedule, the privileges of the holder of an airline transport pilot license - aeroplanes or helicopters, granted or revalidated in Macau by the Civil Aviation Authority of Macau, shall be:

- (a) to exercise all the privileges of the holder of a private and commercial pilot license - aeroplanes or helicopters, whichever is the applicable case of his(her) license, and of an instrument rating in the case of an aeroplane license when the aircraft is engaged on a flight for commercial purposes, provided that:

he shall not fly as pilot-in-command on a night flight carrying passengers unless he has a valid instrument rating qualification issued or revalidated by the Civil Aviation Authority of Macau; and

- (b) to act as pilot-in-command and co-pilot in aeroplanes or helicopters, whichever is the applicable case of his(her) license, required to carry 2 pilots and of a type specified in the respective aircraft rating for the purposes of public transport or aerial work in air transportation.

Instrument Rating - Aeroplanes and(or) Helicopters

55. Subject to compliance with the requirements specified in paragraphs 7, 20 and Part B of this Schedule, the privileges of the holder of an instrument rating - aeroplanes and(or) helicopters, granted or revalidated in Macau by the Civil Aviation Authority of Macau, shall be to pilot the applicable aircraft under IFR. Before exercising such privileges on multi-engine aeroplanes, the holder of the rating shall have complied with the requirements of paragraph 48 (3) (b) of this Schedule.

56. The privileges granted in paragraph 55 of this Schedule may be conferred by the Civil Aviation Authority of Macau in a single instrument rating in lieu of issuing separate instrument ratings for aeroplanes and helicopters provided that the requirements for the issue of both ratings, as specified in paragraphs 48 and 49 of this Schedule, have been met.

Flight Instructor Rating - Aeroplanes and(or) Helicopters

57. Subject to compliance with the requirements specified in paragraphs 18, 20 and Part B of this Schedule, the privileges of the holder of a flight instructor rating - aeroplanes and(or) helicopters, granted or revalidated in Macau by the Civil Aviation Authority of Macau, shall be:

- (a) to supervision solo flights by student pilots; and

(b) to carry out flight instruction for the issue of a private pilot license, a commercial pilot license, an instrument rating, and a flight instructor rating provided that the flight instructor:

- (i) holds, at least, a valid license and rating for which instruction is being given, in the appropriate aircraft category;
- (ii) holds a valid license and rating necessary to act as the pilot-in-command of the aircraft on which the instruction is given; and
- (iii) has the flight instructor privileges granted, entered on the license.

Flight Navigator License

58. Subject to compliance with the requirements specified in paragraphs 7, 18 and 20 of this Schedule, the privileges of the holder of a flight navigator license granted or revalidated in Macau by the Civil Aviation Authority of Macau shall be to act as flight navigator of any aircraft registered in Macau.

Flight Engineer License

59. Subject to compliance with the requirements specified in paragraphs 7, 18 and 20 the privileges of the holder of a flight engineer license granted or revalidated in Macau by the Civil Aviation Authority of Macau shall be to act as flight engineer of any type of aircraft registered in Macau on which the holder has demonstrated a level of knowledge and skill, as determined by the Civil Aviation Authority of Macau on the basis of those requirements specified in paragraphs 16 (2) and 16 (4) of this Schedule, which are applicable to the safe operation of that type of aircraft.

Flight Radiotelephony Operator License

60. The privileges of the holder of a flight radiotelephony operator license shall be to act as an operator of a radiotelephone on board of an aircraft registered in Macau provided that he has familiarized himself with all pertinent and current information regarding the types of equipment and operating procedures used at that aeronautical station. Where the knowledge and skill of the application has also been established in respect of radiotelegraphy, the Civil Aviation Authority of Macau shall endorse the license for the operation of radiotelegraphy equipment. The holder of a license with such endorsement may operate radiotelegraphy as well as radiotelephony equipment in an aeronautical station on board of an aircraft registered in Macau.

NINTH SCHEDULE

(Paragraph 24)

PUBLIC TRANSPORT - OPERATIONAL REQUIREMENTS

PART A - OPERATIONS MANUAL

1. Information and instructions relating to the following matters shall be included in the operations manual referred to in paragraph 24 (2) of the Regulation:

- (a) the number of the crew to be carried in the aircraft, on each stage of any route to be flown, and the respective capacities in which they are to act, and instructions as to the Regulation and circumstances in which command is to be assumed by members of the crew;
- (b) the respective duties of each member of the crew and the other members of the operating staff;
- (c) the particulars of the scheme referred to in paragraph 52 (1) (c) (i) of the Regulation;
- (d) such technical particulars concerning the aircraft, its engines and equipment and concerning the performance of the aircraft as may be necessary to enable the flight crew of the aircraft to perform their respective duties;
- (e) the manner in which the quantities of fuel and oil to be carried by the aircraft are to be computed and records of fuel and oil carried and consumed on each stage of the route to be flown are to be maintained; the instructions shall take account of circumstances likely to be encountered on the flight including the possibility of failure of one or more of the aircraft engines;
- (f) the manner in which the quantity of oxygen, if any, and oxygen equipment to be carried in the aircraft for the purpose of complying with Scale K in the Fifth Schedule is to be computed;
- (g) the check system to be followed by the crew of the aircraft prior to and on take-off, on landing and in an emergency, so as to ensure that the operating procedures contained in the operations manual and in the flight manual or performance schedule forming part of the relevant Certificate of Airworthiness are complied with;
- (h) the circumstances in which a radio watch is to be maintained;
- (i) the circumstances in which oxygen is to be used by the crew of the aircraft, and by passengers;
- (j) communication, navigational aids, aerodromes, local regulations, inflight procedures, approach and landing procedures and such other information as the operator may deem necessary for the proper conduct of flight operations; the information referred to in this paragraph shall be contained in a route guide, which may be in the form of a separate volume;
- (k) the reporting in flight to the notified authorities of meteorological observations;
- (l) the minimum altitudes for safe flight on each stage of the route to be flown and any planned diversion therefrom, such minimum altitudes being not lower than any which may be applicable under the law of Macau or of the countries whose territory is to be flown over;
- (m) such matters as may be prescribed relating to weather conditions for take-offs and landings;
- (n) emergency flight procedures, including procedures for the instruction of passengers in the position and use of emergency equipment, and procedures to be adopted when the

- commander of the aircraft becomes aware that another aircraft or a vessel is in distress and needs assistance;
- (o) procedures and visual signals for use by intercepting and intercepted aircraft as prescribed in ICAO Annex 2;
- (p) operational procedures to ensure that an aeroplane being used to conduct precision approaches crosses the threshold by a safe margin, with the aeroplane in the landing configuration and attitude;
- (q) for aeroplanes intended to be operated above 49,000 ft:
- (i) information which will enable the pilot to determine the best course of action to take in the event of exposure to solar cosmic radiation; and
 - (ii) procedures in the event that a decision to descent is taken, covering
 - (aa) the necessity to give the appropriate air traffic service (ATS) unit prior warning of the situation and of obtaining a provisional descent clearance;
 - (bb) the action to be taken in the event that communication with the ATS unit cannot be established or is interrupted;
- (r) checklist of emergency and safety equipment and instructions for their use;
- (s) information and instructions on the carriage of dangerous goods, including action to be taken in the event of an emergency;
- (t) emergency evacuation procedures;
- (u) safety precaution during refuelling with passengers on board;
- (v) such particulars of any permission granted to the operator pursuant to paragraph 14 as may be necessary to enable the commander of the aircraft to determine whether he can comply with paragraph 30 (b) (ii); and
- (w) the labelling and marking of dangerous goods, the manner in which they must be loaded on or suspended beneath an aircraft, the responsibilities of members of the crew in respect of the carriage of dangerous goods and the action to be taken in the event of emergencies arising involving dangerous goods:

Provided that in relation to any flight which is not one of a series of flights between the same two places it shall be sufficient if, to the extent that it is not practicable to comply with paragraphs (j), (l) and (m) of this Part, the manual contains such information and instructions as will enable the equivalent data to be ascertained before take-off.

PART B - CREW TRAINING AND TESTS

(Paragraph 26)

1. The training, experience, practice and periodical tests required under paragraph 26 (2) of the Regulation, in the case of members of the crew of an aircraft engaged on a flight for the purpose of public transport shall be as follows:

(1) The Crew.

Every member of the crew shall:

(a) have been tested within the relevant period by or on behalf of the operator as to his knowledge of the use of the emergency and life saving equipment required to be carried in the aircraft on the flight;

(b) have practised within the relevant period under the supervision of the operator or of a person appointed by him for the purpose of carrying out of the duties required of him in case of an emergency occurring to the aircraft, either in an aircraft of the type to be used on the flight or in apparatus approved by the Civil Aviation Authority of Macau for the purpose and controlled by persons so approved; and

(c) have been trained in the transport of dangerous goods referred to in paragraph 41.

(2) Pilots.

(a) Every pilot included in the flight crew who is intended by the operator to fly as pilot in circumstances requiring compliance with Instrument Flight Rules shall within the relevant period have been tested by or on behalf of the operator:

(i) as to his competence to perform his duties while executing normal manoeuvres and procedures in flight, in an aircraft of the type to be used on the flight, including the use of the instruments and equipment provided in the aircraft; and

(ii) as to his competence to perform his duties in instrument flight conditions while executing emergency manoeuvres and procedures in flight, in an aircraft of the type to be used on the flight, including the use of the instruments and equipment provided in the aircraft.

(b) A pilot's ability to carry out normal manoeuvres and procedures shall be tested in the aircraft in flight. The other tests required by this sub-paragraph may be conducted either in the aircraft in flight or under the supervision of a person approved by the Civil Aviation Authority of Macau for the purpose, by means of an approved flight simulator.

(c) The tests specified in sub-paragraph (2) (a) (ii) when conducted in the aircraft in flight shall be carried out either in actual instrument flight conditions or in approved simulated instrument flight conditions.

(d) Every pilot included in the flight crew whose license does not include an instrument rating or who, notwithstanding the inclusion of such a rating in his license, is not intended by the operator to fly in the circumstances requiring compliance with the Instrument Flight Rules shall within the relevant period have been tested, by or on behalf of the operator, in flight in an aircraft of the types to be used on the flight:

(i) as to his competence to act as pilot of the aircraft while executing normal manoeuvres and procedures; and

(ii) as to his competence to act as a pilot of the aircraft while executing emergency manoeuvres and procedures

(e) Every pilot included in the flight crew who is seated at the flying controls during take-off or landing shall within the relevant period:

(i) have been tested as to his proficiency in using instrument approach-to-land systems of the type in use at the aerodrome of intended landing and any alternate aerodromes, such test being carried out either in flight in instrument flight conditions or in approved simulated instrument flight conditions or under the supervision of a person approved by the Civil Aviation Authority of Macau for the purpose by means of an approved flight simulator; and

(ii) have carried out when seated at the flying controls not less than 3 take-offs and 3 landings in aircraft of the type to be used on the flight.

(3) Flight Engineers.

Every flight engineer included in the flight crew shall within the relevant period have been tested by or on behalf of the operator, either in flight, or, under the supervision of a person approved by the Civil Aviation Authority of Macau for the purpose, by means of apparatus on the ground, as to his competence to perform the duties of flight engineer in an aircraft of the type to be used on the flight, including his ability to execute emergency procedures in the course of such duties.

(4) Flight Navigators and Flight Radio Operators.

Every flight navigator and flight radio operator whose inclusion in the flight crew is required under paragraph 18 (4) and (6) respectively of the Regulation, shall within the relevant period have been tested by or on behalf of the operator as to his competence to perform his duties in conditions corresponding to those likely to be encountered on the flight:

(a) in the case of a flight navigator, using equipment of the type to be used in the aircraft on the flight for purposes of navigation; and

(b) in the case of a flight radio operator using radio equipment of the type installed in the aircraft to be used on the flight, and including a test of his ability to carry out emergency procedures.

(5) Aircraft Commanders.

(a) The pilot designated as commander of the aircraft for the flight shall within the relevant period have demonstrated to the satisfaction of the operator that he has adequate knowledge of the route to be taken, the aerodromes of take-off and landing, and any alternate aerodromes, including in particular his knowledge of the terrain, the seasonal meteorological conditions, the meteorological communications and air traffic facilities, services and procedures, the search and rescue procedures and the navigational facilities, relevant to the route;

(b) In determining whether a pilot's knowledge of the matters referred to in subparagraph (5) (a) is sufficient to render him competent to perform the duties of aircraft commander on the flight, the operator shall take into account the pilot's flying experience in conjunction with the following:

- (i) the experience of other members of the intended flight crew;
- (ii) the influence of terrain and obstructions on departure and approach procedures at the aerodromes of take-off and intended landing and at alternate aerodromes;
- (iii) the similarity of the instrument approach procedures and let down aids to those with which the pilot is familiar;
- (iv) the dimensions of runways which may be used in the course of the flight in relation to the performance limits of aircraft of the type to be used on the flights;
- (v) the reliability of meteorological forecasts and the probability of difficult meteorological conditions in the areas to be traversed;
- (vi) the adequacy of the information available regarding the aerodrome of intended landing and any alternate aerodromes;
- (vii) the nature of air traffic control procedures and familiarity of the pilot with such procedures;
- (viii) the influence of terrain on route conditions and the extent of the assistance obtainable en-route from navigational aids and air-to-ground communication facilities; and
- (ix) the extent to which it is possible for the pilot to become familiar with unusual aerodrome procedures and features of the route by means of ground instruction and training devices.

(6) For the purposes of this paragraph:

"*instrument flight conditions*" means weather conditions such that the pilot is unable to fly by visual reference to objects outside the aircraft;

"*relevant period*" means a period which immediately precedes the commencement of the flight being a period:

- (a) in the case of sub-paragraph (2) (e) (ii), of 3 months;
- (b) in the case of sub-paragraphs (2) (a) (ii), (2) (e) (i) and (3), of 6 months;
- (c) in the case of sub-paragraphs (1), (2) (a) (i), (4) and (5) (a), of 13 months;

Provided that:

- (i) any pilot of the aircraft to whom sub-paragraph (2) (a) (ii) or (2) (e) (i) and any flight engineer of the aircraft to whom sub-paragraph (3) applies shall for the purposes of the flight be deemed to have complied with such requirements within the relevant period if he has qualified to perform his duties in accordance therewith on two occasions within the period of 13 months immediately preceding the flight, such occasions being separated by an interval of not less than 4 months;
- (ii) the requirements of sub-paragraph (5) (a) shall be deemed to have been complied with within the relevant period by a pilot designated as commander of the aircraft for the flight if, having become qualified so to act on flights between the same places over the same route more than 13 months before commencement of the flight, he has within the period of 13 months immediately preceding the flight flown as pilot of an aircraft between those places over that route.

2. (1) The records required to be maintained by an operator under paragraph 26 (2) of the Regulation shall be accurate and up to date records so kept as to show, on any date, in relation to each person who has during the period of two years immediately preceding that date flown as a member of the crew of any public transport aircraft operated by that operator:

- (a) the date and particulars of each test required by this Schedule undergone by that person during the said period including the name and qualifications of the examiner;
- (b) the date upon which that person last practised the carrying out of the duties referred to in paragraph 1 (1) (b);
- (c) the operator's conclusions based on each such test and practice as to that person's competence to perform his duties;
- (d) the date and particulars of any decision taken by the operator during the said period in pursuance of paragraph 1 (5) (a) including particulars of the evidence upon which that decision was based.

(2) The operator shall whenever called upon to do so by any authorised person produce for the inspection of any person so authorised all records referred to in sub-paragraph (1) and furnish to any such person all such information as he may require in connection with any such records and produce for his inspection all log books, certificates, papers and other documents

whatsoever which he may reasonably require to see for the purpose of determining whether such records are complete or of verifying the accuracy of their contents.

(3) The operator shall at the request of any person in respect of whom he is required to keep records as aforesaid furnish to that person, or to any operator of aircraft for the purpose of public transport by whom that person may subsequently be employed, particulars of any qualifications in accordance with this Schedule.

PART C - TRAINING MANUAL

(Paragraph 25)

The following information and instructions in relation to the training, experience, practice and periodical tests required under paragraph 26 (2) of the Regulation shall be included in the training manual referred to in paragraph 25 (2) of the Regulation:

- (a) the manner in which the training, practice and periodical tests required under paragraph 26 (2) of the Regulation and specified in Part B of this Schedule are to be carried out;
- (b)
 - (i) the minimum qualifications and experience which the operator requires of persons appointed by him to give or to supervise the training, practice and periodical tests; and
 - (ii) the type of training, practice and periodical tests which each such person is appointed to give or to supervise; and
 - (iii) the type of aircraft in respect of which each such person is appointed to give or to supervise the training, practice and periodical tests;
- (c) the minimum qualifications and experience required of each member of the crew undergoing the training, practice and periodical tests;
- (d) the syllabus for, and specimen forms for recording, the training, practice and periodical tests;
- (e) the manner in which instrument flight conditions and engine failure are to be simulated in the aircraft in flight;
- (f) the extent to which the training and testing is permitted in the course of flights for the purpose of public transport; and
- (g) the use to be made in the training and testing of equipment approved for the purpose by the Civil Aviation Authority of Macau.

PART D - AERODROME OPERATING MINIMA

(Paragraph 28)

Aerodrome operating minima for take-off, approach to landing and landing by public transport aircraft registered in Macau.

(1) In this paragraph:

"*approach to landing*" means that portion of the flight of the aircraft in which it is descending below a height of 1,000 feet above the decision height of the relevant minimum for landing;

"*approved*", in relation to the operations manual, means accepted by the Civil Aviation Authority of Macau after any additions or amendments required by the Civil Aviation Authority of Macau have been incorporated;

"*aerodrome operating minima*", in relation to the operation of an aircraft at an aerodrome, means the cloud ceiling and runway visual range for take-off and the decision height, runway visual range and visual reference for landing specified by the operator in or ascertainable by reference to the operations manual as being the minimum for the operation of that aircraft at that aerodrome;

"*cloud ceiling*", in relation to an aerodrome, means the vertical distance from the elevation of the aerodrome to the lowest part of any cloud visible from the aerodrome which is sufficient to obscure more than one-half of the sky so visible;

"*decision height*", in relation to the operation of an aircraft at an aerodrome, means the minimum height specified by the operator in or ascertainable by reference to the operations manual as being the minimum height to which an approach to landing can safely be made by that aircraft at that aerodrome without visual reference to the ground;

"*runway visual range*", in relation to a runway or landing strip, means the range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line;

"*specified*", in relation to an aircraft, means specified in or ascertainable by reference to the operations manual relating to that aircraft;

"*visibility*" means the ability, as expressed in units of distance, to see and identify prominent unlighted objects by day and prominent lighted objects by night; and, in the case of an aerodrome in Macau, the distance, if any, communicated to the commander of the aircraft by or on behalf of the person in charge of the aerodrome as being the visibility shall be taken as the visibility for the time being.

(2) In compliance with paragraph 24 (2) of the Regulation and paragraph (1) (c) of Part A of this Schedule, the operator of every aircraft to which this Schedule applies shall establish and include in the operations manual relating to the aircraft particulars of aerodrome operating minima appropriate to every aerodrome of intended departure or landing and every alternate aerodrome:

Provided that:

- (i) in respect of aerodromes to be used only on a flight which is not a scheduled journey or any part thereof it shall be sufficient to include in the operations manual, data and instructions by means of which the appropriate aerodrome operating minima can be calculated by the commander of the aircraft; and
 - (ii) in respect of aerodromes at which meteorological observations cannot be communicated to the commander of an aircraft in flight, it shall be sufficient to include in the approved operations manual, general directions to pilots concerning aerodrome operating minima for safe operation.
- (3) The aerodrome operating minima specified shall not, in respect of any aerodrome, be less favourable than any declared in respect of that aerodrome by the Civil Aviation Authority of Macau, unless the Civil Aviation Authority of Macau otherwise permits in writing.
- (4) In establishing aerodrome operating minima for the purposes of this Part the operator of the aircraft shall take into account the following matters:
- (a) the type and performance and handling characteristics of the aircraft and any relevant conditions in its Certificate of Airworthiness;
 - (b) the composition of its crew;
 - (c) the physical characteristics of the relevant aerodrome and its surroundings;
 - (d) the dimensions of the runways which may be selected for use;
 - (e) whether or not there are in use at the relevant aerodrome any aids, visual or otherwise, to assist aircraft in approach, landing, or take-off, being aids which the crew of the aircraft are trained and equipped to use; the nature of any such aids that are in use; and the procedures for approach, landing and take-off which may be adopted according to the existence or absence of such aids; and
 - (f) whether or not there is in use at the relevant aerodrome any communication facilities for passing meteorological observations to aircraft in flight,

and shall establish in relation to each runway which may be selected for use minimum weather conditions appropriate to each set of circumstances which can reasonably be expected.

- (5) With reference to paragraph 28 (3) of the Regulation, an aircraft shall not commence a flight at a time when:
- (a) the cloud ceiling or the runway visual range or visibility as appropriate, at the aerodrome of departure is less than the minimum respectively specified for take-off; or
 - (b) according to the information available to the commander of the aircraft it would not be able, without contravening paragraph (7) of this Part, commence or continue an approach to landing at the aerodrome of intended destination at the estimated time of arrival there and at any alternate aerodrome at any time at which according to a reasonable estimate the aircraft would arrive there.

(6) With reference to paragraph 28 (3) of the Regulation, an aircraft shall not:

(a) commence or continue an approach to landing at any aerodrome if the runway visual range or visibility, as appropriate, at that aerodrome established or determined as aforesaid, is at the time less than the relevant minimum for landing; or

(b) continue an approach to landing at an aerodrome by flying below the critical height of the relevant minimum for landing if from that height the approach to landing cannot be completed entirely by visual reference to the ground.

(7) If according to the information available an aircraft would as regards any flight be required by the Rules of the Air and Air Traffic Control to be flown in accordance with the Instrument Flight Rules at the aerodrome of intended landing, the commander of the aircraft shall select prior to take-off an alternate aerodrome unless no aerodrome suitable for that purpose is available.

PART E - MAINTENANCE AND ENGINEERING MANUAL

(Paragraph 24 (3))

1. Information and instructions relating to the following matters shall be included in the Maintenance and Engineering Manual referred to in paragraph 24 (3) of the Regulation. The Maintenance and Engineering Manual content, organization and detail can vary according to the complexity of the aircraft used, the size of the operator's fleet and the area of operation. However, in determining the acceptability of the manual, the operator must ensure that the manual contents meet the requirements of the Civil Aviation Authority of Macau and provide clear instructions, procedures and information covering, not exclusively:

(a) a statement designating an accountable manager;

(b) details of the maintenance organization including an organizational chart;

(c) statement of policy, commitment for standards and intended scope of work of the maintenance organization;

(d) personnel duties, responsibilities and authorities relating to maintenance, engineering, inspection and servicing;

(e) qualifications and competence of the manager(s) and of the employees;

(f) description and quantification of the means available for the organisation to exercise its duties and privileges;

(g) details of the maintenance system to be followed, including procedures for performing routine and non-routine maintenance inspections, alterations, repairs and servicing;

- (h) details of the various engineering tasks and levels of airworthiness intervention, including procedures for analyzing Service Bulletins, Airworthiness Directives and other similar documents, procedures for accomplishing modifications, repairs, alterations to wiring diagrams and manufacturers original designs, design of new parts and tools, and definition of the internal airworthiness requirements and working procedures;
- (i) clear definition of the liaisons with the Civil Aviation Authority of Macau, government agencies, international organizations and manufacturers;
- (j) airworthiness certification and inspection, standards and procedures for aircraft, parts and components;
- (k) details of reliability - quality control - program;
- (l) procedures for preparing the maintenance release, the circumstances under which this release is issued and the personnel required to sign it;
- (m) methods, techniques and practices for accomplishing preventive maintenance and alterations;
- (n) procedures to ensure that required maintenance or inspections are handled by appropriately trained, qualified and certified/licensed personnel;
- (o) methods used for designating critical items requiring inspection;
- (p) procedures to prevent personnel performing maintenance work on aircraft and also conducting required inspections of such work;
- (q) procedures to ensure that work interruptions do not adversely effect required inspections;
- (r) procedures to ensure that inspections are completed satisfactorily before aircraft are released to service;
- (s) procedures for refueling and defueling aircraft;
- (t) procedures for preventing or eliminating fuel contamination;
- (u) tire precaution procedures during refueling and defueling;
- (v) the responsibilities, authority and names of personnel who have been duly appointed by the Chief of Maintenance to conduct inspections;
- (w) methods for servicing and maintenance prescribed by, or which require prior approval of the Chief of Maintenance;

(1) *Age*

The applicant shall be not less than 18 years of age.

(2) *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a commercial pilot license - helicopters, in at least the following subjects:

Air law

(a) rules and regulations relevant to the holder of a commercial pilot license - helicopters; rules of the air; appropriate air traffic services practices and procedures;

Aircraft general knowledge

(b) principles of operation and functioning of helicopter powerplants, transmission (power - trains), systems and instruments;

(c) operating limitations of appropriate helicopters and powerplants; relevant operational information from the flight manual;

(d) use and serviceability checks of equipment and systems of appropriate helicopters;

(e) maintenance procedures for airframes, systems and powerplants of appropriate helicopters;

(f) effects of loading and mass distribution, including external loads, on helicopter handling, flight characteristics and performance; mass and balance calculations;

(g) use and practical application of take-off, landing and other performance data;

(h) pre-flight and en-route flight planning appropriate to operations under VFR; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; altimeter setting procedures;

Human performance and limitations

(i) human performance and limitations relevant to the commercial pilot - helicopters;

Meteorology

(j) interpretation and application of aeronautical meteorological reports, charts and forecasts; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;

(k) 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; hazardous weather avoidance;

Navigation

(l) air navigation, including the use of aeronautical charts, instruments and navigation aids; an understanding of the principles and characteristics of appropriate navigation systems; operation of airborne equipment;

Operation procedures

(m) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;

(n) appropriate precautionary and emergency procedures; settling with power, ground resonance, roll-over and other operating hazards;

(o) operational procedures for carriage of freight, including external loads; potential hazards associated with dangerous goods;

(p) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from helicopters;

Principles of flight

(q) principles of flight relating to helicopters;

Radiotelephony

(r) radiotelephony procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure.

(3) *Experience*

(a) the applicant shall have completed not less than 150 hours of flight time, or 100 hours if completed during a course of approved training, as a pilot of helicopters. The civil Aviation Authority of Macau shall determine whether experience as a pilot under instruction in a synthetic flight trainer, which it has approved, is acceptable as

part of the total flight time of 150 hours or 100 hours, as the case may be. Credit for such experience shall be limited to a maximum of 10 hours;

(b) the applicant shall have completed in helicopters not less than:

(i) 35 hours as pilot-in-command;

(ii) 10 hours of cross-country flight time as pilot-in-command including a cross-country flight in the course of which landings at two different points shall be made;

(iii) 10 hours of instrument instruction time of which not more than 5 hours may be instrument ground time; and

(iv) if the privileges of the license are to be exercised at night, 5 hours of night flight time including 5 take-offs and 5 landing patterns as pilot-in-command.

(c) when the applicant has flight time as a pilot of aircraft in other categories, the Civil Aviation Authority of Macau shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of proviso (a) can be reduced accordingly;

Flight instruction

(d) the applicant shall have received dual instruction in helicopters from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the commercial pilot:

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

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

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

(iv) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm;

(v) ground manoeuvring and run-ups; hovering; take-offs and landings - normal, out of wind and sloping ground; steep approaches;

(vi) take-offs and landings with minimum necessary power; maximum performance take-off and landing techniques; restricted site operations; quick stops;

- (vii) hovering out of ground effect; operations with external load, if applicable; flight at high altitude;
- (viii) basic flight manoeuvres and recovery from unusual attitudes by reference solely to basic flight instruments;
- (ix) cross-country flying using visual reference, dead-reckoning and radio navigation aids; diversion procedures;
- (x) abnormal and emergency procedures, including simulated helicopter equipment malfunctions, auto-rotative approach and landing; and
- (xi) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology.

(e) if the privileges of the license are to be exercised at night, the applicant shall have received dual instruction in helicopters in night flying, including take-offs, landings and navigation.

Note: The instrument experience specified in proviso (b) (iii) and proviso (d) (viii) and the night flying experience specified in proviso (b) (iv) and proviso (e) of this sub-paragraph do not entitle the holder of a commercial pilot license - helicopters to pilot helicopters under IFR.

(4) *Skill*

The applicant shall have demonstrated the ability to perform as pilot-in-command of a helicopter, the procedures and manoeuvres described in sub-paragraph (3) with a degree of competency appropriate to the privileges granted to the holder of a commercial pilot license - helicopters, and to:

- (a) operate the helicopter within its limitations;
- (b) complete all manoeuvres with smoothness and accuracy;
- (c) exercise good judgement and airmanship;
- (d) apply aeronautical knowledge; and
- (e) maintain control of the helicopter at all times in a manner such that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

(5) *Medical fitness*

The Civil Aviation Authority of Macau requires an applicant to satisfy the medical standards applicable to the granting or renewal of commercial pilots licenses specified in the Fourteenth Schedule of this Regulation.

Airline Transport Pilot License - Aeroplanes

13. The Civil Aviation Authority of Macau requires an applicant for an airline transport pilot license of aeroplanes in Macau to meet the following requirements in respect of age, knowledge, experience, skill and medical fitness:

(1) *Age*

The applicant shall be not less than 21 years of age.

(2) *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a commercial pilot license - aeroplanes, in at least the following subjects:

Air law

(a) rules and regulations relevant to the holder of a commercial pilot license - aeroplane; rules of the air; appropriate air traffic services practices and procedures;

Aircraft general knowledge

(b) general characteristics and limitations of electrical, hydraulic, pressurization and other aeroplane systems; flight control systems, including autopilot and stability augmentation;

(c) 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;

(d) operating procedures and limitations of appropriate aeroplanes; effects of atmospheric conditions on aeroplane performance;

(e) use and serviceability checks of equipment and systems of appropriate aeroplanes;

(f) flight instruments; compasses, turning and acceleration errors; gyroscopic instruments, operational limits and procession effects, practices and procedures in the event of malfunctions of various flight instruments;

(g) maintenance procedures for airframes, systems and powerplants of appropriate aeroplanes;

Flight performance and planning

- (h) effects of loading and mass distribution on aeroplane handling, flight characteristics and performance; mass and balance calculations;
- (i) use and practical application of take-off, landing and other performance data, including procedures for cruise control;
- (j) 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;

Human performance and limitations

- (k) human performance and limitations relevant to the commercial pilot - aeroplanes;

Meteorology

- (l) 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;
- (m) 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;
- (n) causes, recognition and effects of engine and airframe icing; frontal zone penetration procedures; hazardous weather avoidance;
- (o) practical high altitude meteorology, including interpretation and use of weather reports, charts and forecasts; jetstreams;

Navigation

- (p) air navigation, including the use of aeronautical charts, radio navigation aids and area navigation systems specified navigation systems; specified navigation requirements for long-range flights;
- (q) use, limitation and serviceability of avionics and instruments necessary for the control and navigation of aeroplanes;
- (r) use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids;
- (s) principles and characteristics of self-contained and external-referenced navigation systems; operation of airborne equipment;

Operational procedures

- (t) 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;
- (u) precautionary and emergency procedures; safety practices associated with flight under IFR;
- (v) operational procedures for carriage of freight and dangerous goods;
- (w) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aeroplanes;

Principles of flight

- (x) 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;

Radiotelephony

- (y) radiotelephony procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure.

(3) *Experience*

- (a) the applicant shall have completed not less than 1500 hours of flight time, as a pilot of aeroplanes. The Civil Aviation Authority of Macau shall determine whether experience as a pilot under instruction in a synthetic flight trainer, which it has approved, is acceptable as part of the total flight time of 1500 hours. Credit for such experience shall be limited to a maximum of 100 hours, of which not more than 25 hours shall have been acquired in a flight procedure trainer or a basic instrument flight trainer;
- (b) the applicant shall have completed in aeroplanes not less than:
 - (i) 250 hours, either as pilot-in-command, or made up by not less than 100 hours as pilot-in-command and the necessary additional flight time as co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command, provided that the method of supervision employed is acceptable to the Civil Aviation Authority of Macau;
 - (ii) 200 hours of cross-country flight time, of which not less than 100 hours shall be as pilot-in-command or as co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-

command, provided that the method of supervision employed is acceptable to the Civil Aviation Authority of Macau;

(iii) 75 hours of instrument time, of which not more than 30 hours may be instrument ground time; and

(iv) 100 hours of night flight as pilot-in-command or as co-pilot.

(c) when the applicant has flight time as a pilot of aircraft in other categories, the Civil Aviation Authority of Macau shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of proviso (a) can be reduced accordingly;

Flight instruction

(d) the applicant shall have received the dual flight instruction required for the issue of the commercial pilot license - aeroplanes as specified in paragraph 11 (3) of this Schedule for the flight instruction and paragraph 48 (2) (c) of this Schedule for the issue of the instrument rating - aeroplanes.

(4) *Skill*

(a) The applicant shall have demonstrated the ability to perform as pilot-in-command of a multi-engine aeroplane required to be operated with a co-pilot, the following procedures and manoeuvres:

(i) pre-flight procedures, including the preparation of the operational flight plan and filing of the air traffic services flight plan;

(ii) normal flight procedures and manoeuvres during all phases of flight;

(iii) procedures and manoeuvres for IFR operations under normal, abnormal and emergency conditions, including simulated engine failure, and covering at least the following:

- transition to instrument flight on take-off;
- standard instrument departures and arrivals;
- en-route IFR procedures and navigation;
- holding procedures;
- instrument approaches to specified minima;
- missed approach procedures; and

landings from instrument approaches.

(b) abnormal and emergency procedures and manoeuvres related to failures and malfunctions of equipment, such as powerplant, systems and airframe;

(c) procedures for crew incapacitation and crew co-ordination, including allocation of pilot tasks, crew co-operation and use of checklists; and

(d) the applicant shall have demonstrated the ability to perform the procedures and manoeuvres described in proviso (a) with a degree of competency appropriate to the privileges granted to the holder of an airline transport pilot license - aeroplanes, and to:

(i) operate the aeroplane within its limitations;

(ii) complete all manoeuvres with smoothness and accuracy;

(iii) exercise good judgement and airmanship;

(iv) apply aeronautical knowledge;

(v) maintain control of the aeroplane at all times in a manner such that the successful outcome of a procedure or manoeuvre is never in doubt;

(vi) understand and apply crew co-ordination and incapacitation procedures; and

(vii) communicate effectively with the other flight crew members.

(5) *Medical fitness*

The Civil Aviation Authority of Macau requires an applicant to satisfy the medical standards applicable to the granting or renewal of airline transport pilot licenses specified in the Fourteenth Schedule of this Regulation.

Airline Transport Pilot License - Helicopters

14. The Civil Aviation Authority of Macau requires an applicant for an airline transport pilot license of helicopters in Macau to meet the following requirements in respect of age, knowledge, experience, skill and medical fitness:

(1) *Age*

The applicant shall be not less than 21 years of age.

(2) *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of an airline transport pilot license - helicopters, in at least the following subjects:

Air law

(a) rules and regulations relevant to the holder of an airline transport pilot license - helicopters; rules of the air; appropriate air traffic services practices and procedures;

Aircraft general knowledge

(b) general characteristics and limitations of electrical, hydraulic, and other helicopter systems; flight control systems, including autopilot and stability augmentation;

(c) 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;

(d) operating procedures and limitations of appropriate helicopters; effects of atmospheric conditions on helicopter performance; relevant operational information from the flight manual;

(e) use and serviceability checks of equipment and systems of appropriate helicopters;

(f) 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;

(g) maintenance procedures for airframes, systems and powerplants of appropriate helicopters;

Flight performance and planning

(h) effects of loading and mass distribution, including external loads, on helicopter handling, flight characteristics and performance; mass and balance calculations;

(i) use and practical application of take-off, landing and other performance data, including procedures for cruise control;

(j) 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;

Human performance and limitations

- (k) human performance and limitations relevant to the airline transport pilot - helicopters;

Meteorology

- (l) 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;

- (m) 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;

- (n) cause, recognition and effects of engine, airframe and rotor icing; hazardous weather avoidance;

Navigation

- (o) air navigation, including the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for long-range flights;

- (p) use, limitation and serviceability of avionics and instruments necessary for the control and navigation of helicopters;

- (q) use, accuracy and reliability of navigation systems; identification of radio navigation aids;

- (r) principles and characteristics of self-contained and external-referenced navigation systems; operation of airborne equipment;

Operation procedures

- (s) interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;

- (t) precautionary and emergency procedure; settling with power, ground resonance, retreating blade stall, dynamics roll-over and other operating hazards; safety practices associated with flight under VFR;

- (u) operational procedures for carriage of freight, including external loads, and dangerous goods;

- (v) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from helicopters;

Principles of flight

- (w) principles of flight relating to helicopters;

Radiotelephony

- (x) radiotelephony procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure.

(3) *Experience*

- (a) the applicant shall have completed not less than 1000 hours of flight time as a pilot of helicopters;

- (b) the Civil Aviation Authority of Macau shall determine whether experience as a pilot under instruction in a synthetic flight trainer, which it has approved, is acceptable as part of the total flight time of 1000 hours. Credit for such experience shall be limited to a maximum of 100 hours, of which not more than 25 hours shall have been acquired in a flight procedure trainer or a basic instrument flight trainer;

- (c) the applicant shall have completed in helicopters not less than:

- (i) 250 hours, either as pilot-in-command, or made up by not less than 100 hours as pilot-in-command and the necessary additional flight time as co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command, provided that the method of supervision employed is acceptable to the Civil Aviation Authority of Macau;

- (ii) 200 hours of cross-country flight time, of which not less than 100 hours shall be as pilot-in-command or as co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command, provided that the method of supervision employed is acceptable to the Civil Aviation Authority of Macau;

- (iii) 30 hours of instrument time, of which not more than 10 hours may be instrument ground time; and

- (iv) 50 hours of night flight as pilot-in-command or as co-pilot.

- (d) when the applicant has flight time as a pilot of aircraft in other categories, the Civil Aviation Authority of Macau shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of proviso (a) can be reduced accordingly; and

Flight instruction

- (e) the applicant shall have received the flight instruction required for the issue of the commercial pilot license - helicopters as specified in paragraph 12 (3) (d).

Note: the instrument time specified in proviso (c) (iii) and the night flying time specified in proviso (c) (iv) of this sub-paragraph do not entitle the holder of the airline transport pilot license - helicopters to pilot helicopters under IFR.

(4) *Skill*

(a) the applicant shall have demonstrated the ability to perform, as pilot-in-command of a helicopter required to be operated with a co-pilot, the following procedures and manoeuvres:

(i) pre-flight procedures, including the preparation of the operation flight plan and filing of the air traffic service flight plans;

(ii) normal flight procedures and manoeuvres during all phase of flight;

(iii) abnormal and emergency procedures and manoeuvres related to failures and malfunctions of equipment, such as powerplant, systems and airframe; and

(iv) procedures for crew incapacitation and crew co-ordination including allocation of pilot tasks, crew co-operation and use of checklists.

(b) the applicant shall have demonstrated the ability to perform the procedures and manoeuvres described in proviso (a) with a degree of competency appropriate to the privileges granted to the holder of an airline transport pilot license - helicopters, and to:

(i) operate the helicopter within its limitations;

(ii) complete all manoeuvres with smoothness and accuracy;

(iii) exercise good judgement and airmanship;

(iv) apply aeronautical knowledge;

(v) maintain control of the helicopter at all times in a manner such that the successful outcome of a procedure or manoeuvre is never in doubt;

(vi) understand and apply crew co-ordination and incapacitation procedures; and

(vii) communicate effectively with the other flight crew members.

(5) *Medical fitness*

The Civil Aviation Authority of Macau requires an applicant to satisfy the medical standards applicable to the granting or renewal of airline transport pilot licenses specified in the Fourteenth Schedule of this Regulation.

Flight Navigator License

15. The Civil Aviation Authority of Macau requires an applicant for a flight navigator license in Macau to meet the following requirements in respect of age, knowledge, experience, skill and medical fitness:

(1) *Age*

The applicant shall be not less than 21 years of age.

(2) *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight navigator license, in at least the following subjects:

Air law

(a) rules and regulations relevant to the holder of a flight navigator license; appropriate air traffic services practices and procedures;

Flight performance and planning

(b) effects of loading and mass distribution on aircraft performance;

(c) use of take-off, landing and other performance data including procedures for cruise control;

(d) 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;

Human performance and limitations

(e) human performance and limitations relevant to the flight navigator;

Meteorology

(f) interpretation and practical 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;

(g) 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;

Navigation

- (h) dead-reckoning, pressure-pattern and celestial navigation procedures; the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for long-range flights;
- (i) use, limitation and serviceability of avionics and instruments necessary for the navigation of the aircraft;
- (j) use, accuracy and reliability of navigation systems used in departure, en-route and approach phases of flight; identification of radio navigation aids;
- (k) principles, characteristics and use of self-contained and external-referenced navigation systems; operation of airborne equipment;
- (l) the celestial sphere including the movement of heavenly bodies and their selection and identification for the purpose of observation and reduction of sights; calibration of sextants; the completion of navigation documentation;
- (m) definitions, units and formulae used in air navigation;

Operational procedures

- (n) interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes, abbreviations, and instrument procedure charts for departure, en-route, descent and approach;

Principles of flight

- (o) principles of flight; and

Radiotelephony

- (p) radiotelephony procedures and phraseology.

(3) *Experience*

- (a) the applicant shall have completed in the performance of the duties of a flight navigator, not less than 200 hours of flight time acceptable to the Civil Aviation Authority of Macau, in aircraft engaged in cross-country flights, including not less than 30 hours by night;
- (b) when the applicant has flight time as a pilot, the Civil Aviation Authority of Macau shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of proviso (a) can be reduced accordingly;

(c) the applicant shall produce evidence of having satisfactorily determined the aircraft's position in flight, and used that information to navigate the aircraft, as follows:

(i) by night - not less than 25 times by celestial observations; and

(ii) by day - not less than 25 times by celestial observations in conjunction with self-contained or external-referenced navigation systems.

(4) *Skill*

The applicant shall have demonstrated the ability to perform as flight navigator of an aircraft with a degree of competency appropriate to the privileges granted to the holder of a flight navigator license, and to:

(a) exercise good judgement and airmanship;

(b) apply aeronautical knowledge;

(c) perform all duties as part of an integrated crew; and

(d) communicate effectively with the other flight crew members.

(5) *Medical fitness*

The Civil Aviation Authority of Macau requires an applicant to satisfy the medical standards applicable to the granting or renewal of flight navigator licenses specified in the Fourteenth Schedule of this Regulation.

Flight Engineer License

16. The Civil Aviation Authority of Macau requires an applicant for a flight engineer license in Macau to meet the following requirements in respect of age, knowledge, experience, skill and medical fitness:

(1) *Age*

The applicant shall be not less than 21 years of age.

(2) *Knowledge*

(a) the applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight engineer license, in at least the following subjects:

Air law

- (i) rules and regulations relevant to the holder of a flight engineer license; rules and regulations governing the operation of civil aircraft pertinent to the duties of a flight engineer;

Aircraft general knowledge

- (ii) 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;
- (iii) principles of operation, handling procedures and operating limitations of aircraft powerplants; effects of atmospheric conditions on engine performance;
- (iv) airframes, flight controls, structures, wheel assemblies, brakes and anti-skid units, corrosion and fatigue life; identification of structural damage and defects;
- (v) ice and rain protection systems;
- (vi) pressurization and air-conditioning systems, oxygen systems;
- (vii) hydraulic and pneumatic systems;
- (viii) basic electrical theory, electric systems (AC and DC), aircraft wiring systems, bonding and screening;
- (ix) principles of operation of instruments, compasses, auto-pilots, radio communication equipment, radio and radar navigation aids, flight management systems, displays and avionics;
- (x) limitations of appropriate aircraft;
- (xi) fire protection, detection, suppression and extinguishing systems;
- (xii) use and serviceability checks of equipment and systems of appropriate aircraft;

Flight performance and planning

- (xiii) effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;
- (xiv) use and practical application of performance data including procedures for cruise control;

Human performance and limitations

- (xv) human performance and limitations relevant to the flight engineer;

Operation procedures

- (xvi) principles of maintenance, procedures for the maintenance of airworthiness, defect reporting, pre-flight inspections, precautionary procedures for fuelling and use of external power; installed equipment and cabin systems;

- (xvii) normal, abnormal and emergency procedures;

- (xviii) operational procedures for carriage of freight and dangerous goods;

Principles of flight

- (xix) fundamentals of aerodynamics; and

Radiotelephony

- (xx) radiotelephony procedures and phraseology.

(b) the applicant should have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight engineer license in at least the following subjects:

- (i) fundamentals of navigation; principles and operation self-contained systems; and

- (ii) operational aspects of meteorology.

(3) *Experience*

(a) the applicant shall have completed, under the supervision of a person accepted by the Civil Aviation Authority of Macau for that purpose, not less than 100 hours of flight time in the performance of the duties of a flight engineer. The Civil Aviation Authority of Macau shall determine whether experience as a flight engineer in a flight simulator, which it has approved, is acceptable as part of the total flight time of 100 hours. Credit for such experience shall be limited to a maximum of 50 hours.

(b) when the applicant has flight time as a pilot, the Civil Aviation Authority of Macau shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of proviso (a) can be reduced accordingly.

(c) the 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 Civil Aviation Authority of Macau for that purpose, in at least the following areas:

(i) *Normal procedures*

- pre-flight inspections;
- fuelling procedures, fuel management;
- inspection of maintenance documents;
- normal flight deck procedures during all phases of flight;
- crew co-ordination and procedures in case of crew incapacitation; and
- defect reporting.

(ii) *Abnormal and alternate (standby) procedures*

- recognition of abnormal functioning of aircraft systems; and
- use of abnormal and alternate (standby) procedures.

(iii) *Emergency procedures*

- recognition of emergency conditions; and
- use of appropriate emergency procedures.

(4) *Skill*

(a) the applicant shall have demonstrated the ability to perform as flight engineer of an aircraft, the duties and procedures described in sub-paragraph (3) (c) with a degree of competency appropriate to the privileges granted to the holder of a flight engineer license, 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 use of a synthetic flight trainer for performing any of the procedures required during the demonstration of skill described in this sub-paragraph shall be approved by the Civil Aviation Authority of Macau, which shall ensure that the synthetic flight trainer is appropriate to the task.

(5) *Medical fitness*

The Civil Aviation Authority of Macau requires an applicant to satisfy the medical standards applicable to the granting or renewal of flight engineer licenses specified in the Fourteenth Schedule of this Regulation.

Flight Radiotelephony Operator License (General or Restricted)

17. The Civil Aviation Authority of Macau requires an applicant for a flight radiotelephony operator license (general or restricted) in Macau to meet the following requirements in respect of age, knowledge, experience, skill and medical fitness:

(1) *Age*

The applicant shall not be less than 18 years of age.

(2) *Knowledge*

The applicant shall satisfy the Civil Aviation Authority of Macau as to his(her) knowledge of:

(a) the basic organisation of an aeronautical radiotelephony network system;

(b) characteristics of high frequency propagation and the use of frequency families;

(c) terms used in the aeronautical mobile service, procedure words and phrases, the spelling alphabet;

(d) the various communication codes and abbreviations used;

(e) the relevant aeronautical fixed service organisation associated with the local radiotelephony network area or areas, with particular emphasis on the need for rapid relay of messages to and from aircraft;

(f) ICAO radiotelephony operating procedures, including their application with particular reference to the handling of Distress, Urgency and Safety traffic;

(g) a comprehensive knowledge of the Chinese and English languages designated for the use in airground communications, and ability to speak such languages without accent or impediment which would adversely affect radio communication; and

(h) a general understanding of the air traffic services provided within Macau.

(3) *Experience*

The applicant shall have:

(a) satisfactorily completed an approved training course within the 12 month period immediately preceding the application, and have served satisfactorily under a qualified aeronautical station operator or flight radiotelephony operator, for not less than two months; or

(b) satisfactorily served under a qualified flight radiotelephony operator for not less than six months during the 12 months immediately preceding the application.

(4) *Skill*

(a) the applicant shall demonstrate, or have demonstrated, his competency in:

(i) the manipulation and operation of typical transmit/receive equipment and controls, including ancillary facilities, and radio direction finding apparatus in use;

(ii) the visual inspection and daily operational check of the radio equipment he uses in such detail as is necessary to detect faults which should be revealed in such inspection, and to correct such faults that do not require the use of special tools or instruments;

(iii) the transmission of telephony messages, including correct microphone technique, enunciation, and speech quality; and

(iv) the reception of telephony message and, where relevant, the ability to copy radio signals and messages directly on to a typewriter.

(b) if an extension of privileges to include operation of radiotelegraphy equipment is sought, the applicant shall demonstrate, or have demonstrated his competency in:

(i) the transmission and aural reception of International Morse Code in groups (letters, figures and signs of punctuation) at a speed of not less than 16 groups per minute and plain language at a speed of not less than 20 words per minute. Code groups shall average five characters, each figure or

punctuation mark counting as two characters, and plain language shall average five characters to the word. Each test shall be of not less than five minutes duration; and

(ii) the manipulation and adjustment of the operating controls of a typical aeronautical station's radiotelegraph apparatus.

(5) *Medical fitness*

The Civil Aviation Authority of Macau requires an applicant to satisfy the medical standards applicable to the granting or renewal of flight radiotelephony operator licenses specified in the Fourteenth Schedule of this Regulation.

Part B - Requirements for the Validity and Renewal of Licenses and Ratings

18. Flight crew licenses and ratings issued or validated in Macau by the Civil Aviation Authority of Macau will remain in force for a period specified therein but not exceeding the periods established in paragraph 3 of the Fourteenth Schedule of this Regulation regarding the frequency of the medical routine checks. Before the expiry of this period, an application for renewal shall be submitted to the Civil Aviation Authority of Macau if the holder wishes to continue to use the privileges of his(her) license or rating, and the license or rating may be renewed, provided the applicant:

(a) in the preceding period has exercised the privileges of his(her) license or rating in order to meet, at least, the minimum requirements regarding the recent experience specified in Part B of this Schedule;

(b) is not suffering from any disability likely to adversely affect his technical skill or judgement and has satisfactorily meet the requirements of the medical examinations in accordance with the standards, requirements and time periods specified in the Fourteenth Schedule to this Regulation; and

(c) do not pass the limit of 60 years of age.

19. In the process of revalidation of flight crew licenses and ratings issued or validated in Macau by the Civil Aviation Authority of Macau, the applicant shall take note of the following conditions:

(a) applicants should note that renewal of a license which has expired cannot be back-dated and consequently any exercise of privileges in the intervening period would be illegal;

(b) a license which has lapsed for a period less than the limit specified in paragraph 3 of the Fourteenth Schedule will only be renewed for a period not exceeding that limit from the date of application for renewal, but a renewal fee for the whole period is payable;

(c) it is essential that the application for renewal is received by the Civil Aviation Authority of Macau approximately one month prior to the date of expiry of the license; and

(d) a license which has lapsed for a period more than the limit specified in paragraph 3 of the Fourteenth Schedule will not be renewed without a number and type of examinations which the Civil Aviation Authority of Macau deems necessary and sufficient to ascertain the competency of the holder. The number and type of the examinations are dependent upon the nature of employment of the holder and the time lapsed since the license has expired.

20. The Civil Aviation Authority of Macau, having issued revalidated or validated a flight crew license or rating in Macau, shall, at any time, cancel, revoke, or restrain the privileges granted by that license, or by related ratings, unless the holder satisfactorily demonstrates continuous competency and meets the requirements for recent experience established by the Civil Aviation Authority of Macau provided that:

(a) the maintenance of competency of flight crew members, engaged in commercial air transport operations, may be satisfactorily established by demonstrations of skill during proficiency flight checks completed under the supervision of the Civil Aviation Authority of Macau or any other authorised person;

(b) maintenance of competency may be satisfactorily recorded in the operator's records, or in the flight crew member's personal log book or license; and

(c) flight crew members may, to the extent deemed feasible by the Civil Aviation Authority of Macau, demonstrate their continuing competency in synthetic flight trainers approved by the Civil Aviation Authority of Macau.

Requirements to Revalidate a Private Pilot License - Aeroplanes and Helicopters

21. The holder of a valid private pilot license (aeroplanes or helicopters) issued or validated in Macau may apply for his(her) revalidation to the Civil Aviation Authority of Macau and such revalidation may be granted if the following requirements are met:

(a) the applicant must demonstrate evidence of recently acquired flight experience appropriate to the qualifications held as part of the privileges of his(her) license. For the purpose of this type of license revalidation, recent experience shall be considered as a minimum of 6 hours of flight time within the preceding 12 months and 3 landings within the preceding 90 days from the date of the application;

(b) in the case where the applicant wishes to continue exercising the privileges of his(her) license in respect to night flying according to paragraph 9 (3) (e) or 10 (3) (f) of this Schedule, whichever is the applicable case, he(she) has to produce evidence of recent experience in the form of 5 landings at night to a full stop within the preceding 90 days of the application. These landings may count towards the requirements referred to in proviso (a).

(c) the applicant must submit to the Civil Aviation Authority of Macau a medical certificate in accordance with the terms and conditions specified in the Fourteenth Schedule of this Regulation. Renewal of the applicant's license is subject to the satisfaction of the medical requirements described in the Fourteenth Schedule of this Regulation;

(d) the applicant must pay the applicable fees in accordance with the specifications of the Twelfth Schedule of this Regulation; and

(e) in the case the applicant fails to comply with the requirements specified in this paragraph, the Civil Aviation Authority of Macau shall stamp the word “CANCELLED” in all non-revalidated qualifications.

22. Whenever a holder of a private pilot license (aeroplanes or helicopters) issued or validated in Macau by the Civil Aviation Authority of Macau, let the privileges of his(her) license to expiry and wishes to apply for the revalidation of the license, the applicant shall meet the following requirements:

(a) hold a valid medical certificate obtained in accordance with the terms and conditions specified in the Fourteenth Schedule to this Regulation;

(b) comply with the minimum recent experience required in paragraph 21 (a) of this Schedule and, if applicable, also with proviso (b) of the same paragraph;

(c) demonstrate that he(she) still has the aeronautical knowledge required for the issuing of such license. To fulfil this requirement, the candidate shall obtain from an authorised flight instructor, or approved flight school, an endorsement testifying that the candidate is complying with the requirements referred to in paragraph 9 (4) or 10 (4) of this Schedule, whichever is the applicable case, and has accomplished the minimum experience required in paragraph 21 (a) of this Schedule, and if applicable in proviso (b) of the same paragraph; and

(d) pay the applicable fees specified in the Twelfth Schedule of this Regulation.

Commercial Pilot License - Aeroplanes and Helicopters

23. The holder of a valid commercial pilot license (aeroplanes or helicopters) issued or validated in Macau may apply for his(her) revalidation to the Civil Aviation Authority of Macau and such revalidation may be granted if the following requirements are met:

(a) the applicant must demonstrate evidence of recently acquired flight experience appropriate to the qualifications held as part of the privileges of his(her) license. For the purpose of this type of license revalidation, recent experience shall be considered as a minimum of 6 hours of flight time within the preceding 6 months and 5 landings within the preceding 90 days from the date of the application;

(b) in the case where the applicant wishes to continue exercising the privileges of his(her) license in respect to night flying according to paragraph 11 (3) (e) or 12 (3) (e) of this Schedule, whichever is the applicable case, he(she) has to produce evidence of recent experience in the form of 5 landings at night to a full stop within the preceding 90 days of the application. These landings may count towards the requirements referred to in proviso (a).

(c) the applicant must submit to the Civil Aviation Authority of Macau a medical certificate in accordance with the terms and conditions specified in the Fourteenth Schedule of this Regulation. Renewal of the applicant's license is subject to the satisfaction of the medical requirements described in the Fourteenth Schedule of this Regulation;

(d) the applicant must pay the applicable fees in accordance with the specifications of the Twelfth Schedule of this Regulation; and

(e) in the case the applicant fails to comply with the requirements specified in this paragraph, the Civil Aviation Authority of Macau shall stamp the word “CANCELLED” in all non-revalidated qualifications.

24. Whenever a holder of a commercial pilot license (aeroplanes or helicopters) issued or validated in Macau by the Civil Aviation Authority of Macau, let the privileges of his(her) license to expiry and wishes to apply for the revalidation of the license, the applicant shall meet the following requirements:

(a) hold a valid medical certificate obtained in accordance with the terms and conditions specified in the Fourteenth Schedule to this Regulation;

(b) comply with the minimum recent experience required in paragraph 23 (a) of this Schedule and, if applicable, also with proviso (b) of the same paragraph;

(c) demonstrate that he(she) still has the aeronautical knowledge required for the issuing of such license. To fulfil this requirement, the candidate shall obtain from an authorised flight instructor, or approved flight school, an endorsement testifying that the candidate is complying with the requirements referred to in paragraph 11 (4) or 12 (4) of this Schedule, whichever is the applicable case, and has accomplished the minimum experience required in paragraph 23 (a) of this Schedule, and if applicable in proviso (b) of the same paragraph; and

(d) pay the applicable fees specified in the Twelfth Schedule of this Regulation.

Airline Transport Pilot License - Aeroplanes and Helicopters

25. The holder of a valid airline transport pilot license (aeroplanes or helicopters) issued or validated in Macau may apply for his(her) revalidation to the Civil Aviation Authority of Macau and such revalidation may be granted if the following requirements are met:

(a) in the case of an aeroplane license, the applicant must demonstrate evidence of recently acquired flight experience appropriate to the qualifications held as part of the privileges of his(her) license. For the purpose of this type of license revalidation, recent experience shall be considered as a minimum of 12 hours of flight time within the preceding 6 months and 6 hours of instrument flight time within the preceding 90 days from the date of the application;

(b) in the case of a helicopter license, the applicant must demonstrate evidence of recently acquired flight experience appropriate to the qualifications held as part of the privileges of his(her) license. For the purpose of this type of license revalidation, recent experience shall be considered as a minimum of 12 hours of flight time within the preceding 6 months and 10 landings within the preceding 90 days from the date of the application;

(c) in the case of a helicopter license and where the applicant wishes to continue exercising the privileges of his(her) license in respect to night flying according to paragraph 14 (3) (c) or of this Schedule, he(she) has to produce evidence of recent experience in the form of 5 landings at night to a full stop within the preceding 90 days of the application. These landings may count towards the requirements referred to in proviso (b);

(d) the applicant must submit to the Civil Aviation Authority of Macau a medical certificate in accordance with the terms and conditions specified in the Fourteenth Schedule of this Regulation. Renewal of the applicant's license is subject to the satisfaction of the medical requirements described in the Fourteenth Schedule of this Regulation;

(e) the applicant must pay the applicable fees in accordance with the specifications of the Twelfth Schedule of this Regulation; and

(f) in the case the applicant fails to comply with the requirements specified in this paragraph, the Civil Aviation Authority of Macau shall stamp the word "CANCELLED" in all non-revalidated qualifications.

26. Whenever a holder of an airline transport pilot license (aeroplanes or helicopters) issued or validated in Macau by the Civil Aviation Authority of Macau, let the privileges of his(her) license to expiry and wishes to apply for the revalidation of the license, the applicant shall meet the following requirements:

(a) hold a valid medical certificate obtained in accordance with the terms and conditions specified in the Fourteenth Schedule to this Regulation;

(b) comply with the minimum recent experience required in paragraph 25 (a) or (b) of this Schedule, whichever is the applicable case, and, if applicable, also with proviso (c) of the same paragraph;

(c) demonstrate that he(she) still has the aeronautical knowledge required for the issuing of such license. To fulfil this requirement, the candidate shall obtain from an authorised flight instructor, or approved flight school, an endorsement testifying that the candidate is complying with the requirements referred to in paragraph 13 (4) or 14 (4) and of this Schedule and has accomplished the minimum experience required in paragraph 25 (a) of this Schedule, and if applicable in proviso (b) of the same paragraph; and

(d) pay the applicable fees specified in the Twelfth Schedule of this Regulation.

Flight Navigator License

27. The holder of a valid flight navigator license issued or validated in Macau may apply for his(her) revalidation to the Civil Aviation Authority of Macau and such revalidation may be granted if the following requirements are met:

(a) the applicant must demonstrate evidence of recently acquired flight experience appropriate to the qualifications held as part of the privileges of his(her) license. For the purpose of this type of license revalidation, recent experience shall be considered as a minimum of 6 hours of flight time exercising the privileges of the license within the preceding 6 months from the date of the application;

(b) the applicant must submit to the Civil Aviation Authority of Macau a medical certificate in accordance with the terms and conditions specified in the Fourteenth Schedule of this Regulation. Renewal of the applicant's license is subject to the satisfaction of the medical requirements described in the Fourteenth Schedule of this Regulation;

(d) the applicant must pay the applicable fees in accordance with the specifications of the Twelfth Schedule of this Regulation; and

(e) in the case the applicant fails to comply with the requirements specified in this paragraph, the Civil Aviation Authority of Macau shall stamp the word "CANCELLED" in all non-revalidated qualifications.

28. Whenever a holder of a flight navigator license issued or validated in Macau by the Civil Aviation Authority of Macau, let the privileges of his(her) license to expiry and wishes to apply for the revalidation of the license, the applicant shall meet the following requirements:

(a) hold a valid medical certificate obtained in accordance with the terms and conditions specified in the Fourteenth Schedule to this Regulation;

(b) comply with the minimum recent experience required in paragraph 27 (a) of this Schedule;

(c) demonstrate that he(she) still has the aeronautical knowledge required for the issuing of such license. To fulfil this requirement, the candidate shall obtain from an authorised flight instructor, or approved flight school, an endorsement testifying that the candidate is complying with the requirements referred to in paragraph 15 (4) of this Schedule and has accomplished the minimum experience required in paragraph 27 (a) of this Schedule; and

(d) pay the applicable fees specified in the Twelfth Schedule of this Regulation.

Flight Engineer License

29. The holder of a valid flight engineer license issued or validated in Macau may apply for his(her) revalidation to the Civil Aviation Authority of Macau and such revalidation may be granted if the following requirements are met:

(a) the applicant must demonstrate evidence of recently acquired flight experience appropriate to the qualifications hold as part of the privileges of his(her) license. For the purpose of this type of license revalidation, recent experience shall be considered as a minimum of 6 hours of flight time exercising the privileges of the license within the preceding 6 months from the date of the application;

(b) the applicant must submit to the Civil Aviation Authority of Macau a medical certificate in accordance with the terms and conditions specified in the Fourteenth Schedule of this Regulation. Renewal of the applicant's license is subject to the satisfaction of the medical requirements described in the Fourteenth Schedule of this Regulation;

(c) the applicant must pay the applicable fees in accordance with the specifications of the Twelfth Schedule of this Regulation; and

(d) in the case the applicant fails to comply with the requirements specified in this paragraph, the Civil Aviation Authority of Macau shall stamp the word "CANCELLED" in all non-revalidated qualifications.

- (b) shall be so constructed that the record would be likely to be preserved in the event of an accident to the aeroplane;
- (c) shall be so located and installed in compliance with the requirements of the Civil Aviation Authority of Macau; and
- (d) shall have securely attached an automatically activated underwater locating device.

Scale Q.

If the maximum total weight authorised of the aeroplane exceeds 5,700 kg a door between the flight crew compartment and any adjacent compartment to which passengers have access, which door shall be fitted with a lock or bolt capable of being worked from the flight crew compartment.

Scale R.

(i) (a) In respect of aeroplanes having a maximum total weight authorised exceeding 5,700 kg., equipment sufficient to protect the eyes, nose and mouth of all members of the flight crew required to be carried by virtue of paragraph 18 for a period of not less than 15 minutes and, in addition, where the minimum flight crew required as aforesaid is more than one and a cabin attendant is not required to be carried by virtue of paragraph 18, portable equipment sufficient to protect the eyes, nose and mouth of one member of the flight crew for a period of not less than 15 minutes.

(b) In respect of aeroplanes having a maximum total weight authorised not exceeding 5,700 kg., the equipment specified in (i) (a) of this Scale except that in the case of such aeroplanes restricted by virtue of the operator's operations manual to fly at or below flight level 250 and capable of descending as specified at A hereunder, such equipment shall be sufficient to protect the eyes only.

(ii) (a) In respect of aeroplanes having a maximum total weight authorised exceeding 5,700 kg., portable equipment to protect the eyes, nose and mouth of all cabin attendants required to be carried by virtue of paragraph 18 for a period of not less than 15 minutes.

(b) In respect of aeroplanes having a maximum total weight authorised not exceeding 5,700 kg., the equipment specified in (ii) (a) of this Scale except that this requirement shall not apply to such aeroplanes restricted by virtue of the operator's operations manual to fly at or below flight level 250 and capable of descending as specified at A hereunder.

A. The aeroplane is capable of descending in accordance with the emergency descent procedure specified in the relevant flight manual and without flying below the minimum altitudes for safe flight specified in the operations manual relating to the aeroplane, to flight level 100 within 4 minutes and of continuing at or below that flight level to its place of intended destination or any other place at which a safe landing can be made.

Scale S.

- (i) A minimum of one portable survival radio equipment operating on VHF, and self-sufficient in power supply, capable of being operated away from the aeroplane by unskilled persons.
- (ii) Signalling devices.
- (iii) Life-saving equipment including means of sustaining life.

Scale T.

- (i) 1 survival beacon radio apparatus.
- (ii) Marine type pyrotechnical distress signals.
- (iii) For each 4 or proportion of 4 persons on board, 100 grams of glucose toffee tablets.
- (iv) For each 4 or proportion of 4 persons on board, 1 litre of fresh water in durable containers.
- (v) First aid equipment.
- (vi) For every 75 or proportion of 75 persons on board, 1 stove suitable for use with aircraft fuel.
- (vii) 1 cooking utensil, in which snow or ice can be melted.
- (viii) 2 snow shovels.
- (ix) 2 ice saws.
- (x) Single or multiple sleeping-bags, sufficient for the use of one-third of all persons on board.
- (xi) 1 arctic suit for each member of the crew of the aircraft.

Scale U.

A ground proximity warning system which shall be capable of providing automatically a timely and distinctive warning to the flight crew when the aeroplane is in potentially hazardous proximity to the earth's surface.

Scale V.

(i) If the aircraft may in accordance with its Certificate of Airworthiness carry more than 19 and less than 100 passengers, one portable battery-powered megaphone capable of conveying instructions to all persons in the passenger compartment and readily available for use by a member of the crew.

(ii) If the aircraft may in accordance with its Certificate of Airworthiness carry more than 99 and less than 200 passengers, two portable battery-powered megaphones together capable of conveying instructions to all persons in the passenger compartment and each readily available for use by a member of the crew.

(iii) If the aircraft may in accordance with its Certificate of Airworthiness carry more than 199 passengers, 3 portable battery-powered megaphones together capable of conveying instructions to all persons in the passenger compartment and each readily available for use by a member of the crew.

(iv) If the aeroplane may in accordance with its Certificate of Airworthiness carry more than 19 passengers:

(a) a public address system; and

(b) an interphone system of communication between members of the flight crew and the cabin attendants.

Scale W.

(i) 1 survival beacon radio apparatus.

(ii) Marine type pyrotechnical distress signals.

(iii) For each 4 or proportion of 4 persons on board, 100 grams of glucose toffee tablets.

(iv) For each 4 or proportion of 4 persons on board, 1 litre of fresh water in durable containers.

(v) First aid equipment.

Scale X.

Cosmic radiation detection equipment calibrated in millirems per hour and capable of indicating the action and alert levels of radiation dose rate:

Provided that an aircraft shall not be required to carry the said equipment if before take-off the equipment is found to be unserviceable and it is not reasonably practicable to repair or replace it at the aerodrome of departure and the radiation forecast available to the commander of the aircraft indicates that hazardous radiation conditions are unlikely to be encountered by the aircraft on its intended route or any planned diversion therefrom.

Scale Y.

If the speed limitations of the aeroplane are expressed in terms of mach number, a mach number indicator.

Scale Z.

(i) A flight data recorder capable of recording by reference to a time scale the following data:

- (a) indicated air speed;
- (b) indicated altitude;
- (c) vertical acceleration;
- (d) magnetic heading;
- (e) pitch attitude;
- (f) roll attitude;
- (g) radio transmission keying;
- (h) thrust of each engine;
- (i) position of each thrust reverser;
- (j) trailing edge flap or cockpit flap control position;
- (k) leading edge flap or cockpit flap control position;
- (l) ground spoiler/speedbrake selection;
- (m) outside air temperature or total air temperature; and
- (n) auto-pilot/auto-throttle/automatic flight control system mode and engagement status.

(ii) An approved 4 channel cockpit voice recorder capable of simultaneously recording the following information:

- (a) all communications spoken into any active microphone at the commander's normal flight station and all audio signals selected to the commander's headphones or loud speaker;

- (b) all communications spoken into any active microphone at the co-pilot's normal flight station and all audio signals selected to the co-pilot's headphones or loud speaker;
 - (c) all communications spoken into any active microphone at another flight crew station and all audio signals selected at that crew station; and
 - (d) all conversation within the cockpit.
- (iii) The flight data recorder and the cockpit voice recorder referred to above
 - (a) shall be capable of retaining the information recorded during at least the last half hour during their operation;
 - (b) shall be so constructed that the record would be likely to be preserved in the event of an accident to the aeroplane;
 - (c) shall be so located and installed in compliance with the requirements of the Civil Aviation Authority of Macau; and
 - (d) shall have securely attached an automatically activated underwater locating device.

Scale AA.

- (i) A flight data recorder which is capable of recording, by reference to a time scale, the following data:
 - (a) indicated air speed;
 - (b) indicated altitude;
 - (c) vertical acceleration;
 - (d) magnetic heading;
 - (e) pitch attitude;
 - (f) roll attitude;
 - (g) radio transmission keying;
 - (h) thrust of each engine;
 - (i) main rotor speed;

- (j) each hydraulic system (low pressure);
- (k) outside air temperature or total air temperature;
- (l) autopilot/auto-throttle/automatic flight control system mode and engagement status;
- (m) stability augmentation system engagement;
- (n) for helicopters with conventional control system: pilot input or control surface position of collective pitch, longitudinal cyclic pitch, lateral cyclic pitch and tail rotor pedal;
- (o) for helicopters with non-mechanical control system: pilot input and control surface position of collective pitch, longitudinal cyclic pitch, lateral cyclic pitch and tail rotor pedal;
- (p) main gearbox oil pressure;
- (q) main gearbox oil temperature;
- (r) yaw acceleration or yaw rate;
- (s) sling load force;
- (t) longitudinal acceleration;
- (u) lateral acceleration;
- (v) radio altitude;
- (w) glide path deviation;
- (x) localiser deviation;
- (y) master beacon passage;
- (z) landing gear or gear selector position;
- (za) cockpit master warning; and
- (zb) if the equipment provided in the helicopter is of such a nature as to enable these data to be recorded; NAV 1 and 2 frequency selection, DME 1 and 2 distance, latitude/longitude, ground speed and drift angle.

(ii) An approved 4 channel cockpit voice recorder capable of simultaneously recording the following information:

- (a) all communications spoken into any active microphone at the commander's normal flight station and all audio signals selected to the commander's headphones or loud speaker;
- (b) all communications spoken into any active microphone at the co-pilot's normal flight station and all audio signals selected to the co-pilot's headphones or loud speaker;
- (c) all communications spoken into any active microphone at another flight crew station, and all audio signals selected at that crew station; and
- (d) all conversation within the cockpit.

For helicopters not equipped with a flight data recorder, at least main rotor speed shall be recorded on one track of the cockpit voice recorder.

(iii) In respect of helicopters having a maximum total weight authorised not exceeding 7,000 kg, a 4 channel cockpit voice recorder specified in paragraph (ii).

(iv) In respect of helicopters having a maximum total weight authorised exceeding 7,000 kg, a 4 channel cockpit voice recorder specified in paragraph (ii) and a flight data recorder capable of recording, by reference to a time scale, the data specified in paragraph (i).

(v) The flight data recorder and the cockpit voice recorder referred to above

- (a) shall be capable of retaining the information recorded during at least the last 10 hours and half an hour respectively during their operation;
- (b) shall be so constructed that the record would be likely to be preserved in the event of an accident to the helicopter;
- (c) shall be so located and installed in compliance with the requirements of the Civil Aviation Authority of Macau; and
- (d) shall have securely attached an automatically activated underwater locating device.

Scale BB.

(i) An emergency lighting system to provide illumination in the passenger compartments sufficient to facilitate the evacuation of the aircraft notwithstanding the failure of the lighting systems specified in paragraph (ii) of Scale G.

(ii) An emergency lighting system to provide illumination outside the aircraft sufficient to facilitate the evacuation of the aircraft.

Scale CC.

- (i) A quick donning type of oxygen mask which will readily supply oxygen upon demand at the duty station of each flight crew member.
- (ii) A device to provide a positive warning to the pilot of any dangerous loss of pressurisation.

SIXTH SCHEDULE*(Paragraph 13)***RADIO EQUIPMENT TO BE CARRIED IN AIRCRAFT**

1. Every aircraft shall be provided, when flying in the circumstances specified in the first column of the Table set forth in paragraph 2, with the scales of equipment respectively indicated in that Table:

Provided that, if the aircraft is flying in a combination of such circumstances the scales of equipment shall not on that account be required to be duplicated.

2.

<i>Aircraft and Circumstances of Flight</i>	<i>Scale of Equipment Required</i>						
	A	B	C	D	E	F	G
(1) All aircraft within Macau:							
(a) when flying under Instrument Flight Rules within controlled air space	A	B					
(b) where required by Rules of the Air and Air Traffic Control to comply in whole or in part with Instrument Flight Rules in Visual Meteorological Conditions	A*	B*			E*		
(c) when flying within any airspace in respect of which special rules are made in relation to a particular aerodrome, so as to require two-way radiocommunication with that aerodrome	A*						

* Unless the appropriate air traffic control unit otherwise permits in relation to the particular flight and provided that the aircraft complies with any instructions which the air traffic control unit may give in the particular case.

Aircraft and Circumstances of Flight	Scale of Equipment Required						
	A	B	C	D	E	F	G
(d) when making an approach to landing at an aerodrome notified for the purpose of this sub-paragraph						F*	
(2) All aircraft within Macau when flying above flight level 100 within controlled airspace and in such other airspace as may be notified for the purpose of this sub-paragraph	A*	B*			E*		G*
(3) All aircraft registered in Macau:							
(a) when flying for the purpose of public transport under Instrument Flight Rules:							
(i) while making an approach to landing	A	B	C	D			
(ii) on all other occasions	A	B	C				
(b) over 2,300 kg maximum total weight authorised when flying for the purpose of public transport under Visual Flight Rules	A	B					
(c) not over 2,300 kg maximum total weight authorised when flying for the purpose of public transport under Visual Flight Rules:							
(i) over a route on which navigation is not effected solely by visual reference to landmarks	A	B					
(ii) over water, beyond gliding distance from any land	A						

3. The scales of radio equipment indicated in the foregoing Table shall be as follows:

Scale A.

Radio equipment capable of maintaining two-way communication with the appropriate aeronautical radio stations.

Scale B.

Radio equipment capable of enabling the aircraft to be navigated on the intended route including such equipment as may be prescribed.

Scale C.

Radio equipment capable of receiving from the appropriate aeronautical radiostations meteorological broadcasts relevant to the intended flight.

Scale D.

Radio equipment capable of receiving signals from one or more aeronautical radio stations on the surface to enable the aircraft to be guided to a point from which a visual landing can be made at the aerodrome at which the aircraft is to land.

Scale E.

Radio equipment capable of providing a continuous indication of the aircraft's distance from the appropriate aeronautical radio stations.

Scale F.

Radio equipment capable of enabling the aircraft to make an approach to landing using the Instrument Landing System.

Scale G.

Such type of radio equipment as may be notified as being capable of:

(a) replying to an interrogation from secondary surveillance radar units on the surface;
and

(b) being set in an aerodrome with such instructions as may be given to the aircraft by the appropriate air traffic control unit.

SEVENTH SCHEDULE

(Paragraph 15)

AIRCRAFT, ENGINE AND PROPELLER LOG BOOKS

1. Aircraft Log Book.

The following entries shall be included in the aircraft log book:

- (a) the name of the constructor, the type of the aircraft, the number assigned to it by the constructor and the date of the construction of the aircraft;
- (b) the nationality and registration marks of the aircraft;
- (c) the name and address of the operator of the aircraft;
- (d) particulars of the date and duration of each flight, or, if more than one flight was made on one day, the number of flights and total duration of flights on that day;
- (e) particulars of all maintenance work carried out on the aircraft or its equipment;
- (f) particulars of any defects occurring in the aircraft or in any equipment required to be carried therein by the Regulation, and of the action taken to rectify such defects including a reference to the relevant entries in the technical log required by paragraph 9 (7) and (8) of the Regulation;
- (g) particulars of any overhauls, repairs, replacements and modifications relating to the aircraft or any such equipment as aforesaid:

Provided that entries shall not be required to be made under sub-paragraphs (e), (f) and (g) in respect of any engine or variable pitch propeller.

2. Engine Log Book.

The following entries shall be included in the engine log book:

- (a) the name of the constructor, the type of the engine, the number assigned to it by the constructor and the date of the construction of the engine;
- (b) the nationality and registration marks of each aircraft in which the engine is fitted;
- (c) the name and address of the operator of each such aircraft;

- (d) particulars of the date and duration of each occasion on which the engine is run in flight, or, if the engine is run on more than one occasion on one day, the number of occasions and the total duration of the running of the engine on that day;
- (e) particulars of all maintenance work done on the engine;
- (f) particulars of any defects occurring in the engine, and of the rectification of such defects, including a reference to the relevant entries in the technical log required by paragraph 9 (7) and 9 (8) of the Regulation; and
- (g) particulars of all overhauls, repairs, replacements and modifications relating to the engine or any of its accessories.

3. Variable Pitch Propeller Log Book.

The following entries shall be included in the variable pitch propeller log book:

- (a) the name of the constructor, the type of the propeller, the number assigned to it by the constructor and the date of the construction of the propeller;
- (b) the nationality and registration marks of each aircraft, and the type and number of each engine, to which the propeller is fitted;
- (c) the name and address of the operator of each such aircraft;
- (d) particulars of the date and duration of each occasion on which the propeller is run in flight, or, if the propeller is run on more than one occasion on one day, the number of occasions and the total duration of the running of the propeller on that day;
- (e) particulars of all maintenance work done on the propeller;
- (f) particulars of any defects occurring in the propeller, and of the rectification of such defects, including a reference to the relevant entries in the technical log required by paragraph 9 (7) and 9 (8) of the Regulation;
- (g) particulars of any overhauls, repairs, replacements and modifications relating to the propeller.

EIGHTH SCHEDULE

(Paragraph 20)

LICENSES, RATINGS AND PRIVILEGES OF FLIGHT CREW MEMBERS

1. This Schedule establishes the various requirements, categories, ratings and privileges prescribed by the Civil Aviation Authority of Macau for granting, revalidating and using licenses

related to flight crew of aircraft in Macau. The Civil Aviation Authority of Macau may grant or revalidate a license to any person who acts or intends to act as a member of flight crew of aircraft in Macau provided that they apply for any of the following cases:

- (a) Student pilot's license (aeroplanes or helicopters);
- (b) Private pilot's license (aeroplanes);
- (c) Private pilot's license (helicopters);
- (d) Commercial pilot's license (aeroplanes);
- (e) Commercial pilot's license (helicopters);
- (f) Airline transport pilot's license (aeroplanes);
- (g) Airline transport pilot's license (helicopters);
- (h) Flight navigator's license;
- (i) Flight engineer's license; or
- (j) Flight radiotelephony operator's license (general or restricted).

2. (1) A person applying in Macau for the grant or renewal of any of the licenses described in paragraph 1 to this Schedule shall be required to undergo a number of examinations under the supervision of the Civil Aviation Authority of Macau to ascertain whether his age, knowledge, experience, skills, eventually health condition or any other individual characteristics conforms with the requirements specified in this Schedule, provided that:

- (a) an applicant who does not satisfy one or various of the requirements specified in this Schedule, whether in part or entirety, may, at the discretion of the Civil Aviation Authority of Macau, be accepted as eligible for the grant or renewal of any of the licenses mentioned in paragraph 1; and any license granted or renewed in accordance with this proviso may be made subject to such conditions and restrictions as the Civil Aviation Authority of Macau may consider appropriate in the particular case;
- (b) a person applying for the grant or renewal of any of the licenses specified in paragraph 1 of this Schedule shall meet the necessary medical requirements established in the Fourteenth Schedule to this Regulation;
- (c) an applicant must be able to read, write and converse in English and Chinese;
- (d) an applicant shall be employed by an organisation which operates or services Macau registered aircraft; and

(e) an applicant shall not be suffering from any disability likely to adversely affect his technical skill or judgement.

(2) A person applying in Macau for the grant or renewal of any of the licenses described in paragraph 1 to this Schedule may be required to undergo an interview with the Civil Aviation Authority of Macau to determine whether, in accordance with this Regulation, the applicant is a fit and proper person to hold a license.

3. (1) The grant or renewal in Macau of any of the licenses mentioned in paragraph 1 of this Schedule shall be carried out as follows:

(a) an applicant shall submit an application to the Civil Aviation Authority of Macau in accordance with the terms and procedures defined by the Civil Aviation Authority of Macau in this respect;

(b) an applicant shall be required to undergo medical examinations according to the terms, standards and time periods prescribed in the Fourteenth Schedule to this Regulation;

(c) an applicant shall be required to undergo the number and type of written or oral examinations which the Civil Aviation Authority of Macau deems necessary and sufficient to ascertain his knowledge on the various subjects related to the exercise of the privileges of the applicant's license. The written or oral examinations shall be performed as follows:

(i) take place at the time, in the place, with the means and in the way prescribed by the Civil Aviation Authority of Macau;

(ii) all the examinations are conducted in English by the Civil Aviation Authority of Macau. The Civil Aviation Authority of Macau may, on a discretionary basis, ascertain the knowledge and command of the applicant on the Chinese language;

(iii) the examinations are conducted and supervised by the Civil Aviation Authority of Macau. The Civil Aviation Authority of Macau may, on a discretionary basis, authorise a certified person or organisation to perform these duties;

(iv) candidates will be advised by the Civil Aviation Authority of Macau of the results of each examination on a pass or fail basis. A supplementary examination may be given in cases where the marks obtained are within a transitory range determined for each particular examination;

(v) each examination passed carries a permanent credit for all categories, groups or ratings to which it applies; and

(vi) if a candidate fails an examination, an advise shall be made for the period and additional training or practical experience required before being eligible to be re-examined in that subject.

(d) the applicant shall be required to undergo the number and type of practical examinations which the Civil Aviation Authority of Macau deems necessary and sufficient to ascertain his skills, knowledge, experience and competence on the various subjects related to the practical exercise of the privileges of the applicant's license. The practical examinations shall be performed as prescribed in proviso (c) of this paragraph; and

(e) the applicant shall be required to pay the applicable fees specified in the Twelfth Schedule to this Regulation.

(2) Based on the results and correct performance of the various requirements established in proviso (1) and when the Civil Aviation Authority of Macau is satisfied that the various license requirements specified in this Schedule have been met, a license may be issued or revalidated to the respective applicant.

4. The Civil Aviation Authority of Macau may grant any of the licenses described in paragraph 1 to this Schedule, or a certificate of validation, to an applicant who holds a valid similar license granted by other countries, provided that the applicant shall:

(a) satisfy the Civil Aviation Authority of Macau that he(she) complies with the requirements for grant of licenses specified in this Schedule and that the category of his license, his recent practical experience and the requirements observed for the initial grant of his license are compatible with this Regulation;

(b) at the discretion of the Civil Aviation Authority of Macau and under his supervision, the applicant may be required to undergo such examinations as deemed necessary to establish that he(she) is competent and eligible for the grant of a license in Macau;

(c) submit evidence that he(she) has had adequate recent experience for him(her) to understand the local procedures and practices necessary to exercise the privileges of his(her) license;

(d) submit evidence that he(she) is employed, or about to be employed, by a person or organisation who operates with, or perform services regarding, aircraft registered in Macau; and

(e) submit evidence that the license presented is an ICAO type of license.

5. The holder of a pilot license granted or revalidated in Macau by the Civil Aviation Authority of Macau in order to credit flight time for the purpose of demonstrate experience and comply with the requirements established by the Civil Aviation Authority of Macau, shall take note of the following conditions:

(a) a student pilot or the holder of a pilot license shall be entitled to be credited in full with all solo, dual instruction and pilot-in-command flight time towards the total flight time required for the initial issue of a pilot license or the issue of a higher grade of pilot license;

(b) the holder of a pilot license, when acting as co-pilot of an aircraft required to be operated with a co-pilot, shall be entitled to be credited with no more than 50 per cent of the

co-pilot flight time towards the total flight time required for a higher grade of pilot license; and

(c) the holder of a pilot license, when acting as co-pilot performing under the supervision of the pilot-in-command the functions and duties of a pilot-in-command, shall be entitled to be credited in full with this flight time towards the total flight time required for a higher grade of pilot license.

6. The Civil Aviation Authority of Macau requires that the use of a synthetic flight trainer for performing any manoeuvre required during the demonstration of skill for the issue or revalidation of a license or rating in Macau shall be previously approved by the Civil Aviation Authority of Macau. The synthetic flight trainer must be of a type and embody such technical specifications considered appropriate to the task.

7. The Civil Aviation Authority of Macau requires that holders of any of the licenses specified in paragraph 1 of this Schedule, shall not exercise the privileges of their licenses and related ratings at any time when they are aware of any decrease in their medical fitness which might render them unable to safely exercise these privileges.

Part A - Requirements for Granting a License

Student Pilot License

8. The Civil Aviation Authority of Macau requires an applicant for a student pilot license in Macau to meet the following requirements in respect of age and medical fitness:

(1) *Age*

The applicant shall not be less than 18 years of age.

(2) *Medical fitness*

The Civil Aviation Authority of Macau shall not permit a student pilot to fly unless he(she) satisfies the medical standards applicable to the private pilots licenses specified in the Fourteenth Schedule of this Regulation.

Private Pilot License - Aeroplanes

9. The Civil Aviation Authority of Macau requires an applicant for a private pilot license of aeroplanes in Macau to meet the following requirements in respect of age, knowledge, experience, skill and medical fitness:

(1) *Age*

The applicant shall not be less than 18 years of age.

(2) *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a private pilot license - aeroplanes, in at least the following subjects:

Air law

- (a) rules and regulations relevant to the holder of a private pilot license - aeroplanes; rules of the air; appropriate air traffic services practices and procedures;

Aircraft general knowledge

- (b) principles of operation of aeroplane powerplants, systems and instruments;
- (c) operating limitations of aeroplanes and powerplants; relevant operational information from the flight manual or other appropriate document;

Flight performance and planning

- (d) effects of loading and mass distribution on flight characteristics; mass and balance calculating;
- (e) use and practical application of take-off, landing and other performance data;
- (f) pre-flight and en-route flight planning appropriate to private operations under VFR; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; position reporting procedures; altimeter setting procedures; operations in areas of high-density traffic;

Human performance and limitations

- (g) human performance and limitations relevant to the private pilot - aeroplanes;

Meteorology

- (h) application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry;

Navigation

- (i) practical aspects of air navigation and dead-reckoning techniques; use aeronautical charts;

Operational procedures

- (j) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
- (k) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards;

Principles of flight

- (l) principles of flight relating to aeroplanes;

Radiotelephony

- (m) radiotelephony procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure.

(3) *Experience*

- (a) the applicant shall have completed not less than 40 hours of flight time as a pilot of aeroplanes. The Civil Aviation Authority of Macau shall determine whether experience as a pilot under instruction in a synthetic flight trainer, which must be approved, is acceptable as part of the total flight time of 40 hours. Credit for such experience shall be limited to a maximum of 5 hours;
- (b) when the applicant has flight time as a pilot of aircraft in other categories, the Civil Aviation Authority of Macau shall determine whether such experience is acceptable and, if so, the extend to which the flight time requirements specified in proviso (a) can be reduced accordingly;
- (c) the applicant shall have completed in aeroplanes not less than 10 hours of solo flight time under the supervision of an authorized flight instructor, including 5 hours of solo cross-country flight time with at least one cross-country flight totalling not less than 270 Km (150NM) in the course of which full-stop landings at two different aerodromes shall be made;

Flight instruction

- (d) the applicant shall have received dual instruction in aeroplanes from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the private pilot:
 - (i) pre-flight operations, including mass and balance determination, aeroplane inspection and servicing;
 - (ii) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;

- (iii) control of the aeroplane by external visual reference;
- (iv) flight at critically slow airspeeds; recognition of, and recovery from, incipient and full stalls;
- (v) flight at critically high airspeeds; recognition of, and recovery from, spiral dives;
- (vi) normal and cross-wind take-offs and landings;
- (vii) maximum performance (short field and obstacle clearance) take-offs; short-field landings;
- (viii) flight by reference solely to instruments, including the completion of a level 180° turn;
- (ix) cross-country flying using visual reference, dead-reckoning and, where available, radio navigation aids;
- (x) emergency operations, including simulated aeroplane equipment malfunctions; and
- (xi) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology.

(e) if the privileges of the license are to be exercised at night, the applicant shall have received dual instruction in aeroplanes in night flying, including take-offs, landings and navigation.

Note. - The instrument experience specified in proviso (d) (viii) and the night flying experience specified in proviso (e) do not entitle the holder of a private pilot license - aeroplanes to pilot aeroplanes under IFR.

(4) *Skills*

The applicant shall have demonstrated the ability to perform as pilot-in-command of an aeroplane, the procedures and manoeuvres required in sub-paragraph (3) for the flight instruction with a degree of competency appropriate to the privileges granted to the holder of a private pilot license - aeroplanes, and to:

- (a) operate the aeroplane within its limitations;
- (b) complete all manoeuvres with smoothness and accuracy;
- (c) exercise good judgement and airmanship;

(d) apply aeronautical knowledge; and

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

(5) *Medical fitness*

The Civil Aviation Authority of Macau requires an applicant to satisfy the medical standards applicable to the granting or renewal of private pilots licenses specified in the Fourteenth Schedule of this Regulation.

Note: the applicant shall meet the applicable additional medical requirements prescribed by the Civil Aviation Authority of Macau in the case of seeking an instrument rating.

Private Pilot License - Helicopters

10. The Civil Aviation Authority of Macau requires an applicant for a private pilot license of helicopters in Macau to meet the following requirements in respect of age, knowledge, experience, skill and medical fitness:

(1) *Age*

The applicant shall be not less than 18 years of age.

(2) *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a private pilot license - helicopters, in at least the following subjects:

Air law

(a) rules and regulations relevant to the holder of a private pilot license - helicopters; rules of the air; appropriate air traffic services practices and procedures;

Aircraft general knowledge

(b) principles of operation of helicopter powerplants, transmission (power - trains), systems and instruments;

(c) operating limitations of helicopters and powerplants; relevant operational information from the flight manual;

Flight performance and planning

(d) effects of loading and mass distribution on flight characteristics; mass and balance calculations;

(e) use and practical application of take-off, landing and other performance data;

(f) pre-flight and en-route flight planning appropriate to private operations under VFR; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; position reporting procedures; altimeter setting procedures; operations in areas of high-density traffic;

Human performance and limitations

(g) human performance and limitations relevant to the private pilot - helicopters;

Meteorology

(h) application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry;

Navigation

(i) practical aspects of air navigation and dead-reckoning techniques; use of aeronautical charts;

Operational procedures

(j) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;

(k) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather and wake turbulence; settling with power, ground resonance, roll-over and operating hazards;

Principles of flight

(l) principles of flight relating to helicopters;

(m) radiotelephony procedures and phraseology as applicable to VFR operations; action to be taken in case of communication failure.

(3) *Experience*

(a) the applicant shall have completed not less than 40 hours of flight time as pilot of helicopters. The Civil Aviation Authority of Macau shall determine whether experience as a pilot under instruction in a synthetic flight trainer, which it has approved, is acceptable as part of the total flight time of 40 hours. Credit for such experience shall be limited to a maximum of 5 hours;

(b) when the applicant has flight time as a pilot of aircraft in other categories, the Civil Aviation Authority of Macau shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of proviso (a) can be reduced accordingly;

(c) the applicant shall have completed in helicopters not less than 10 hours of solo flight time under the supervision of an authorized flight instructor, including 5 hours of solo cross-country flight totalling not less than 180Km (100NM) in the course of which landings at two different points shall be made;

Flight instruction

(d) the applicant shall have received not less than 20 hours of dual instruction time in helicopters from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the private pilot:

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

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

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

(iv) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm;

(v) ground manoeuvring and run-ups; hovering; take-offs and landings - normal, out of wind and sloping ground;

(vi) take-offs and landings with minimum necessary power; maximum performance take-off and landing techniques; restricted site operations; quick stops;

(vii) cross-country flying using visual reference, dead-reckoning and, where available, radio navigation aids, including a flight of at least one hour;

(viii) emergency operations, including simulated helicopter equipment malfunctions; autorotative approach and landing; and

(ix) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology.

(e) the applicant shall have received dual instrument flight instruction from an authorized flight instructor. The instructor shall ensure that the applicant has

(b) when the applicant has flight time as a pilot of aircraft in other categories, the Civil Aviation Authority of Macau shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of proviso (a) can be reduced accordingly;

(c) the applicant shall have completed in helicopters not less than 10 hours of solo flight time under the supervision of an authorized flight instructor, including 5 hours of solo cross-country flight totalling not less than 180Km (100NM) in the course of which landings at two different points shall be made;

Flight instruction

(d) the applicant shall have received not less than 20 hours of dual instruction time in helicopters from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the private pilot:

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

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

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

(iv) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm;

(v) ground manoeuvring and run-ups; hovering; take-offs and landings - normal, out of wind and sloping ground;

(vi) take-offs and landings with minimum necessary power; maximum performance take-off and landing techniques; restricted site operations; quick stops;

(vii) cross-country flying using visual reference, dead-reckoning and, where available, radio navigation aids, including a flight of at least one hour;

(viii) emergency operations, including simulated helicopter equipment malfunctions; autorotative approach and landing; and

(ix) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology.

(e) the applicant shall have received dual instrument flight instruction from an authorized flight instructor. The instructor shall ensure that the applicant has

operational experience in flight solely by reference to instruments, including the completion of a level 180° turn, in a suitably instrumented helicopter; and

(f) if the privileges of the license are to be exercised at night, the applicant shall have received dual instruction in helicopters in night flying, including take-offs, landings and navigation.

Note: The instrument experience specified in proviso (e) and the night flying experience specified in proviso (f) do not entitle the holder of a private pilot license - helicopter to pilot helicopters under IFR.

(4) *Skill*

The applicant shall have demonstrated the ability to perform as pilot-in-command of a helicopter, the procedures and manoeuvres required in sub-paragraph (3) for the flight instruction with a degree of competency appropriate to the privileges granted to the holder of a private pilot license - helicopters, and to:

- (a) operate the helicopter within its limitations;
- (b) complete all manoeuvres with smoothness and accuracy;
- (c) exercise good judgement and airmanship;
- (d) apply aeronautical knowledge; and
- (e) maintain control of the helicopter at all times in a manner such that the successful outcome of a procedure or manoeuvre is never seriously in doubt.

(5) *Medical fitness*

The Civil Aviation Authority of Macau requires an applicant to satisfy the medical standards applicable to the granting or renewal of private pilots licenses specified in the Fourteenth Schedule of this Regulation.

Note: the applicant shall meet the applicable additional medical requirements prescribed by the Civil Aviation Authority of Macau in the case of seeking an instrument rating.

Commercial Pilot License - Aeroplanes

11. The Civil Aviation Authority of Macau requires an applicant for a commercial pilot license of aeroplanes in Macau to meet the following requirements in respect of age, knowledge, experience, skill and medical fitness:

(1) *Age*

The applicant shall be not less than 18 years of age.

(2) *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a commercial pilot license - aeroplanes, in at least the following subjects:

Air law

- (a) rules and regulations relevant to the holder of a commercial pilot license - aeroplanes; rules of the air; appropriate air traffic services practices and procedures;

Aircraft general knowledge

- (b) principles of operation and functioning of aeroplane powerplants, systems and instruments;

- (c) operating limitations of appropriate aeroplanes and powerplants; relevant operational information from the flight manual or other appropriate document;

- (d) use and serviceability checks of equipment and systems of appropriate aeroplanes;

- (e) maintenance procedures for airframes, systems and powerplants of appropriate aeroplanes;

Flight performance and planning

- (f) effects of loading and mass distribution on aeroplane handling, flight characteristics and performance; mass and balance calculations;

- (g) use and practical application of take-off, landing and other performance data;

- (h) pre-flight and en-route flight planning appropriate to operations under VFR; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; altimeter setting procedures;

Human performance and limitations

- (i) human performance and limitations relevant to the commercial pilot - aeroplanes;

Meteorology

- (j) interpretation and application of aeronautical meteorological reports, charts and forecasts; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;

(k) 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; hazardous weather avoidance;

Navigation

(l) Air navigation, including the use of aeronautical charts, instruments and navigation aids; an understanding of the principles and characteristics of appropriate navigation systems; operation of airborne equipment;

Operational procedures

(m) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;

(n) appropriate precautionary and emergency procedures;

(o) operational procedures for carriage of freight; potential hazards associated with the carriage of dangerous goods;

(p) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aeroplanes;

Principles of flight

(q) principles of flight relating to aeroplanes;

Radiotelephony

(r) radiotelephony procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure.

(3) *Experience*

(a) the applicant shall have completed not less than 200 hours of flight time, or 150 hours if completed during a course of approved training, as a pilot of aeroplanes. The Civil Aviation Authority of Macau shall determine whether experience as a pilot under instruction in a synthetic flight trainer, which it has approved, is acceptable as part of the total flight time of 200 hours or 150 hours, as the case may be. Credit for such experience shall be limited to a maximum of 10 hours;

(b) the applicant shall have completed in aeroplanes not less than:

(i) 100 hours as pilot-in-command or, in the case of a course of approved training, 70 hours as pilot-in-command;

(ii) 20 hours of cross-country flight time as pilot-in-command including a cross-country flight totalling not less than 540 km (300NM) in the course of which full-stop landings at two different aerodromes shall be made;

(iii) 10 hours of instrument instruction time of which not more than 5 hours may be instrument ground time; and

(iv) if the privileges of the license are to be exercised at night, 5 hours of night flight time including 5 take-offs and 5 landings as pilot-in-command.

(c) when the applicant has flight time as a pilot of aircraft in other categories, the Civil Aviation Authority of Macau shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of proviso (a) can be reduced accordingly;

Flight instruction

(d) the applicant shall have received dual instruction in aeroplanes from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the commercial pilot:

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

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

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

(iv) flight at critically slow airspeed; spin avoidance recognition of, and recovery from, incipient and full stalls;

(v) flight at critically high airspeeds; recognition of, and recovery from, spiral dives;

(vi) normal and cross-wind take-offs and landings;

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

(viii) basic flight manoeuvres and recovery from unusual attitudes by reference solely to basic flight instruments;

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

(x) abnormal and emergency procedures and manoeuvres; and

(xi) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology.

(e) if the privileges of the license are to be exercised at night, the applicant shall have received dual instruction in aeroplanes in night flying, including take-offs, landings and navigation.

Note: the instrument experience specified in proviso (b) (iii) and proviso (d) (viii) and the night flying experience specified in proviso (b) (iv) and proviso (e) of this sub-paragraph do not entitle the holder of a commercial pilot license - aeroplanes to pilot aeroplanes under IFR.

(4) *Skill*

The applicant shall have demonstrated the ability to perform as pilot-in-command of an aeroplane, the procedures and manoeuvres described in sub-paragraph (3) for the flight instruction with a degree of competency appropriate to the privileges granted to the holder of a commercial pilot license - aeroplanes, and to:

(a) operate the aeroplane within its limitations;

(b) complete all manoeuvres with smoothness and accuracy;

(c) exercise good judgement and airmanship;

(d) apply aeronautical knowledge; and

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

(5) *Medical fitness*

The Civil Aviation Authority of Macau requires an applicant to satisfy the medical standards applicable to the granting or renewal of commercial pilots licenses specified in the Fourteenth Schedule of this Regulation.

Commercial Pilot License - Helicopters

12. The Civil Aviation Authority of Macau requires an applicant for a commercial pilot license of helicopters in Macau to meet the following requirements in respect of age, knowledge, experience, skill and medical fitness:

<i>Supply for</i>	<i>Duration</i>
(b) Cabin attendants	Whenever the cabin pressure altitude exceeds 10,000 ft and a portable supply for 15 minutes.
(c) 10% of passengers	Whenever the cabin pressure altitude exceeds 10,000 ft, but does not exceed 12,000 ft.
(d) 30% of passengers	Whenever the cabin pressure altitude exceeds 12,000 ft, but does not exceed 15,000 ft.
(e) All passengers	If the cabin pressure altitude exceeds 15,000 ft the duration shall be the period when the cabin pressure altitude exceeds 15,000 ft or 10 minutes, whichever is the greater.
(f) 2% of passengers or two passengers, whichever is the greater, being supply of first aid oxygen which must be available for simultaneous first aid treatment of 2% or two passengers wherever they are seated in the aircraft	Whenever after decompression, cabin pressure altitude exceeds 8,000 ft.

- A. The aircraft is capable, at the time when a failure to maintain cabin pressurisation occurs, of descending in accordance with the emergency descent procedure specified in the relevant flight manual and without flying below the minimum altitudes for safe flight specified in the operations manual relating to the aircraft, to flight level 120 within 5 minutes and of continuing at or below that flight level to its place of intended destination or any other place at which a safe landing can be made.

Scale L.

Equipment to prevent the impairment through ice formation of the functioning of the controls, means of propulsion, lifting surfaces, windows or equipment of the aircraft so as to endanger the safety of the aircraft.

Scale M.

Safety harness for every seat in use.

Scale N.

An intercommunication system for use by all members of the flight crew and including microphones, not of a hand-held type for use by the pilot and flight engineer (if any).

Scale O.

A radar set capable of giving warning to the pilot-in-command and co-pilot of the aircraft of the presence of cumulo-nimbus clouds and other potentially hazardous weather conditions.

Scale P.

(i) A flight data recorder which is capable of recording, by reference to a time scale the following data:

- (a) indicated air speed;
- (b) indicated altitude;
- (c) vertical acceleration;
- (d) magnetic heading;
- (e) pitch attitude;
- (f) roll attitude;
- (g) radio transmission keying;
- (h) thrust of each engine;
- (i) position of each thrust reverser;
- (j) trailing edge flap or cockpit flap control position;
- (k) leading edge flap or cockpit flap control position;
- (l) lateral acceleration or sideslip angle;
- (m) pitch trim position;
- (n) control column or pitch control surface position;
- (o) control wheel or lateral control surface position; and
- (p) rudder pedal or yaw control surface position.

(ii) In the case of an aeroplane for which the individual Certificate of Airworthiness is first issued (whether in Macau or elsewhere) a flight data recorder capable of recording by reference to a time scale the following data in addition to paragraph (i):

- (a) ground spoiler/speedbrake selection;
- (b) outside air temperature or total air temperature;
- (c) autopilot/autothrottle/automatic flight control system mode and engagement status.

(iii) In the case of an aeroplane for which the individual Certificate of Airworthiness is first issued (whether in Macau or elsewhere) a flight data recorder capable of recording by reference to a time scale the following data in addition to paragraphs (i) and (ii):

- (a) angle of attack;
- (b) longitudinal acceleration;
- (c) radio altitude;
- (d) glide path deviation;
- (e) localiser deviation;
- (f) marker beacon passage;
- (g) status of landing gear squat switch;
- (h) use of ground proximity warning system;
- (i) landing gear or gear selector position;
- (j) each hydraulic system (low pressure);
- (k) cockpit master warning;
- (l) for aeroplanes with mechanical control system:
 - (A) control column or pitch control surface position;
 - (B) control wheel or lateral control surface position;
 - (C) rudder pedal or yaw control surface position;
- (m) for aeroplanes with non-mechanical control system:
 - (A) control column and pitch control surface position;

- (B) control wheel and lateral control surface position;
- (C) rudder pedal and yaw control surface position; and
- (n) if the equipment provided in the aeroplane are of such a nature as to enable these data to be recorded:
 - (A) NAV 1 and 2 frequency selection;
 - (B) DME 1 and 2;
 - (C) latitude and longitude;
 - (D) ground speed;
 - (E) drift angle.
- (iv) An approved 4 channel cockpit voice recorder capable of simultaneously recording the following information:
 - (a) all communications spoken into any active microphone at the commander's normal flight station and all audio signals selected to the commander's headphones or loud speaker;
 - (b) all communications spoken into active microphone at the co-pilot's normal flight station and all audio signals selected to the co-pilot's headphones or loud speaker;
 - (c) all communications spoken into any active microphone at another flight crew station and all audio signals selected at that crew position; and
 - (d) all conversation within the cockpit.
- (v) In respect of aeroplanes having a maximum total weight authorised not exceeding 27,000 kg, a 4 channel cockpit voice recorder specified in paragraph (iv) and a flight data recorder capable of recording by reference to a time scale the data specified in paragraphs (i) and (ii).
- (vi) In respect of aeroplanes having a maximum total weight authorised exceeding 27,000 kg, a 4 channel cockpit voice recorder specified in paragraph (iv) and a flight data recorder capable of recording by reference to a time scale the data specified in paragraphs (i), (ii) and (iii).
- (vii) The flight data recorder and the cockpit voice recorder referred to above:
 - (a) shall be capable of retaining the information recorded during at least the last 25 hours and half an hour respectively during their operation;

80. (1) The provisions of the Twelfth Schedule shall have effect with respect to the fees to be charged in connection with the grant, validation, renewal, extension or variation of any certificate, license or other document (including an application for, or the issue of a copy of, any such document), or the undergoing of any examination, test, inspection or investigation or the grant of any permission or approval, required by, or for the purpose of, this Regulation or any regulations made thereunder.

(2) Upon an application being made in connection with which any fee is chargeable in accordance with sub-paragraph (1), the applicant shall be required, before the application is entertained, to pay the fee so chargeable. If after such payment has been made, this application is withdrawn by the applicant or otherwise ceases to have effect or is refused, the Civil Aviation Authority of Macau may in his discretion, refund all or part of such payment.

81. In so far as the exercise of any power or the performance of any duty of the Civil Aviation Authority of Macau under this Regulation may be required outside Macau where there is no representative of the Civil Aviation Authority of Macau competent to exercise such power or to perform such duty the Civil Aviation Authority of Macau may authorise in writing any person appearing to him to be qualified to do so or the holder for the time being of any office, to exercise such power or to perform such duty.

82. The Civil Aviation Authority of Macau may make regulations for prescribing anything which under this Regulation is to be prescribed; and the expression "*prescribe*" shall be constructed accordingly.

83. (1) If any provision of this Regulation or of any regulations made thereunder is contravened in relation to an aircraft, the operator of that aircraft and the commander thereof, if the operator or, as the case may be, the commander is not the person who contravened that provision shall (without prejudice to the liability of any other person under this Regulation for that contravention) be deemed for the purposes of the following provisions of this paragraph to have contravened that provision unless he proves that the contravention occurred without his consent or connivance and that he exercised all due diligence to prevent the contravention. Whenever penalties are due for the misuse or non-accomplishment of the provisions of this Regulation, these are published in the Thirteenth Schedule to this Regulation.

(2) If it is proved that an act or omission of any person which would otherwise have been a contravention by that person of a provision of this Regulation or of any regulations made thereunder was due to any cause not avoidable by the exercise of reasonable care by that person the act or omission shall be deemed not to be a contravention by that person of that provision.

(3) Where a person is charged with contravening a provision of this Regulation or any regulations made thereunder by reason of his having been a member of the flight crew of an aircraft on a flight for the purpose of public transport or aerial work the flight shall be treated (without prejudice to the liability of any other person under this Regulation) as not having been for that purpose if he proves that he neither knew nor had reason to know that the flight was for that purpose.

(4) If any person contravenes any provision of this Regulation, or a directive, procedure, requirement or any other type of regulation or circular issued by Civil Aviation Authority of Macau by the reason of implementing paragraph 89 of this Regulation, shall be liable on conviction to a fine. That fine is described the Thirteenth Schedule of this Regulation.

84. Except where the context otherwise requires, the provisions of this Regulation:

- (a) in so far as they apply (whether by express reference or otherwise) to Macau registered aircraft, shall apply to such aircraft wherever they may be;
- (b) in so far as they apply as aforesaid to other aircraft shall apply to such aircraft when they are within Macau;
- (c) in so far as they prohibit, require or regulate (whether by express reference or otherwise) the doing of anything by persons in, or by any of the crew of, any Macau registered aircraft, shall apply to such persons and crew, wherever they may be; and
- (d) in so far as they prohibit, require or regulate as aforesaid the doing of anything in relation to any Macau registered aircraft by other persons shall apply to them wherever they may be.

85. The Civil Aviation Authority of Macau may direct that such of the provisions of this Regulation and of any regulations made or having effect thereunder as may be specified in the direction shall have effect as if reference in those provisions to aircraft registered in Macau included references to the aircraft specified in the direction, being an aircraft not so registered but for the time being under the management of a person who, or of persons each of whom, is qualified to hold a legal or beneficial interest by way of ownership in an aircraft registered in Macau.

86. The Civil Aviation Authority of Macau may exempt from any of the provisions of this Regulation or any regulations made thereunder any aircraft or persons or classes of aircraft or persons, either absolutely or subject to such conditions as he thinks fit.

87. Subject to paragraphs 65 and 66, nothing in this Regulation or the regulations made thereunder shall confer any right to land in any place as against the owner of the land or other persons interested therein.

88. (1) Subject to this paragraph, every person who:

- (a) is the operator or the commander of a public transport aircraft registered in Macau;
- (b) carries on the business of designing, manufacturing, maintaining, repairing or overhauling such an aircraft, or any equipment or part thereof;
- (c) signs a certificate of maintenance review and release to service in respect of such an aircraft, part or equipment; or
- (d) is the person in charge of the Macau International Airport or the Macau Heliport, shall:

- (i) make a report to the Civil Aviation Authority of Macau of any reportable occurrence of which he knows and which is of such a description as may be prescribed; the report shall be made within such time, by such means, and shall contain such information as may be prescribed and it shall be presented in such form as the Civil Aviation Authority of Macau may in any particular case approve; and
 - (ii) make a report to the Civil Aviation Authority of Macau, within such time, by such means, and containing such information as the Civil Aviation Authority of Macau may specify in a notice in writing served upon him, being information which is in his possession or control and which relates to a reportable occurrence which has been reported by him or by another person to the Civil Aviation Authority of Macau in accordance with this paragraph.
 - (2) In this paragraph, "*reportable occurrence*" means:
 - (a) any incident relating to such an aircraft or any defect in or malfunctioning of such an aircraft or any part or equipment of such an aircraft, being an incident, malfunctioning or defect endangering, or which if not corrected would endanger the aircraft, its occupants or any other person;
 - (b) any defect in or malfunctioning of any facility on the ground used or intended to be used for purposes of or in connection with the operation of such an aircraft, being a defect or malfunctioning endangering, or which if not corrected would endanger such an aircraft or its occupants;
 - (c) any incident relating to a violation of any regulation or procedures of any country or territory in which such an aircraft operates:
- Provided that any accident notified to the Civil Aviation Authority of Macau shall not constitute a reportable occurrence for purposes of this paragraph.
- (3) Subject to sub-paragraph (1) (ii), nothing in this paragraph shall require a person to report any occurrence which he has reason to believe has been or will be reported by another person to the Civil Aviation Authority of Macau in accordance with this paragraph.
 - (4) A person shall not make any report under this paragraph if he knows or has reason to believe that the report is false in any particular.
 - (5) Without prejudice to paragraph 38 (2) and subject to paragraph 58, the operator of an aircraft shall, if he has reason to believe that a report has been or will be made in pursuance of this paragraph, preserve any data from a flight data recorder relevant to the reportable occurrence for 14 days from the date on which a report of that occurrence is made to the Civil Aviation Authority of Macau or for such longer period as the Civil Aviation Authority of Macau may in a particular case direct:

Provided that the record may be erased if the aircraft is outside Macau and it is not reasonably practicable to preserve the record until the aircraft reaches Macau.

89. Without prejudice to the contents of this Regulation, the Civil Aviation Authority of Macau whenever it thinks appropriate or necessary, shall notify the public in general and those involved in the aeronautical field in particular, with information regarding the approved procedures, requirements, directives, circulars or any other type of document or publication issued by the Civil Aviation Authority of Macau focusing on aeronautical matters related to the application of this Regulation for the purpose of enabling the provisions of this Regulation to be complied with.

FIRST SCHEDULE

(Paragraphs 2(5) and 4(6))

Part A - TABLE OF GENERAL CLASSIFICATION OF AIRCRAFT

Aircraft (Power - driven flying machines)	{	Aeroplane (Landplane)
		Aeroplane (Seaplane)
		Aeroplane (Amphibian)
		Helicopter (Landplane)
		Helicopter (Seaplane)
		Helicopter (Amphibian)

Part B - ORIGIN AND REGISTRATION MARKS OF AIRCRAFT REGISTERED IN MACAU

1. Until 19 December 1999, the mark of origin of the aircraft registered in Macau shall be the roman capital letters "CS", and the registration mark shall be a group of 3 capital letters in roman characters assigned by the Civil Aviation Authority of Macau on the registration of the aircraft. A hyphen shall be placed between the mark of origin and the registration mark.

2. The origin and registration marks shall be painted on the aircraft or shall be affixed thereto by any other means ensuring a similar degree of permanence in the following manner:

I. Position of Marks.

(a) All aircraft

(i) Wings: On aeroplanes, the marks shall appear once on the lower surface of the wing structure. They shall be located on the left half of the lower surface of the wing structure unless they extend across the whole of the lower surface of the wing structure. So far as possible the marks shall be located equidistant from the leading and trailing edges of the wings. The tops of the letters and numbers shall be towards the leading edge of the wing.

(ii) Fuselage (or equivalent structure) and vertical tail surface: On all aircraft the marks shall also be either on each side of the fuselage (or equivalent structure)

between the wings and the tail surfaces, or on the upper halves of the vertical tail surfaces. When located on a single vertical tail surface they shall be on both sides of the tail. When there is more than one vertical tail surface, the marks shall appear on the outboard sides of the outer surface.

(iii) If an aircraft does not possess parts corresponding to those mentioned in (i) and (ii) above the marks shall appear in a manner such that the aircraft can be identified readily.

II. Size of Marks.

(a) All aircraft

(i) Wings: The marks on the wings shall be of equal height and at least 50 cm in height.

(ii) Fuselage (or equivalent structure) or vertical tail surface: The marks on the fuselage (or equivalent structure) shall not interfere with the visible outlines of the fuselage (or equivalent structure). The marks on the vertical tail surfaces shall be such as to leave a margin of at least 5 cm along each side of the vertical tail surface. The letters and numerals constituting each group of marks shall be of equal height. The height of the marks shall be at least 30 cm: Provided that where owing to the structure of the aircraft a height of 30 cm is not reasonably practicable the height shall be the greatest height reasonably practicable in the circumstances, but not less than 15 cm.

(iii) Special cases: If an aircraft does not possess parts corresponding to those mentioned in sub-paragraphs (i) and (ii) above, the measurements of the marks shall be such that the aircraft can be identified readily.

III. Form, Width and Spacing of Marks.

(i) The letters shall be capital letters in roman characters without ornamentation. Numbers shall be arabic numbers without ornamentation.

(ii) The width of each character (except the letter I and the number 1) and the length of hyphens shall be two-thirds of the height of a character.

(iii) The characters and hyphens shall be formed by solid lines and shall be of a colour contrasting clearly with the background. The thickness of the lines shall be one-sixth of the height of a character.

(iv) Each character shall be separated from that which it immediately precedes or follows by a space equal to half the width of a character. A hyphen shall be regarded as a character for this purpose.

3. The origin and registration marks shall be displayed to the best advantage, taking into consideration the constructional features of the aircraft and shall always be kept clean and visible.

4. In addition to paragraphs 1 to 3, the origin and registration marks shall also be inscribed, together with the name and address of the registered owner of the aircraft, on a fire-proof metal plate affixed in a prominent position to the aircraft near the main entrance.

SECOND SCHEDULE

(Paragraphs 3 (1), 4 (9), 6 (1) and 50 (2))

A, B AND C CONDITIONS

The A Conditions, the B Conditions and the C Conditions referred to in paragraphs 3 (1), 4 (9), 6 (1) and 50 (2) of the Regulation are as follows:

A Conditions.

- (1) The aircraft shall be either an aircraft in respect of which a Certificate of Airworthiness or validation has previously been in force under the provisions of the Regulation, or an aircraft identical in design with an aircraft in respect of which such a certificate is or has been in force.
- (2) The aircraft shall fly only for the purpose of enabling it to:
- (a) qualify for the issue or renewal of a Certificate of Airworthiness or of the validation thereof or the approval of a modification of the aircraft, after an application has been made for such issue, renewal, validation or approval, as the case may be; or
 - (b) proceed to or from a place at which any inspection, test or weighing of the aircraft is to take place for a purpose referred to in sub-paragraph (a).
- (3) The aircraft and its engines shall be certified as fit for flight by the holder of a licence as an aircraft maintenance engineer entitled in accordance with the provisions of the Fourth Schedule so to certify, or by a person approved by the Civil Aviation Authority of Macau for the purpose of issuing certificates under this condition.
- (4) The aircraft shall carry the minimum flight crew specified in any Certificate of Airworthiness or validation which has previously been in force under the Regulation in respect of the aircraft, or is or has previously been in force in respect of any other aircraft of identical design.
- (5) The aircraft shall not carry any passenger or cargo except passengers performing duties in the aircraft in connection with the flight.
- (6) The aircraft shall not fly over any congested area of a city, town or settlement, except in accordance with procedures which have been approved by the Civil Aviation Authority of Macau in relation to that flight.

- (7) Without prejudice to paragraph 18 (2) of the Regulation the aircraft shall carry such flight crew as may be necessary to ensure the safety of the aircraft.

B Conditions.

- (1) The flight shall be made under the supervision of a person approved by the Civil Aviation Authority of Macau for the purposes of these Conditions, and subject to any additional conditions which may be specified in such approval.
- (2) If it is not registered in Macau or under the law of any country or territory referred to in paragraph 3 of the Regulation, the aircraft shall be marked in a manner approved by the Civil Aviation Authority of Macau for the purposes of these Conditions, and the provisions of paragraphs 13, 15, 19, 30, 35, 55, 56 and 57 of the Regulation shall be complied with in relation to the aircraft as if it was registered in Macau so far as such provisions are applicable to the aircraft in the circumstances.
- (3) The aircraft shall fly only for the purpose of:
- (a) experimenting with or testing the aircraft (including in particular its engines) and its equipment; or
 - (b) enabling the aircraft to qualify for the issue or validation of a Certificate of Airworthiness or the approval of a modification of the aircraft; or
 - (c) proceeding to or from a place at which any experiment, test, inspection or weighing of the aircraft is to take place for a purpose referred to in sub-paragraph (a) or (b).
- (4) The aircraft shall carry such flight crew as may be necessary to ensure the safety of the aircraft.
- (5) The aircraft shall not carry any cargo, or any person other than the flight crew except the following:
- (a) persons employed by the operator who carry out during the flight duties in connection with the purposes specified in paragraph (3);
 - (b) persons employed by manufacturers of component parts of the aircraft (including the engines) who carry out during the flight duties in connection with the purposes so specified;
 - (c) persons approved by the Civil Aviation Authority of Macau under paragraph 7 (10) of the Regulation as qualified to furnish reports for the purposes of the Regulation; and
 - (d) persons, other than those carried under the preceding provisions of this paragraph, who are carried in the aircraft in order to carry out a technical evaluation of the aircraft or its operation.
- (6) The aircraft shall not fly over any congested area of a city, town or settlement, except in accordance with procedures which have been approved by the Civil Aviation Authority of Macau in relation to that flight.

C Conditions.

- (1) The operator of the aircraft shall be the registered owner of the aircraft who shall be the holder of an aircraft dealer's certificate granted under this Regulation.
- (2) The aircraft shall fly only for the purpose of:
 - (a) testing the aircraft;
 - (b) demonstrating the aircraft with a view to the sale of that aircraft or other similar aircraft;
 - (c) proceeding to or from a place at which the aircraft is to be tested or demonstrated as aforesaid or overhauled, repaired or modified; or
 - (d) delivering the aircraft to a person who has agreed to buy or lease it.

THIRD SCHEDULE

(Paragraph 7)

CATEGORIES OF AIRCRAFT**1. Categories of Aircraft.**

- Transport Category (Passenger).
- General Purpose Category.
- Transport Category (Cargo).
- Aerial Work Category.
- Private Category.
- Special Category.

2. The purposes for which the aircraft may fly are as follows:

- Transport Category (Passenger): Any purpose.
- General Purpose Category: Any purpose.
- Transport Category (Cargo): Any purpose, other than the public transport of passengers.
- Aerial Work Category: Aerial Work other than public transport.

- Private Category: Any purpose other than public transport or aerial work.
- Special Category: Any other purpose specified in the Certificate of Airworthiness but not including the carriage of passengers unless expressly permitted.

FOURTH SCHEDULE

(Paragraph 11)

LICENSES, RATINGS AND PRIVILEGES FOR PERSONNEL OTHER THAN FLIGHT CREW MEMBERS

1. This Schedule establishes the various requirements, categories, ratings and privileges prescribed by the Civil Aviation Authority of Macau for granting, revalidating and using licenses related to personnel other than flight crew members in Macau. The Civil Aviation Authority of Macau may grant or revalidate a license to any person other than those attributed to flight crew members provided that they apply for one of the following cases:

- (a) Aircraft maintenance engineer's licenses (ICAO Type I or II);
- (b) Flight operations officer's licenses;
- (c) Aeronautical station operator's licenses; or
- (d) Air traffic controller's licenses.

2. (1) A person applying in Macau for the grant or renewal of any of the licenses described in paragraph 1 to this Schedule shall be required to undergo a number of examinations under the supervision of the Civil Aviation Authority of Macau to ascertain whether his age, knowledge, experience, skills, eventually health condition or any other individual characteristics conforms with the requirements specified in this Schedule, provided that:

(a) an applicant who does not satisfy one or various of the requirements specified in this Schedule, whether in part or entirety, may, at the discretion of the Civil Aviation Authority of Macau, be accepted as eligible for the grant or renewal of any of the licenses mentioned in paragraph 1; and any license granted or renewed in accordance with this proviso may be made subject to such conditions and restrictions as the Civil Aviation Authority of Macau may consider appropriate in the particular case;

(b) a person applying for the grant or renewal of an air traffic controller's license in Macau shall meet the necessary medical requirements established in the Fourteenth Schedule to this Regulation;

(c) an applicant must be able to read, write and converse in English and Chinese;

(d) an applicant shall be employed by an organisation which operates or services Macau registered aircraft; and

(e) an applicant shall not be suffering from any disability likely to adversely affect his technical skill or judgement.

(2) A person applying in Macau for the grant or renewal of any of the licenses described in paragraph 1 to this Schedule may be required to undergo an interview with the Civil Aviation Authority of Macau to determine whether, in accordance with this Regulation, the applicant is a fit and proper person to hold a license.

3. (1) The grant or renewal in Macau of any of the licenses mentioned in paragraph 1 of this Schedule shall be carried out as follows:

(a) an applicant shall submit an application to the Civil Aviation Authority of Macau in accordance with the terms and procedures defined by the Civil Aviation Authority of Macau in this respect;

(b) an applicant for the grant or renewal of an air traffic controller's license shall be required to undergo medical examinations according to the terms, standards and time periods prescribed in the Fourteenth Schedule to this Regulation;

(c) an applicant shall be required to undergo the number and type of written or oral examinations which the Civil Aviation Authority of Macau deems necessary and sufficient to ascertain his knowledge on the various subjects related to the exercise of the privileges of the applicant's license. The written or oral examinations shall be performed as follows:

(i) take place at the time, in the place, with the means and in the way prescribed by the Civil Aviation Authority of Macau;

(ii) all the examinations are conducted in English by the Civil Aviation Authority of Macau. The Civil Aviation Authority of Macau may, on a discretionary basis, ascertain the knowledge and command of the applicant on the Chinese language;

(iii) the examinations are conducted and supervised by the Civil Aviation Authority of Macau. The Civil Aviation Authority of Macau may, on a discretionary basis, authorise a certified person or organisation to perform these duties;

(iv) candidates will be advised by the Civil Aviation Authority of Macau of the results of each examination on a pass or fail basis. A supplementary examination may be given in cases where the marks obtained are within a transitory range determined for each particular examination;

(v) each examination passed carries a permanent credit for all categories, groups or ratings to which it applies; and

(vi) if a candidate fails an examination, an advise shall be made for the period and additional training or practical experience required before being eligible to be re-examined in that subject.

(d) the applicant shall be required to undergo the number and type of practical examinations which the Civil Aviation Authority of Macau deems necessary and sufficient to ascertain his skills, knowledge, experience and competence on the various subjects related to the practical exercise of the privileges of the applicant's license. The practical examinations shall be performed as prescribed in proviso (c) of this paragraph; and

(e) the applicant shall be required to pay the applicable fees specified in the Twelfth Schedule to this Regulation.

(2) Based on the results and correct performance of the various requirements established in proviso (1) and when the Civil Aviation Authority of Macau is satisfied that the various license requirements specified in this Schedule have been met, a license may be issued or revalidated to the respective applicant.

4. The Civil Aviation Authority of Macau may grant any of the licenses described in paragraph 1 to this Schedule or a certificate of validation to an applicant who holds a valid similar license granted by other countries, provided that the applicant shall:

(a) satisfy the Civil Aviation Authority of Macau that he(she) complies with the requirements for grant of licences specified in this Schedule and that the category of his license, his recent practical experience and the requirements observed for the initial grant of his license are compatible with this Regulation;

(b) at the discretion of the Civil Aviation Authority of Macau and under his supervision, the applicant may be required to undergo such examinations as deemed necessary to establish that he(she) is competent and eligible for the grant of a license in Macau;

(c) submit evidence that he(she) has had adequate recent experience for him(her) to understand the local procedures and practices necessary to exercise the privileges of his(her) license;

(d) submit evidence that he(she) is employed, or about to be employed, by a person or organisation who operates with, or perform services regarding, aircraft registered in Macau; and

(e) submit evidence that the license presented is an ICAO type of license.

Part A - Requirements for Granting a License

Aircraft Maintenance Engineer (ICAO Type II)

5. The Civil Aviation Authority of Macau requires an applicant for the grant or renewal of an aircraft maintenance engineer license (ICAO Type II) to meet the following requirements in respect of age, knowledge, experience and skill:

(1) *Age*

The applicant shall be not less than 18 years of age.

(2) *Knowledge*

The applicant shall satisfy the Civil Aviation Authority of Macau as to his(her) knowledge of:

(a) the regulations pertinent to the duties of an aircraft maintenance (ICAO Type II) license holder; and

(b) the assembly, functioning, inspection, servicing, maintenance and principles of construction whichever of the following are appropriate to the privileges to be granted:

- (i) aircraft in their entirety;
- (ii) airframes;
- (iii) aircraft powerplants including their accessories;
- (iv) aircraft systems including their components;
- (v) aircraft instruments; and
- (vi) aircraft avionics.

(3) *Experience*

The applicant shall have the following experience in the inspection, servicing and maintenance of aircraft or its components:

(a) for the issue of a license with privileges for signing a Maintenance Release, at least:

- (i) three years; or
- (ii) two years if the applicant has satisfactorily completed an approved training course which will provide an equivalent level of practical experience; and

(b) for the issue of a license with privileges restricted in accordance with a specific category, a period of time that will enable a level of competency equivalent to that required in (a) to be attained, provided that this is not less than:

(i) two years; or

(ii) such a period as the Civil Aviation Authority of Macau considers necessary to provide an equivalent level of practical experience to applicants who have satisfactorily completed an approved training course.

(4) *Skill*

The applicant shall have demonstrated the ability to perform those functions applicable to the privileges to be granted.

Aircraft Maintenance Engineer (ICAO Type I)

6. The Civil Aviation Authority of Macau requires an applicant for the grant or renewal of an aircraft maintenance engineer license (ICAO Type I) to meet the following requirements in respect of age, knowledge, experience and skill:

(1) *Age*

The applicant shall be not less than 21 years of age.

(2) *Knowledge*

The applicant shall satisfy the Civil Aviation Authority of Macau as to his(her) knowledge of:

(a) the regulations pertinent to the duties of an aircraft maintenance (ICAO Type I) license holder;

(b) the assembly, functioning, inspection, and principles of construction of whichever of the following are appropriate to the privileges to be granted:

(i) aircraft in their entirety;

(ii) airframes;

(iii) aircraft powerplants including their accessories;

(iv) aircraft systems including their components;

(v) aircraft instruments;

(vi) aircraft avionics; and

(c) methods and procedures for inspection and approval of the repair, overhaul and functional testing of whichever of the following are appropriate to the privileges to be granted:

(i) aircraft in their entirety;

(ii) airframes;

(iii) aircraft powerplants including their respective components accessories, instruments and items of equipment and installation thereof;

(iv) aircraft systems including their components;

(v) aircraft instruments;

(vi) aircraft avionics.

(3) *Experience*

The applicant shall have had the following experience in the inspection, overhaul, authorized and approved modification of aircraft or its parts:

(a) for the issue of a license with privileges for certifying the airworthiness of aircraft, at least:

(i) five years; or

(ii) three years if the applicant has satisfactorily completed an approved training course that will give an equivalent level of practical experience; and

(b) for the issue of a license with privileges restricted in accordance with a specific category, a period of time that will enable a level of competency equivalent to that given in (a) to be attained, provided that this is not less than:

(i) three years; or

(ii) such a period as the Civil Aviation Authority of Macau considers necessary to give an equivalent level of practical experience to applicants who have satisfactorily completed an approved training course.

Note: Appropriate experience gained as the holder of an ICAO Type II license may be taken into consideration when satisfying the experience requirements for the issue of a Type I license.

(4) *Skill*

The applicant shall have demonstrated the ability to perform those functions applicable to the privileges to be granted.

(Paragraph 34)

Flight Operations Officers

7. The Civil Aviation Authority of Macau requires an applicant for the grant or renewal of a flight operations officer license to meet the following requirements in respect of age, knowledge, experience and skill:

(1) *Age*

Applicants shall be not less than 21 years of age.

(2) *Knowledge*

Applicants must satisfy the Civil Aviation Authority of Macau - at a level appropriate to the privileges to be granted - as to his knowledge of:

- (a) ATS flight planning and operational flight planning, including centre-of-gravity computations; fuel consumption and endurance, choice of alternate aerodromes;
- (b) the use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
- (c) rules and regulations relevant to air transportation;
- (d) air traffic services practices and procedures relevant to the duties of a flight operations officer
- (e) aeronautical meteorology;
- (f) use and limitations of altimeters, particularly with respect to barometric settings;
- (g) principles of air navigation with particular reference to instrument flight operation;
- (h) techniques for maintaining a flight watch;

- (i) procedures for communicating with aircraft and relevant ground stations.

(3) *Experience*

(a) The applicant shall, during the three years immediately preceding the date of his application, have completed two years' service in any one or in any combination of the capacities specified in (i) to (v) inclusive, provided that in any combination of experience the period served in any one of these capacities shall not be less than one year:

- (i) a pilot member of the crew in air transportation;
- (ii) a flight navigator in air transportation; or
- (iii) a meteorologist in an organization dispatching aircraft; or
- (iv) an air traffic controller; or
- (v) a technical supervisor of flight operations officers or air transportation flight operations systems; or

(b) The applicant shall have served as an assistant in the dispatching of air transport for not less than one year within the two years immediately preceding the date of his application; or

(c) The applicant shall have satisfactorily completed an approved training course.

(4) *Skills*

The applicant shall have demonstrated his ability to:

(a) make an accurate and operationally acceptable weather analysis from a series of daily weather maps and weather reports and of weather conditions prevailing in the general neighbourhood of a specific air route and to forecast weather trends pertinent to air transportation with particular reference to designated terminals;

(b) determine optimal flight paths; and

(c) provide operating supervision and all other assistance to flights in adverse conditions appropriate to the duties of the holder of a flight operations officer license.

(Paragraph 36)

8. The Civil Aviation Authority of Macau requires an applicant for the grant or renewal of an aeronautical station operator's license to meet the following requirements in respect of age, knowledge, experience and skill:

(1) *Age*

The applicant shall not be less than 18 years of age.

(2) *Knowledge*

The applicant shall satisfy the Civil Aviation Authority of Macau as to his knowledge of:

- (a) the basic organization of an aeronautical radiotelephony network system;
- (b) characteristics of high frequency propagation and the use of frequency families;
- (c) terms used in the aeronautical mobile service, procedure words and phrases, the spelling alphabet;
- (d) the various communication codes and abbreviations used;
- (e) the relevant aeronautical fixed service organization associated with the local radiotelephony network area or areas, with particular emphasis on the need for rapid relay of messages to and from aircraft;
- (f) ICAO radiotelephony operating procedures, including their application with particular reference to the handling of Distress, Urgency and Safety traffic;
- (g) without prejudice of what has been specified in paragraph 2 (c) of this Schedule, the applicant has to demonstrate a comprehensive knowledge of the chinese and english languages designated for use in airground communications, and ability to speak such languages without accent or impediment which would adversely affect radio communication; and
- (h) a general understanding of the air traffic services provided within Macau.

(3) *Experience*

The applicant shall have:

- (a) satisfactorily completed an approved training course within the 12 month period immediately preceding application, and have served satisfactorily under a qualified aeronautical station operator for not less than two months; or

(b) satisfactorily served under a qualified aeronautical station operator for not less than six months during the 12 months immediately preceding application.

(4) *Skill*

The applicant shall demonstrate, or have demonstrated, his competency in:

(a) the manipulation and operation of typical transmit/ receive equipment and controls, including ancillary facilities, and radio direction finding apparatus in use;

(b) the visual inspection and daily operational check of the radio equipment he uses in such detail as is necessary to detect faults which should be revealed in such inspection, and to correct such faults that do not require the use of special tools or instruments;

(c) the transmission of telephony messages, including correct microphone technique, enunciation, and speech quality;

(d) the reception of telephony messages and, where relevant, the ability to copy radio signals and messages directly on to a typewriter.

If an extension of privileges to include operation of radiotelegraphy equipment is sought, the applicant shall demonstrate, or have demonstrated his competency in:

(e) the transmission and aural reception of International Morse Code in groups (letters, figures and signs of punctuation) at a speed of not less than 16 groups per minute and plain language at a speed of not less than 20 words per minute. Code groups shall average five characters, each figure or punctuation mark counting as two characters, and plain language shall average five characters to the word. Each test shall be of not less than five minutes' duration; and

(f) the manipulation and adjustment of the operating controls of a typical aeronautical station's radiotelegraph apparatus.

(Paragraph 62, 63(1))

Air Traffic Controllers

9. The Civil Aviation Authority of Macau requires an applicant for the grant or renewal of an air traffic controller license to meet the following requirements in respect of age, knowledge, experience, skill and medical fitness and also the requirements for the controller rating set out in paragraph 17 of this Schedule.

(1) *Age*

The applicant shall be not less than 21 years of age.

(2) *Knowledge*

The applicant shall satisfy the Civil Aviation Authority of Macau as to his knowledge of:

- (a) without prejudice of what has been specified in paragraph 2 (c) of this Schedule, the applicant has to demonstrate a comprehensive knowledge of the Chinese and English languages for use in air traffic control and ability to speak such languages without accent or impediment which would adversely affect radio communication;
- (b) the rules of the air as set out in relevant ICAO publications;
- (c) the air traffic control practices and procedures as set out in relevant ICAO publications, with particular reference to those required under the IFR;
- (d) pertinent sections of ICAO publications relating to communication facilities and procedures including radiotelephony phraseologies and procedures;
- (e) the principles of air navigation including the use of altimeters;
- (f) pertinent types of aids to air navigation including visual aids, their use and limitations;
- (g) synoptic charts, weather reports and forecasts to the extent required for an appreciation thereof;
- (h) the performance of aircraft of different types, in so far as it affects air traffic control operations; and
- (i) basics of radar equipments, their use and limitations.

(3) *Experience*

The applicant shall have:

- (a) recently completed not less than 12 months of satisfactory service as pilot or flight navigator; or
- (b) completed not less than nine months of satisfactory service engaged in actual control of air traffic under the supervision of an appropriately rated air traffic controller; or
- (c) satisfactorily completed an approved training course and not less than three months of satisfactory service engaged in the actual control of air traffic under the supervision of an appropriately rated air traffic controller.

(4) *Medical fitness*

The applicant shall have established his medical fitness on the basis of compliance with the requirements outlined in the Fourteenth Schedule of this Regulation.

Part B - Requirements for the Validity and Renewal of Licenses

Aircraft Maintenance Engineer (ICAO Type I and II)

10. Aircraft maintenance engineer's licences and ratings will remain in force for a period specified therein but not exceeding 24 months from the date of issue. Before the expiry of this period, an application for renewal shall be submitted to the Civil Aviation Authority of Macau, and the license may be renewed provided the applicant:

(a) in the preceding 24 months has exercised, for at least six months, the privileges of his license or been engaged on comparable work; and

(b) is not suffering from any disability likely to adversely affect his technical skill or judgement.

11. In the process of revalidation of an aircraft maintenance engineer's license by the Civil Aviation Authority of Macau, the following requirements must be taken into consideration:

(a) engineers should note that renewal of a license which has expired cannot be back-dated and consequently any certifications made in the intervening period would be illegal;

(b) a license which has lapsed for less than 24 months will only be renewed for a period not exceeding 24 months from the date of application for renewal, but a renewal fee for 24 months is payable;

(c) it is essential that the application for renewal is received by the Civil Aviation Authority of Macau approximately one month prior to the date of expiry of the license; and

(d) a license which has lapsed for more than 24 months will not be renewed without examination to determine the competency of the holder. The extent of examination is dependent upon the nature of employment of the holder since the license has expired.

Flight Operations Officers

12. Flight operations officer licenses issued by the Civil Aviation Authority of Macau may be, in principle, revalidated for a periods not longer than 24 months. If the license holder applies for revalidation, the Civil Aviation Authority of Macau has to be satisfied that the holder has exercised the appropriate privileges of the license for not less than 6 months and has at least dispatched 12 air transport flights in the last 90 days, as a minimum requirement.

Aeronautical Station Operators

13. Aeronautical station operators' licenses issued by the Civil Aviation Authority of Macau may be, in principle, revalidated for periods not longer than 24 months. If the license holder applies for revalidation, the Civil Aviation Authority of Macau has to be satisfied that the holder has exercised the appropriate privileges of the license for not less than 6 months and has at least performed 70 hours of service as an aeronautical station operator's officer in the last 12 months preceding the expiry date of the license, as a minimum requirement.

Air Traffic Controllers

14. The period of validity of an air traffic control licence is the same of the correspondent medical fitness certificate. This means that the license automatically expires when the medical fitness certificate expires. If the license holder applies for revalidation, the Civil Aviation Authority of Macau has to be satisfied that the holder has exercised the appropriate privileges of the license in accordance with paragraphs 62, 63 and 65 of this Regulation and meets the requirements specified in the Fourteenth Schedule of this Regulation.

Part C - Licenses Ratings and Categories

15. Extension on any of the licenses specified in paragraph 1 of this Schedule to include other categories of licences or additional ratings within a license, may be granted by the Civil Aviation Authority of Macau provided the applicant has had the required practical experience and has passed the prescribed examinations or other requirements prescribed by the Civil Aviation Authority of Macau for the grant of a license in the specific category or rating.

Aircraft Maintenance Engineers (ICAO Type I and II)

16. (1) The Civil Aviation Authority of Macau requires that one or various of the following category ratings shall be included in an aircraft maintenance engineer's license issued in Macau, whichever is the case:

- (a) Category A (Aircraft);
- (b) Category C (Engines);
- (c) Category E (Electrical Installations);
- (d) Category I (Instrument Installations); or
- (e) Category R (Radio Systems).

(2) The limitations of each license are specified by a rating which is entered on the license document and states the applicable group, type or series of aircraft or system.

Normally licences will be granted with a rating for specific types of aircraft, engines or systems. A group rating may be granted to include all aircraft, engines or systems included in a group specified herein or a series rating may be granted limiting the license to certain aircraft or engine series or system. All such limitations will be endorsed in the license.

(3) In order that all the license privileges are exercised correctly, license holders must ensure that they are aware of all pertinent and current information regarding the airworthiness of the particular aircraft, engine or system on which maintenance or other work will be undertaken. The groups allocated to each of the categories specified in proviso (1) to this paragraph are:

(i) Category A

Group 1 - Metal, stressed skin and unpressurised aircraft, with fixed undercarriage and without power operated hydraulic or pneumatic systems.

Group 2 - Unpressurised aircraft not exceeding 5,700 kg MTWA but having power operated hydraulic or pneumatic systems or retractable undercarriage.

Group 3 - Unpressurised aircraft exceeding 5,700 kg MTWA and having power operated hydraulic or pneumatic systems or retractable undercarriage. Non-complex pressurised aircraft not exceeding 5,700 kg MTWA.

Group 4 - Turbine-powered and/or complex pressurised aircraft.

Group 5 - Other categories of aircraft of timber or tubular construction, fabric or plywood covered.

Group 6 - Rotorcraft.

Group 7 - Fibre reinforced plastic aircraft.

Group 8 - Airships.

Provided that:

(A) Group or Series ratings may be granted in respect of aircraft in Group 1, 2 or 5.

(B) Series ratings may be granted in respect of aircraft in Group 3, 4, 6, 7 or 8.

(C) Requirements for Groups 7 and 8 are available on request from the Civil Aviation Authority of Macau.

(ii) Category C

Group 1 - Piston engines of 500 b.h.p or less aeroplanes.

Group 2 - Piston engines installed in rotorcraft.

Group 3 - Piston engines over 500 b.h.p installed in aeroplanes.

Group 4 - Turbo-jet and turbo-fan powerplants aeroplanes.

Group 5 - Turbine powerplants installed in rotorcraft.

Group 6 - Turbo-propeller powerplants.

Group 7 - Propfan powerplants.

Provided that:

(A) Group or Series ratings may be granted in respect of engines in Group 1 or 2.

(B) Series ratings may be granted in respect of engines in Group 3, 4, 5, 6 or 7.

(C) Requirements for Group 7 are available on request from the Civil Aviation Authority of Macau.

(iii) Category E

Group 1 - Unpressurised aircraft or non-complex rotorcraft. Non-complex pressurised aircraft not exceeding 5,700 kg MTWA.

Group 2 - Complex pressurised aircraft and/or turbo-propeller aircraft. Complex rotorcraft.

Group 3 - Turbo-jet, turbo-fan and propfan aircraft.

Provided that:

(A) Group or Series ratings may be granted in respect of aircraft on Group 1 or 2.

(B) Series ratings may be granted in respect of aircraft in Group 3.

(iv) Category I

Group 1 - Unpressurised aircraft or non-complex rotorcraft. Non-complex pressurised aircraft not exceeding 5,700 kg MTWA.

Group 2 - Complex pressurised aircraft and/or turbo-propeller aircraft. Complex rotorcraft.

Group 3 - Turbo-jet, turbo-fan and propfan aircraft.

Provided that:

(A) Group or Series ratings may be granted in respect of aircraft in Group 1 or 2.

(B) Series ratings may be granted in respect of aircraft in Group 3.

(v) Category R

Group 1 - Communication systems, including HF, VHF, Selcal and Satcom systems and emergency locator transmitters.

Group 2 - Audio systems, including intercommunication, audio amplifiers and distribution networks, passenger cabin address and entertainment equipment and cockpit voice recorders.

Group 3 - Navigation systems, including ADF, VOR, localiser, glideslope and marker systems.

Group 4 - FM and radio hyperbolic navigation systems, including Doppler, Loran and Omega/VLF systems.

Group 5 - Primary radar systems, including weather radar and radio altimeter systems.

Group 6 - Secondary radar systems, including DME and ATC transponder systems.

Note: MTWA means "maximum total weight authorised" as defined in this Regulation.

(4) The syllabus approved by the Civil Aviation Authority of Macau applicable for each one of the groups and categories which are the object of this paragraph, shall be specified separately as part of the airworthiness requirements of Macau.

(Paragraph 63(2))

17. The Civil Aviation Authority of Macau requires that the following rating may be included in an air traffic controller's license issued in Macau (other than a student air traffic controller's license) granted under paragraph 63 of the Regulation and, subject to the provisions of this Regulation and of the license:

(a) Aerodrome Control Rating

18. The Civil Aviation Authority of Macau requires an air traffic controller license holder in Macau to be granted the rating mentioned in proviso (a) has to satisfy the Civil Aviation Authority of Macau to the following requirements in respect of knowledge, experience and skill:

(1) *Knowledge*

The applicant shall satisfy the Civil Aviation Authority of Macau as to his(her) knowledge of:

(a) Local rules of the Macau International Airport;

(b) air navigation facilities within a circular area of a radius of 25 NM, measured from the centre of the aerodrome;

(c) identifying abbreviations and other pertinent data regarding meteorological reports and of effects of significant local weather characteristics, on and around the aerodrome;

(d) characteristics of local air traffic;

(e) coordination procedures between the aerodrome control unit and the various air traffic services units, as appropriate; for local terrain and prominent landmarks;

(f) local procedures for the making and use of runway visual range observations, as appropriate; and

(g) local procedures for alerting of the various emergency services.

(2) *Experience*

The applicant shall have:

(a) satisfactorily completed an approved training course, and have served satisfactorily under a rated aerodrome controller for not less than one month within the 12 month period immediately preceding application; or

(b) in the case where no approved training course is undertaken, the period of service under a rated aerodrome controller shall not be less than six months within the 12 month period immediately preceding application; or

(c) in the case of applicants already holding an air traffic controller license with an approach or area control rating entered thereon the period of service under a rated aerodrome controller shall not be less than one month.

(3) *Skill*

The applicant shall have demonstrated his ability to perform those functions applicable to the privileges to be granted.

19. The aerodrome control rating regarding the air traffic controller's licenses issued by the Civil Aviation Authority of Macau shall become invalid when an air traffic controller has ceased to exercise the privileges of the rating for a period of six months. A rating shall remain invalid until the controller's ability to exercise the privileges of the rating has been re-established.

Part D - Privileges of the licenses holders

Aircraft Maintenance Engineers (Type I and II)

20. An aircraft maintenance engineer licensed in Macau, has, subject to the conditions of his license, the privilege of issuing certificates as follows:

(1) Aircraft Maintenance Engineers - Category A (Aircraft).

In relation to aircraft (not including engines):

(a) certificates of maintenance review in accordance with the maintenance schedules approved under this Regulation,

(b) certificates of release to service in respect of inspections, repairs, replacements and modifications so approved; and

(c) certificates of fitness of aircraft for flight under the "A Conditions" set out in the Second Schedule.

(2) Aircraft Maintenance Engineers - Category C (Engines).

In relation to engines:

(a) certificates of maintenance review in accordance with the maintenance schedules approved under this Regulation;

(b) certificates of release to service in respect of inspections, repairs, replacements and modifications so approved; and

(c) certificates of fitness of aircraft engines for flight under the "A Conditions" set out in the Second Schedule.

(3) Aircraft Maintenance Engineers - Category E (Electrical Installations).

In relation to electrical installations:

(a) certificates of maintenance review in accordance with the maintenance schedules approved under this Regulation; and

(b) certificates of release to service in respect of inspections, repairs, replacements and modifications so approved.

(4) Aircraft Maintenance Engineers - Category I (Instrument Installations).

In relation to instrument installations:

(a) certificates of maintenance review in accordance with the maintenance schedules approved under this Regulation, and

(b) certificates of release to service in respect of inspections, repairs, replacements and modifications so approved.

(5) Aircraft Maintenance Engineers - Category R (Radio Systems).

In relation to aircraft radio stations:

(a) certificates of maintenance review in accordance with the maintenance schedules approved under this Regulation; and

(b) certificates of release to service in respect of inspections, repairs, replacements and modifications so approved.

21. The privileges of the holder of an aircraft maintenance license shall only be exercised:

(a) in respect of such aircraft as are entered on the license in their entirety either specifically or under broad categories; or

(b) in respect of such airframes and powerplants and aircraft systems or components as are entered on the license either specifically or under broad categories; and/or

(c) in respect of such aircraft avionic systems or components as are entered on the license either specifically or under broad categories; and

(d) provided that the holder has become familiar with all pertinent and current information relating to the maintenance and airworthiness of the particular type of aircraft for which the holder is signing a certificate of release to service or such airframe, powerplant, aircraft component, aircraft system and aircraft avionic system or component which the holder is certifying as being airworthy.

Flight Operations Officer

22. The privileges of the holder of a flight operations officer license shall be to serve in that capacity with responsibility for any area in respect of which he can exercise his duties and satisfy the Civil Aviation Authority of Macau regarding the requirements for the grant or maintenance of the license.

Aeronautical Station Operator

23. The privileges of the holder of an aeronautical station operator license shall be to act as an operator in an aeronautical station provided that he has familiarized himself with all pertinent and current information regarding the types of equipment and operating procedures used at that aeronautical station. Where the knowledge and skill of the applicant has also been established in respect of radiotelegraphy, the Civil Aviation Authority of Macau shall endorse the license for the operation of radiotelegraphy equipment. The holder of a license with such endorsement may operate radiotelegraphy as well as radiotelephony equipment in an aeronautical station.

Air Traffic Controllers

24. The privileges of the holder of an air traffic controller's license with the inclusion of the respective aerodrome control rating issued by the Civil Aviation Authority of Macau shall have the effect of entitling the holder of the license, to provide air traffic control service at the Macau International Airport (but not with any type of radar equipment for which a radar control rating is required) for any aircraft on the manoeuvring area or apron of the Macau International Airport or which is flying in the vicinity of this aerodrome traffic zone by visual reference to the surface.

FIFTH SCHEDULE

(Paragraphs 10(2) and 12(2))

AIRCRAFT EQUIPMENT

1. Every aircraft registered in Macau shall be provided, when flying in circumstances specified in the first column of the Table set forth in paragraph 4, with adequate equipment, and for the purpose of this paragraph the expression "*adequate equipment*" shall mean the scales of equipment respectively indicated in that Table:

Provided that, if the aircraft is flying in a combination of such circumstances the scales of equipment shall not on that account be required to be duplicated.

2. The equipment carried in an aircraft as being necessary for the airworthiness of the aircraft shall be taken into account in determining whether this Schedule is complied with in respect of that aircraft.

3. The following items of equipment shall not be required to be of a type approved by the Civil Aviation Authority of Macau:

- (i) The equipment referred to in Scale A (ii).
- (ii) First Aid Equipment and Handbook referred to in Scale B.
- (iii) Time pieces referred to in Scale F.
- (iv) Torches referred to in Scales G, H and J.
- (v) Whistles referred to in Scale H.
- (vi) Sea anchors referred to in Scales I and J.
- (vii) Equipment for mooring, anchoring or manoeuvring aircraft on the water referred to in Scale I.
- (viii) Paddles referred to in Scale J.
- (ix) Food and water referred to in Scales J, T and W.
- (x) Rocket signals referred to in Scale I.
- (xi) Stoves, cooking utensils, snow shovels, ice saws, sleeping bags and arctic suits referred to in Scale T.
- (xii) First Aid Equipment referred to in Scales J, T and W.
- (xiii) Megaphones referred to in scale V.

4.

TABLE

Aircraft and circumstances of flight	Scale of equipment required
(1) Aircraft flying for purpose other than public transport:	
(a) when flying at night	A, C and D
(b) when flying under Instrument Flight Rules:	
(i) outside controlled airspace	A and D
(ii) within controlled airspace	A, E with E (iv) duplicated and F

Aircraft and circumstances of flight	Scale of equipment required
(c) when carrying out aerobatic manoeuvres	A and M
(d) on all other flights	A
(2) Aircraft flying for the purpose of public transport:	
(a) when flying under Instrument Flight Rules:	
(i) in the case of aircraft of which the maximum total weight authorised exceeds 1,150 kg.	A, B, E with E (iv) duplicated and F
(ii) in the case of aircraft of which the maximum total weight authorised does not exceed 1,150 kg.:	
(aa) outside controlled airspace	A, B, D and F (i) only
(bb) within controlled airspace	A, B, E with E (iv) duplicated and F
(b) when flying at night:	
(i) in the case of aircraft of which the maximum total weight authorised exceeds 1,150kg.	A, B, C, E with E (iv) duplicated, F and G
(ii) in the case of aircraft of which the maximum total weight authorised does not exceed 1,150kg.	A, B, C, D with F (i) only and G
(iii) in the case of turbo-jet aeroplanes for the carriage of passengers and which have a maximum total weight authorised exceeding 22,700kg.	BB (i) and BB (ii)
(iv) in the case of aeroplanes having a maximum total weight authorised exceeding 5,700 kg. for the carriage of passengers and conforming to a type for which a Certificate of Airworthiness, in the opinion of the Civil Aviation Authority of Macau, is identical in all matters affecting the provision of emergency evacuation facilities to an aeroplane for which a Certificate of Airworthiness was first applied for before that date.	BB (i) and BB (ii)
(v) in the case of aeroplanes for the carriage of passengers which in accordance with the Certificate of Airworthiness in force in respect thereof may carry more than 19 persons over 3 years of age	BB (i)

Aircraft and circumstances of flight	Scale of equipment required
(c) when flying over water beyond gliding distance from land	A, B, D, F (i) only and H
(d) on all flights on which in the event of any emergency occurring during take off or during the landing at the intended destination or any likely alternate destination it is reasonably possible that the aeroplane would be forced to land onto water	A, B, D, F (i) only and H
(e) when flying over water:	
(i) in the case of an aeroplane having such a weight and performance that with any one of its power units inoperative and the remaining power unit or units operating within the maximum continuous power conditions specified in the Certificate of Airworthiness, performance schedule or flight manual relating to the aeroplane issued or rendered valid by the Civil Aviation Authority of Macau it is capable of a gradient of climb of at least 1 in 200 at an altitude of 5,000 feet in the International Standard Atmosphere specified in or ascertainable by reference to the Certificate of Airworthiness in force in respect of that aircraft, when either more than 400 nautical miles or more than 90 minutes flying time* from the nearest aerodrome at which an emergency landing can be made	A, B, D, F (i) only, H and J
(ii) in the case of all other aircraft, when more than 30 minutes flying time* from such aerodrome	A, B, D, F (i) only, H and J
(f) on all flights which involve manoeuvres on water.	A, B, D, F (i) only, H, I and J
(g) when flying at a height of 10,000 feet or more above mean sea level.	A, B, D, F (i) only and K
(h) when flying at a height of 25,000 feet or more above mean sea level	CC

* For purposes of this Table, flying time shall be calculated on the assumption that the aircraft is flying in still air at the speed specified in the relevant Certificate of Airworthiness as the speed for compliance with regulations governing flights over water.

Aircraft and circumstances of flight	Scale of equipment required
(i) on flights when the weather reports or forecasts available at the aerodrome at the time of departure indicate that conditions favouring ice formation are likely to be met	A, B, D, F(i) only and L
(j) when carrying out aerobatic manoeuvres	A, B, D, F(i) only and M
(k) on all flights on which the aircraft carries a flight crew of more than one person	N
(l) on all flights by aircraft being turbine-jet aircraft with a maximum total weight authorised exceeding 5,700 kg. or pressurised aircraft with a maximum total weight authorised exceeding 11,400 kg.	O
(m) on all flights for the purpose of the public transport of passengers	Q and V
(n) on all flights by a pressurised aircraft	R
(o) when flying over substantially uninhabited land areas where in the event of an emergency landing polar conditions are likely to be met	T
(p) when flying over substantially uninhabited land areas where in the event of an emergency landing, tropical conditions are likely to be met	W
(q) when flying at an altitude of more than 49,000 feet	X
(r) on all flights by a turbine-jet aeroplane	Y
(s) on all other flights	A, B, D, and F(i) only
(3) All aeroplanes having a maximum total weight authorised exceeding 5,700 kg.:	
(a) which are operated by an air transport undertaking under a Certificate of Airworthiness of the Transport Category (Passenger) or the Transport Category (Cargo); or	P
(b) in respect of which application has been made and not withdrawn or refused for such a certificate, and which fly under the "A Conditions" or under a Certificate of Airworthiness of the Special Category	
(4) Aeroplanes for which an individual Certificate of Airworthiness in the Transport Category (Passenger) or Transport Category (Cargo) which have a maximum total weight authorised not exceeding 5,700 kg., are powered by two or more turbine engines, and are certificated to carry more than 9 passengers	Z

Aircraft and circumstances of flight	Scale of equipment required
(5) Helicopters for which an individual Certificate of Airworthiness in the Transport Category (Passenger) or Transport Category (Cargo) which have a maximum total weight authorised exceeding 2,730 kg., or which are certificated to carry more than 9 passengers	AA
(6) Turbine-engine aeroplanes exceeding 15,000 kg. maximum total weight authorised or authorised to carry more than 30 passengers	U
(7) All aeroplanes when operated across land areas which have been designated by the State concerned as areas in which search and rescue would be especially difficult	S

5. The scales of equipment indicated in the Table set out in paragraph 4 shall be as follows:

Scale A.

- (i) Spare fuses for all electrical circuits the fuses of which can be replaced in flight, consisting of 10% of the number of each rating or 3 of each rating, whichever is the greater.
- (ii) Maps, charts, codes and other documents and navigational equipment necessary, in addition to any other equipment required under the Regulation for the intended flight of the aircraft, including any diversion which may reasonably be expected.
- (iii)
 - (a) Subject to Scale B (iv), in all aeroplanes, helicopters and gyroplanes, for every pilot's seat and for any seat situated alongside a pilot's seat, a safety belt with one diagonal shoulder strap or a safety harness;
 - (b) subject to Scale B (vi) for every seat in use (not being a seat referred to in sub-paragraph (a) a safety belt with or without one diagonal shoulder strap or a safety harness; and
 - (c) in addition and for attachment to the equipment required in sub-paragraph (b), a child restraint device for every child under the age of two years.
- (iv) One portable non-toxic type fire extinguisher for each enclosed passenger and crew compartment, one of which shall be convenient to a member of the flight crew.
- (v) At least one crash axe readily accessible to a member of the flight crew.

Scale B.

- (i) First aid equipment of good quality, sufficient in quantity, having regard to the number of persons on board the aircraft, including the following:

Roller bandages, triangular bandages, absorbent gauze, adhesive plaster, white absorbent lint, cotton wool (or wound dressing in place of the lint and cotton wool), burn dressings, safety pins;

Haemostatic bandages or tourniquet, skylights;

Antiseptic, analgesic and stimulant drugs; and a handbook on first aid.

(ii) In the case of aircraft with a maximum total weight authorised exceeding 5,700 kg used for the public transport of passengers, the following first aid equipment in addition to paragraph (i):

(a) Materials for treating minor injuries including burns;

(b) Ophthalmic ointment;

(c) A decongestant nasal spray;

(d) Oral drugs as follows:

antispasmodic, central nervous system stimulant, circulatory stimulant, coronary vasodilator, anti-diarrhoeic medication, anti-emetic;

(e) An artificial plastic airway;

(f) Inflatable bag (Ambu-bag) for resuscitation (to be used with item (e) above);

(g) Inflatable splints;

(h) An anaeroid type blood pressure set;

(i) Injectable drugs as follows:

analgesic, antihistamine, coronary stimulant, caretaker steroid, intravenous infusion fluid, sedative and tranquilliser, uterine stimulant and vasopressor agent;

(j) Disposable syringes;

(k) Ground-air visual signal code for use by survivors.

(iii) In the case of an aircraft used for the public transport of passengers in which, while the aircraft is at rest on the ground, the sill of any external door intended for the disembarkation of passengers, whether normally or in an emergency:

(a) is more than 1.82 metres from the ground when the undercarriage of the machine is in the normal position for taxiing; or

(b) would be more than 1.82 metres from the ground if the undercarriage or any part thereof should collapse, break or fail to function,

apparatus readily available for use at each such door consisting of device or devices which will enable passengers to reach the ground safely in an emergency while the aircraft is on the ground, and can be readily fixed in position for use.

(iv) For all aircraft on all flights a safety harness for each flight crew member seat in place of the safety belt referred to under Scale A. If the maximum total weight authorised for the aircraft is more than 2,730 kg the safety harness shall incorporate a device which will automatically restrain the occupant's torso in the event of rapid deceleration.

Note: Safety harness includes shoulder straps and seat belt which may be used independently.

(v) If the commander cannot, from his own seat, see all the passengers' seats in the aircraft, a means of indicating to the passengers that seat belts should be fastened.

(vi) In the case of an with a forward or rearward facing (within 15° of the longitudinal axis of the aircraft) seat, fitted with a safety harness for the use of each cabin attendant specified in paragraph 18 (8) of the Regulation.

Scale C.

(i) Equipment for displaying the lights required by the Rules of the Air and Air Traffic Control.

(ii) Electrical equipment, supplied from the main source of supply in the aircraft, to provide sufficient illumination to enable the flight crew properly to carry out their duties during flight.

(iii) Unless the aircraft is equipped with radio, devices for making the visual signal specified in the Rules of the Air and Air Traffic Control as indicating a request for permission to land.

Scale D.

(i) (a) In the case of a helicopter or a gyro plane, a slip indicator;

(b) in the case of any other aircraft either:

(aa) a turn indicator and a slip indicator; or

(bb) a gyroscopic bank and pitch indicator and a gyroscopic direction indicator.

- (ii) A sensitive pressure altimeter adjustable for changes in barometric pressure.
- (iii) An airspeed indicator.
- (iv) A magnetic compass.

Scale E.

- (i)
 - (a) in the case of a helicopter or a gyro plane, a slip indicator.
 - (b) in the case of any other aircraft, a turn indicator and a slip indicator except that any aircraft may, at the option of the operator, be equipped with an additional gyroscopic bank and pitch indicator in lieu of the turn indicator.
- (ii) A gyroscopic bank and pitch indicator.
- (iii) A gyroscopic direction indicator.
- (iv) A sensitive pressure altimeter adjustable for changes in barometric pressure.
- (v) An emergency power supply, independent of the main electrical generating system, capable of operating and illuminating a gyroscopic bank and pitch indicator for a minimum period of 30 minutes after the total failure of the main electrical generating system, in respect of:
 - (a) newly constructed aircraft, fitted with electrical attitude indicating instruments, of which the maximum total weight authorised exceeds 5,700 kg issued with a Macau Certificate of Airworthiness in the Transport Category;
 - (b) aircraft, fitted with electrical attitude indicating instruments, certified in the Transport Category for the carriage of more than 19 persons over the age of 3 years; and
 - (c) aircraft, fitted with electrical attitude indicating instruments with a maximum total weight authorised exceeding 15,900 kg.
- (vi) An airspeed indicating system with means of preventing malfunctioning due to either condensation or icing.
- (vii) A magnetic compass.

Scale F.

- (i) An accurate time piece indicating the time in hours, minutes and seconds.

- (ii) A means of indicating whether the power supply to the gyroscopic instruments is adequate.
- (iii) A rate of climb and descent indicator.
- (iv) If the maximum total weight authorised of the aircraft is more than 5,700 kg, a means of indicating the outside air temperature.
- (v) If the maximum total weight authorised of the aircraft is more than 5,700 kg, 2 air speed indicators.

Scale G.

- (i) Landing lights consisting of two single filament lamps, or 1 dual filament lamp with separately energised filaments.
- (ii) An electric lighting system to provide illumination in every passenger compartment.
- (iii) (a) One electric torch for each member of the crew of the aircraft; or
 - (b) (A) one electric torch for each member of the flight crew of the aircraft; and
 - (B) at least one electric torch affixed adjacent to each floor level exit intended for the disembarkation of passengers whether normally or in an emergency, except that such torches shall:
 - (i) be readily accessible for use by the crew of the aircraft at all times; and
 - (ii) number in total not less than the minimum number of cabin attendants required to be carried with a full passenger complement.
 - (iii) In the case of an aircraft of which the maximum total weight authorised exceeds 5,700 kg, a means of observing the existence and build up of ice on the aircraft.

Scale H.

For each person on board, a life jacket equipped with a whistle and a waterproof torch:

Provided that life jackets constructed and carried solely for use by children under 3 years of age need not be equipped with a whistle.

Scale I.

- (i) Additional flotation equipment, capable of supporting one-fifth of the number of persons on board, and provided in a place of stowage accessible from outside the aircraft.
- (ii) Parachute distress rocket signals capable of making, from the surface of the water, the pyrotechnical signal of distress specified in the Rules of the Air and Air Traffic Control.
- (iii) A sea anchor and other equipment necessary to facilitate mooring, anchoring and manoeuvring characteristics

Scale J.

- (i) Liferafts sufficient to accommodate all persons on board the aircraft with the following equipment:

- (a) means for maintaining buoyancy;
- (b) a sea anchor;
- (c) life lines, and means of attaching one liferaft to another;
- (d) paddles or other means of propulsion;
- (e) means of protecting the occupants from the elements;
- (f) a waterproof torch;
- (g) marine type pyrotechnical distress signals;
- (h) means of making sea water drinkable;
- (i) for each 4 or proportion of 4 persons the liferaft is designed to carry:

(A) 100 grams of glucose toffee tablets; and

(B) one litre of fresh water in durable containers; provided that in any case in which it is not reasonably practicable to carry the quantity of water above specified as large a quantity of fresh water as is reasonably practicable in the circumstances may be substituted. In no case however shall the quantity of water carried be less than is sufficient when added to the amount of fresh water capable of being produced by means of the equipment specified in item (h) of this sub-paragraph to provide 1 litre of water for each 4 or proportion of 4 persons the liferaft is designed to carry; and

- (j) first aid equipment.

Items (f) to (j) inclusive, shall be contained in a pack stowed with the liferaft.

- (ii) For every 4 or proportion of 4 liferaft, one liferaft radio transmitter

Scale K.

A supply of oxygen and the associated equipment to meet the requirements set out in Parts I and II of this Scale. The duration for the purposes of this Scale shall be:

- (i) that calculated in accordance with the operations manual prior to the commencement of the flight, being the period or periods which it is reasonably anticipated that the aircraft will be flown in the circumstances of the intended flight at a height where such requirements apply and in calculating the duration account shall be taken of:

(a) in the case of pressurised aircraft, the possibility of depressurisation when flying above flight level 100;

(b) the possibility of failure of one or more of the aircraft engines;

(c) restrictions due to required minimum safe altitude;

(d) fuel requirement; and

(e) the performance of the aircraft; or

- (ii) the period or periods during which the aircraft is actually flown in the circumstances specified in Parts I and II, whichever is the greater.

PART I - Unpressurised Aircraft

- (i) When flying at or below flight level 100: Nil.

- (ii) When flying above flight level 100 but not exceeding flight level 120:

<i>Supply for</i>	<i>Duration</i>
(a) Members of the flight crew	Any period during which the aircraft flies above flight level 100.
(b) Cabin attendants and 10% of passengers	For any continuous period exceeding 30 minutes during which the aircraft flies above flight level 100 but not exceeding flight level 120, the duration shall be the period by which 30 minutes is exceeded.

(iii) When flying above flight level 120:

<i>Supply for</i>	<i>Duration</i>
(a) Members of the flight crew	Any period during which the aircraft flies above flight level 120
(b) Cabin attendants and all passengers	Any period during which the aircraft flies above flight level 120.

PART II - Pressurised Aircraft

(i) When flying at or below flight level 100: Nil.

(ii) When flying above flight level 100 but not exceeding flight level 250:

<i>Supply for</i>	<i>Duration</i>
(a) Members of the flight crew	30 minutes or whenever the cabin pressure altitude exceeds 10,000ft, whichever is the greater.
(b) Cabin attendants and 10% of passengers	(A) When the aircraft is capable of descending and continuing to its destination as specified in A below, 30 minutes or whenever the cabin pressure altitude exceeds 10,000 ft whichever is greater. (B) When the aircraft is not so capable, whenever the cabin pressure altitude is greater than 10,000 ft but does not exceed 12,000 ft.
(c) Cabin attendants and all passengers	(A) When the aircraft is capable of descending and continuing to its destination as specified in A below, no requirement other than that at (ii) (b) (A) of this part of this scale. (B) When the aircraft is not so capable and the cabin pressure altitude exceeds 12,000 ft, the duration shall be the period when the cabin pressure altitude exceeds 12,000 ft or 10 minutes whichever is the greater.

(iii) When flying above flight level 250:

<i>Supply for</i>	<i>Duration</i>
(a) Members of the flight crew	2 hours or whenever the cabin pressure altitude exceeds 10,000ft, whichever is the greater

- (a) Provided that the Civil Aviation Authority of Macau will not grant an aeronautical station operator license to a person under the age of 18 years;
- (b) Air traffic controllers duly qualified to act as such by the Civil Aviation Authority of Macau may be regarded as having met the necessary requirements, therefore do not need to hold an aeronautical station operator's license.
- (c) Holders of pilot licenses accepted by the Civil Aviation Authority of Macau can be regarded as having met the necessary requirements and therefore do not need to hold an aeronautical station operator's license.
- (3) Every person to act as an aeronautical station operator must meet the conditions laid down in the Fourth Schedule to this Regulation, specifying the Macau's requirements to hold an aeronautical station operator's license.
37. (1) An aircraft registered in Macau shall not fly in the airspace specified in the Sixteenth Schedule unless:
- (a) it is equipped with navigation systems which enable the aircraft to maintain the navigation performance capability specified in the Sixteenth Schedule; and
- (b) the navigation systems required by sub-paragraph (1) (a) are approved by the Civil Aviation Authority of Macau and installed and maintained in a manner approved by the Civil Aviation Authority of Macau; and
- (c) the operating procedures for the navigation systems required by sub-paragraph (1) (a) are approved by the Civil Aviation Authority of Macau; and
- (d) the equipment is operated in accordance with the approved procedures while the aircraft is flying in the airspace.
38. (1) The operator of the aircraft shall at all times subject to paragraph 58, preserve:
- (a) the last 25 hours of recording made by any flight data recorder required by paragraph 4 (3) of the Fifth Schedule to be carried in an aeroplane; or
- (b) the last half an hour of recording made by any flight data recorder required by paragraph 4 (4) of the Fifth Schedule to be carried in an aeroplane; or
- (c) the last 10 hours of recording made by any flight data recorder required by paragraph 4 (5) of the Fifth Schedule to be carried in a helicopter; and
- (d) a record of not less than one representative flight, that is to say, a recording of a flight made within the last 12 months which includes a take off, climb, cruise, descent, approach to landing and landing, together with a means of identifying the record with the flight to which it relates.

(2) The operator of the aircraft shall preserve the records mentioned in sub-paragraph (1) for such period as the Civil Aviation Authority of Macau may in a particular case direct.

(3) On any flight on which a flight data recorder or a cockpit voice recorder is required by this Regulation to be carried:

(a) in an aeroplane, it shall always be in use from the beginning of the take off run to the end of the landing run; and

(b) in a helicopter, it shall always be in use from the time the rotors first turn for the purpose of taking off until the rotors are next stopped.

39. (1) Articles and animals (whether or not attached to a parachute) shall not be dropped, or permitted to drop, from an aircraft in flight so as to endanger persons or property.

(2) Articles, animals and persons (whether or not attached to a parachute) shall not be dropped, or permitted to drop, to the surface from an aircraft flying in Macau:

Provided that this sub-paragraph shall not apply to the descent of persons by parachute from an aircraft in an emergency, or to the dropping of articles by or with the authority of the commander of the aircraft in the following circumstances:

(a) the dropping of articles for the purpose of saving life;

(b) jettisoning, in case of emergency, of fuel or other articles in the aircraft;

(c) the dropping of articles solely for the purpose of navigating the aircraft in accordance with ordinary practice or with this Regulation;

(d) the dropping of articles for the purposes of agriculture, horticulture or public health or as a measure against weather conditions or oil pollution, or for training for the dropping of articles for any such purposes, if the articles are dropped with the permission of the Civil Aviation Authority of Macau and in accordance with any conditions subject to which that permission may have been given.

(3) For the purposes of this paragraph, dropping includes projecting and lowering.

(4) Nothing in this paragraph shall prohibit the lowering of any person, animal or paragraph from a helicopter to the surface, if the Certificate of Airworthiness issued or rendered valid in respect of the helicopter under the law of the country or territory in which it is registered includes an express provision that it may be used for that purpose.

40. (1) An aircraft shall not carry any munitions of war.

(2) It shall be unlawful for any person to take or cause to be taken on board an aircraft, or to deliver or cause to be delivered for carriage thereon, any goods which he knows or has reason to believe or suspects to be munitions of war.

(3) For the purposes of this paragraph, "*munition of war*" means such weapons and ammunition designed for use in warfare or against the person, including parts designed for such weapons and ammunition.

41. (1) Dangerous goods shall not be carried in an aircraft except as follows:

(a) goods carried in accordance with any regulations which the Civil Aviation Authority of Macau may make to permit dangerous goods to be carried either in aircraft generally or in aircraft of any class specified in the regulations;

(b) goods carried with the written permission of the Civil Aviation Authority of Macau, and in accordance with any conditions to which such permission may be subject;

(c) goods carried in an aircraft with the consent of the operator thereof for the purpose of ensuring the proper navigation or safety of the aircraft or the well-being of any person on board; and

(d) goods permitted to be carried under the law of the country or territory in which the aircraft is registered, if there is in force in relation to such country or territory an agreement between the territory of Macau and the government of the country or territory permitting the carriage of dangerous goods within Macau in aircraft registered in that country or territory.

(2) Dangerous goods permitted by this Regulation to be carried in an aircraft shall not be loaded as cargo therein unless:

(a) the consignor of the goods has furnished the operator of the aircraft with particulars in writing of the nature of the goods and the danger to which they give rise; and

(b) the goods have been properly packed and the container in which they are packed is properly and clearly marked and labelled so as to indicate that danger to the person loading the goods in the aircraft.

(3) The operator of any aircraft shall:

(a) ensure that passengers are warned as to the type of goods that they are prohibited from transporting on board an aircraft as checked baggage or carry on articles;

(b) ensure that flight crew and other employees including his agents are provided with such information and training as will enable them to carry out their responsibilities with regard to the transport of dangerous goods;

(c) before the commencement of any training course relating to the transport of dangerous goods, submit to the Civil Aviation Authority of Macau for approval the programmes and syllabus of the training course; and

(d) as soon as practicable and before any flight begins, inform the commander of the aircraft in writing of the identity of any dangerous goods on board the aircraft, the danger to which they give rise and the weight or quantity of the goods.

(4) It shall be unlawful for any person to take or cause to be taken on board any aircraft, or to deliver or cause to be delivered for loading thereon, any goods which he knows or ought to know or suspect to be dangerous goods the carriage of which is prohibited by this paragraph.

(5) The operator of any aircraft shall as soon as practicable notify the Civil Aviation Authority of Macau of any dangerous goods accident or incident.

(6) Where any dangerous goods accident or incident occurs, the Civil Aviation Authority of Macau shall cause an investigation to be made in such manner as he thinks necessary.

(7) For the purposes of any investigation under sub-paragraph (6), any person authorised by the Civil Aviation Authority of Macau to carry out the investigation may:

(a) require such persons as he thinks necessary to answer any question or furnish any information or produce any document, paper and article and retain any such document, paper and article until the completion of the investigation;

(b) have access to and examine any consignment of goods; and

(c) enter and inspect any place the entry or inspection whereof appears to him to be necessary.

(8) For the purpose of this paragraph:

"*dangerous goods*" means articles or substances which are capable of posing significant risk to health, safety or property when transported by air;

"*dangerous goods accident*" means an occurrence associated with and related to the transport of dangerous goods by air which results in fatal or serious injury to a person or major property damage;

"*dangerous goods incident*" means an occurrence, other than a dangerous goods accident, associated with and related to the transport of dangerous goods by air, not necessarily occurring on board an aircraft, which results in injury to a person, property damage, fire, breakage, spillage, leakage of fluid or radiation or other evidence that the integrity of the packaging has not been maintained; and includes any occurrence; relating to the transport of dangerous goods, which seriously jeopardises the aircraft or its occupants.

(9) This paragraph shall be additional to and not in derogation from paragraph 40.

42. A person shall not be in or on part of an aircraft in flight which is not a part designed for the accommodation of persons and in particular a person shall not be on the wings or undercarriage of an aircraft.

Provided that a person may have temporary access to:

- (a) any part of an aircraft for the purpose of taking action necessary for the safety of the aircraft or of any person or cargo therein; or
- (b) any part of an aircraft in which cargo or stores are carried, being a part which is designed to enable a person to have access thereto while the aircraft is in flight.

43. (1) This paragraph shall apply to public transport aircraft registered in Macau.

(2) Whenever an aircraft to which this paragraph applies is carrying passengers, every exit therefrom and every internal door in the aircraft shall be in working order, and during take off and landing and during any emergency every such exit and door shall be kept free of obstruction and shall not be fastened by locking or otherwise so as to prevent, hinder or delay its use by passengers:

Provided that:

(a) an exit may be obstructed by cargo if it is an exit which, in accordance with arrangements approved by the Civil Aviation Authority of Macau either generally or in relation to a class of aircraft or a particular aircraft, is not required for use by passengers;

(b) a door between the flight crew compartment and any adjacent compartment to which passengers have access may be locked or bolted if the commander of the aircraft so determines, for the purpose of preventing access by passengers to the flight crew compartment; and

(c) nothing in this paragraph shall apply to any internal door which is so placed that it cannot prevent, hinder or delay the exit of passengers from the aircraft in an emergency if it is not in working order.

(3) Every exit from the aircraft shall be marked with the words "EXIT" or "EMERGENCY EXIT" in English and Chinese.

(4) (a) Every exit from the aircraft shall be marked with instructions in English and Chinese and with diagrams, to indicate the correct method of opening the exit.

(b) The markings shall be placed on or near the inside surface of the door or other closure of the exit and, if it is openable from the outside of the aircraft, on or near the exterior surface.

(5) (a) Every aircraft to which this paragraph applies, being an aircraft of which the maximum total weight authorised exceeds 3,600 kg shall be marked upon the exterior surface of its fuselage with marking to show the areas (referred to in this sub-paragraph as break-in areas) which can, for purposes of rescue in an emergency, be most readily and effectively broken into by persons outside the aircraft.

- (b) The break-in areas shall be rectangular in shape and shall be marked by right-angled corner markings, each arm of which shall be 10 cm in length along its outer edge and 2.5 cm in width.
 - (c) The words "CUT HERE IN EMERGENCY" shall be marked in English and Chinese across the centre of each break-in area.
- (6) On every flight by an aircraft to which this paragraph applies, being an aircraft of which the maximum total weight authorised exceeds 5,700 kg, every exit from such an aircraft intended to be used by passengers in an emergency shall be marked upon the exterior of the aircraft by a band not less than 5 cm in width outlining the exit.
- (7) The markings required by this paragraph shall:
- (a) be painted, or affixed by other equally permanent means;
 - (b) except in the case of the markings required by sub-paragraph (6), be red in colour and, in any case in which the colour of the adjacent background is such as to render red markings not readily visible, be outlined in white or some other contrasting colour in such a manner as to render them readily visible;
 - (c) in the case of the markings required by sub-paragraph (6), be of a colour clearly contrasting with the background on which it appears;
 - (d) be kept at all times clean and unobscured.
- (8) If one, but not more than one, exit from an aircraft becomes inoperative at a place where it is not reasonably practicable for it to be repaired or replaced, nothing in this paragraph shall prevent that aircraft from carrying passengers until it next lands at a place where the exit can be repaired or replaced:

Provided that:

- (a) the number of passengers carried and the position of the seats which they occupy is in accordance with arrangements approved by the Civil Aviation Authority of Macau either in relation to the particular aircraft or to a class of aircraft; and
- (b) in accordance with arrangements so approved, the exit is fastened by locking or otherwise, the words "Exit" or "Emergency Exit" are covered and the exit is marked by a red disc at least 23 centimetres in diameter with a horizontal white bar across it bearing the words "No exit" in red letters written in English and Chinese.

44. A person shall not wilfully or negligently imperil the safety of an aircraft or any person on board, whether by interference with any member of the flight crew of the aircraft, or by tampering with the aircraft or its equipment or by disorderly conduct or by any other means.

45. A person shall not wilfully or negligently cause or permit an aircraft to endanger any person or property.

46. (1) A person shall not enter any aircraft when drunk, or be drunk in any aircraft.
- (2) A person under the influence of a drug to such an extent as to impair his senses shall not enter or be in any aircraft.
- (3) A person shall not, when acting as a member of the crew of any aircraft or being carried in any aircraft for the purpose of so acting, be under the influence of drink or a drug.
47. (1) Notices indicating when smoking is prohibited shall be exhibited in every Macau registered aircraft so as to be visible from each passenger seat therein.
- (2) A person shall not smoke in any compartment of a Macau registered aircraft at a time when smoking is prohibited in that compartment by a notice to that effect exhibited by or on behalf of the commander of the aircraft.
48. Every person in a Macau registered aircraft shall obey all lawful commands which the commander of that aircraft may give for the purpose of securing the safety of the aircraft and of persons or property carried therein, or the safety, efficiency or regularity of air navigation.
49. A person shall not secrete himself for the purpose of being carried in an aircraft without the consent of either the operator or the commander thereof or of any other person entitled to give consent to his being carried in the aircraft.

Part VI

AIRCRAFT NOISE

50. (1) In this Part, unless the context otherwise requires:

"*aircraft*" means a subsonic jet aeroplane;

"*Annex*" means Volume I of Annex 16 to the Convention on International Civil Aviation entitled "*Environmental Protection*" and any amendment thereto;

"*noise certificate*" means a certificate issued or validated or other document approved to the effect that the aircraft to which the certificate or other document relates complies with the applicable noise certification requirements in force in that State.

- (2) This Part shall apply to every aircraft landing or taking off in Macau except an aircraft flying in accordance with "A Conditions" or "B Conditions" set out in the Second Schedule.

- (3) An aircraft to which this Part applies shall not land or take off in Macau unless:

(a) there is in force in respect of that aircraft a noise certificate which is:

- (i) deemed to be issued by the Civil Aviation Authority of Macau under sub-paragraph (4);
- (ii) issued or validated by a country which applies standards which, in the opinion of the Civil Aviation Authority of Macau, are substantially equivalent to the Annex; or
- (iii) issued or validated in pursuance of the Annex; and

(b) all conditions subject to which the certificate was issued are complied with.

(4) Where the manufacturer of an aircraft that engages in air navigation has included in the flight manual for the aircraft a statement to the effect that the aircraft:

(a) conforms with the relevant standards in respect of noise contained in the Annex; or

(b) complies with the standard requirements relating to the control of aircraft noise, the requirements of which, in the opinion of the Civil Aviation Authority of Macau, are substantially equivalent to the Annex,

there shall be deemed to have been issued under this sub-paragraph a noise certificate in relation to that aircraft.

(5) The Civil Aviation Authority of Macau may exempt, either absolutely or subject to such conditions as he thinks fit, any aircraft or person from all or any of the provisions of this Part.

Part VII

FATIGUE OF CREW

51. (1) Subject to sub-paragraph (2), paragraphs 52 and 53 shall apply in relation to any Macau registered aircraft which is:

(a) engaged on a flight for the purpose of public transport; or

(b) operated by an air transport undertaking.

(2) Paragraphs 52 and 53 shall not apply in relation to a flight made only for the purpose of instruction in flying given by or on behalf of a flying club or flying school or a person who is not an air transport undertaking.

(3) In this Part, unless the context otherwise requires:

(a) "*flight time*", in relation to any person, means all time spent by that person in an aircraft whether or not registered in Macau (other than an aircraft of which the maximum total weight authorised does not exceed 1,600 kg and which is not flying for the purpose of public transport or aerial work) while it is in flight and he is carried therein as a member of the crew thereof;

(b) "*day*" means a continuous period of 24 hours beginning at midnight.

(4) For the purposes of this Part, a helicopter shall be deemed to be in flight from the moment the helicopter first moves under its own power for the purpose of taking off until the rotors are next stopped.

52. (1) The operator of an aircraft to which this paragraph applies shall not cause or permit that aircraft to make a flight unless:

(a) he has established a scheme for the regulation of flight times for every person flying in that aircraft as a member of its crew;

(b) the scheme is approved by the Civil Aviation Authority of Macau subject to such conditions as it thinks fit;

(c) either:

(i) the scheme is incorporated in the Operations Manual required by paragraph 24; or

(ii) in a case where an Operations Manual is not required by paragraph 24, the scheme is incorporated in a document, a copy of which has been made available to every person flying in that aircraft as a member of its crew; and

(d) he has taken all such steps as are reasonably practicable to ensure that the provisions of the scheme will be complied with in relation to every person flying in that aircraft as a member of its crew.

(2) The operator of an aircraft to which this paragraph applies shall not cause or permit any person to fly therein as a member of its crew if he knows or has reason to believe that that person is suffering from, or having regard to the circumstances of the flight to be undertaken, is likely to suffer from such fatigue while he is so flying as may endanger the safety of the aircraft or of its occupants.

(3) The operator of an aircraft to which this paragraph applies shall not cause or permit any person to fly therein as a member of its flight crew unless the operator has in his possession an accurate and up-to-date record in respect of that person and in respect of the 28 days immediately preceding the flight showing:

(a) all his flight times; and

(b) brief particulars of the nature of the functions performed by him in the course of his flight times

(4) The record referred to in sub-paragraph (3) shall, subject to paragraph 58, be preserved by the operator of the aircraft until a date 12 months after the flight referred to in that paragraph.

53. (1) A person shall not act as a member of the crew of an aircraft to which this paragraph applies if he knows or suspects that he is suffering from, or having regard to the circumstances of the flight to be undertaken, is likely to suffer from such fatigue as may endanger the safety of the aircraft or its occupants.

(2) A person shall not act as a member of the flight crew of an aircraft to which this paragraph applies unless he has ensured that the operator of the aircraft is aware of his flight times during the period of 28 days preceding the flight.

54. (1) Subject to sub-paragraph (2), a person shall not act as a member of the flight crew of a Macau registered aircraft if at the beginning of the flight the aggregate of all his previous flight times:

(a) during the period of 28 consecutive days expiring at the end of the day on which the flight begins exceeds 100 hours; or

(b) during the period of 12 months expiring at the end of the previous month exceeds 1,000 hours.

(2) Paragraph (1) shall not apply to a flight made:

(a) in aircraft of which the maximum total weight authorised does not exceed 1,600 kg and which is not flying for the purpose of public transport or aerial work; or

(b) in an aircraft not flying for the purpose of public transport nor operated by an air transport undertaking, if at the time when the flight begins the aggregate of all the flight times of that person since he was last medically examined and found fit for the purpose of the renewal of the Flight Crew License does not exceed 25 hours.

Part VIII

DOCUMENTS AND RECORDS

55. (1) An aircraft shall not fly unless it carries the documents which it is required to carry under the law of the country or territory in which it is registered.

(2) A Macau registered aircraft shall, when in flight, carry all the documents in accordance with the Tenth Schedule.

56. The operator of a public transport aircraft registered in Macau shall, in respect of any flight by that aircraft during which it may fly at an altitude of more than 49,000 feet, keep a record in a manner prescribed of the total dose of cosmic radiation to which the aircraft is exposed during the flight together with the names of the members of the crew of the aircraft during the flight.

57. (1) The commander of an aircraft shall, within a reasonable time after being requested to do so by an authorised entity, cause to be produced to that entity:

- (a) the Certificate of Registration and Certificate of Airworthiness in force in respect of the aircraft;
- (b) the licenses of its flight crew;
- (c) the Noise Certificate as required by paragraph 50; and
- (d) such other documents as the aircraft is required by paragraph 55 to carry when in flight.

(2) The operator of a Macau registered aircraft shall, within a reasonable time after being requested to do so by an authorised entity, cause to be produced to that person such of the following documents as may have been requested by that person being documents which are required, by or under this Regulation, to be in force or to be carried or preserved:

- (a) the documents referred to in the Tenth Schedule as Documents A, B and G;
- (b) the aircraft log book, engine log books and variable pitch propeller log books required under this Regulation to be kept;
- (c) the weight schedule, if any, required to be preserved under paragraph 16;
- (d) in the case of a public transport aircraft or aerial work aircraft, the documents referred to in the Tenth Schedule as Documents D, E, F and H;
- (e) any records of flight times, duty periods and rest periods which he is required by paragraph 52 (4) to preserve, and such other documents and information in the possession or control of the operator, as the authorised entity may require for the purpose of determining whether those records are complete and accurate;
- (f) any such operation manuals as are required to be made available under paragraph 24 (2) (a) (i);
- (g) the records made by any flight data recorder required to be carried by or under this Regulation; or
- (h) the record made from any cosmic radiation detection equipment together with the record of the names of the members of the crew of the aircraft which are required to be kept under paragraph 56.

(3) The holder of a license granted or rendered valid under this Regulation shall, within a reasonable time after being requested to do so by an authorised entity, cause to be produced to that person his license, including any certificate of validation. The requirements of this subparagraph shall be deemed to have been complied with, except in relation to a license required by paragraph 55 to be carried in the aircraft or kept at an aerodrome, if the license requested is produced within 5 days after the request has been made, to an authorised entity of the Civil Aviation Authority of Macau specified, at the time of the request, by the person to whom the request is made.

(4) Every person required by paragraph 22 to keep a personal flying log book shall cause it to be produced within a reasonable time to an authorised entity after being requested to do so by him within two years after the date of the last entry therein.

58. A person required by this Regulation to preserve any document by reason of his being the operator of an aircraft shall, if he ceases to be the operator of the aircraft, continue to preserve the document or record as if he had not ceased to be the operator, and in the event of his death the duty to preserve the document or record shall fall upon his personal representative:

Provided that if:

(a) another person becomes the operator of the aircraft and it remains registered in Macau he or his personal representative shall deliver to that other person upon demand the certificates of maintenance review and release to service, the log books and the weight schedule and any record made by a flight recorder and preserved in accordance with this Regulation which are in force or required to be preserved in respect of that aircraft;

(b) an engine or variable pitch propeller is removed from the aircraft and installed in another aircraft operated by another person and registered in Macau he or his personal representative shall deliver to that other person upon demand the log book relating to that engine or propeller; and

(c) any person in respect of whom a record has been kept by him in accordance with paragraph 52 (3) becomes a member of the flight crew of a public transport aircraft registered in Macau and operated by another person he or his personal representative shall deliver those records to that other person upon demand, and it shall be the duty of that other person to deal with the document or record delivered to him as if he were the first mentioned operator.

59. (1) The Civil Aviation Authority of Macau may, if he thinks fit, provisionally suspend any certificate, license, approval, permission, exemption or other document issued or granted under this Regulation pending investigation of the case.

(2) The Civil Aviation Authority of Macau may, on sufficient ground being shown to his satisfaction after due inquiry, revoke, suspend or vary any such certificate, license, approval, permission, exemption or other document.

(3) The holder or any person having the possession or custody of any certificate, license, approval, permission, exemption or other document which has been revoked, suspended or varied under this Regulation shall surrender it to the Civil Aviation Authority of Macau within a reasonable time after being required to do so by him.

(4) The breach of any condition subject to which any certificate, license, approval, permission, exemption or other document other than a license issued in respect of an aerodrome, has been granted or issued under this Regulation shall render the document invalid during the continuance of the breach.

60. (1) A person shall not with intent to deceive:

(a) use any certificate, license, approval, permission, exemption or other document issued or required by or under this Regulation which has been forged, altered, revoked or suspended or to which he is not entitled;

(b) lend any certificate, license, approval, permission, exemption or other document issued or required by or under this Regulation to or allow it to be used by any other person; or

(c) make any false representation for the purpose of procuring for himself or any other person the grants issue, renewal or variation of any such certificate, license, approval, permission or exemption or other document.

(2) A person shall not wilfully mutilate, alter or render illegible any log book or other record required by or under this Regulation to be maintained or any entry made therein, or knowingly make, or procure or assist in the making of, any false entry in or material omission from any such log book or record or destroy any such log book or record during the period for which it is required under this Regulation to be preserved.

(3) All entries made in writing in any log book and record referred to in sub-paragraph (2) shall be in ink.

(4) A person shall not wilfully or negligently make in a load sheet any entry which is incorrect in any material particular, or any material omission from such a load sheet.

(5) A person shall not purport to issue any certificate for the purposes of this Regulation or any regulations made or requirements notified thereunder unless he is authorised to do so under this Regulation.

(6) A person shall not issue any such certificate as aforesaid unless he has satisfied himself that all statements in the certificate are correct.

Part IX

CONTROL OF AIR TRAFFIC

NOTE: Part IX of this Regulation as well as the Eleventh Schedule shall only apply to aircraft flying in the area for which Macau is responsible. Outside such area, those aircraft registered in Macau shall comply with Annex 2 of ICAO - "*Rules of the Air and Air Traffic Services*", unless otherwise specified by the competent authorities.

61. (1) Every person and every aircraft shall comply with the Rules of the Air and Air Traffic Control contained in the Eleventh Schedule as may be applicable to that person or aircraft in the circumstances of the case.

(2) Subject to sub-paragraph (3), it shall be an offence to contravene, to permit the contravention of, or to fail to comply with, the Rules of the Air and Air Traffic Control.

(3) It shall be lawful for the Rules of the Air and Air Traffic Control to be departed from to the extent necessary:

(a) for avoiding immediate danger; or

(b) for complying with the law of any country or territory within which the aircraft then is.

(4) If any departure from the Rules of the Air and Air Traffic Control is made for the purpose of avoiding immediate danger, the commander of the aircraft shall cause written particulars of the departure, and of the circumstances giving rise to it, to be given within 10 days thereafter to the competent authority of the country or territory in which the departure was made or to the Civil Aviation Authority of Macau.

(5) Nothing in the Rules of the Air and Air Traffic Control shall exonerate any person from the consequence of any neglect in the use of lights or signals or of the neglect of any precautions required by ordinary aviation practice or by the special circumstances of the case.

(6) The Civil Aviation Authority of Macau may for the purpose of promoting the safety of the aircraft make regulations as to special signals and other communications to be made by or on an aircraft, as to the course on which and the height at which an aircraft shall fly and as to any other precautions to be observed in relation to the navigation and control of aircraft which the Civil Aviation Authority of Macau may consider expedient for the purpose aforesaid and no aircraft shall fly in contravention of any such regulations.

62. (1) The Civil Aviation Authority of Macau may grant a license subject to such conditions as he thinks fit to any person to act as an air traffic controller or as a student air traffic controller, upon his being satisfied that the applicant is a fit person to hold the license and is qualified by reason of his knowledge, experience, competence, skill, physical and mental fitness so to act, and for that purpose the applicant shall furnish such evidence and undergo such examinations and tests (including in particular medical examinations) as the Civil Aviation Authority of Macau may require of him:

Provided that the Civil Aviation Authority of Macau shall not grant:

(a) a student air traffic controller's license to a person under the age of 18 years;
or

(b) an air traffic controller's license to a person under the age of 21 years.

(2) Every license to act as an air traffic controller shall include:

(a) ratings of the class set forth in Fourth Schedule to this Regulation specifying the type of air traffic control service which the holder of the license is competent to provide; and

(b) the name of the Macau International Airport as the only place where he can exercise his privileges, and

If throughout any period of 90 days the holder of the license has not at any time provided at a particular place the type of air traffic control service specified in the rating, the rating shall, without prejudice to the Civil Aviation Authority of Macau's powers under paragraph 59 of this Regulation, cease to be valid for that place at the end of that period, and upon a rating ceasing to be valid for a place the holder of the license shall forthwith inform the Civil Aviation Authority of Macau to that effect and shall forward the license to the Civil Aviation Authority of Macau to enable it to be endorsed accordingly.

(3) Every license to act as a student air traffic controller shall be valid only for the purpose of authorizing the holder to provide air traffic control service under the supervision of another person who is present at the time and is the holder of valid air traffic controller's license which includes a rating specifying the type of air traffic control service which is being provided by the student air traffic controller and valid at the place in question.

(4) A license to act as an air traffic controller or as a student air traffic controller shall not be valid unless the holder of the license has signed his name thereon in ink with his ordinary signature.

(5) Subject to the provisions of paragraph 59 of this Regulation and to the conditions outlined in the Fourth Schedule, a license to act as an air traffic controller, or as a student air traffic controller, shall remain in force for the period indicated in the license and may be renewed by the Civil Aviation Authority of Macau from time to time, upon his being satisfied that the applicant is a fit person and is qualified as aforesaid.

(6) Every applicant for and holder of an air traffic controller's license or a student air traffic controller's license shall upon such occasions as the Civil Aviation Authority of Macau may require:

(a) submit himself to medical examination by a person approved by the Civil Aviation Authority of Macau either generally or in a particular case who shall make a report to the Civil Aviation Authority of Macau according to the terms specified in the Fourteenth Schedule of this Regulation; and

(b) submit himself to such examinations and tests and furnish such evidence as to his knowledge, experience, competence and skill, as the Civil Aviation Authority of Macau may require.

(7) On the basis of the medical examination referred to in sub-paragraph (6) of this paragraph, the Civil Aviation Authority of Macau or any person approved by him as competent to do so may issue a medical certificate subject to such conditions as he thinks fit to the effect that the holder of the license has been assessed as fit to perform the functions to which the license relates. The certificate shall, without prejudice to paragraph 65 of this Regulation, be valid for such period as is therein specified, and shall be deemed to form part of the license.

(8) The holder of an air traffic controller's license or student air traffic controller's license shall not provide any type of air traffic control service at any such aerodrome or place as is referred to in paragraph 63 (1) of this Regulation unless his license includes a medical certificate issued and in force under sub-paragraph (7) of this paragraph.

63. (1) A person shall not provide in Macau any type of air traffic control service or hold himself out, whether by use of a radio call sign or in any other way, as a person who may provide any type of air traffic control service unless he is the holder, and complies with the terms of:

(a) a valid student air traffic controller's license granted under this Regulation and he is supervised in accordance with paragraph 62 (3) of this Regulation; or

(b) a valid air traffic controller's license so granted authorizing him to provide that type of service at the Macau International Airport; or

(c) a valid air traffic controller's license so granted which does not authorize him to provide that type of service at the Macau International Airport, but he is supervised by a person who is present at the time and who is the holder of a valid air traffic controller's license so granted which authorizes him to provide at the Macau International Airport the type of air traffic control service which is being provided; or

(2) The holder of an air traffic controller's license shall not be entitled to perform any of the functions specified in Fourth Schedule to this Regulation in respect of a rating at any place unless:

(a) his license includes that rating, and the rating is valid for the Macau International Airport; or

(b) he is supervised by a person who is present at the time and who is the holder of a valid air traffic controller's license granted under this Regulation which authorizes him to provide at the Macau International Airport the type of air traffic control service which is being provided.

(3) A person shall not provide any type of air traffic control service unless he identifies himself in such a manner as may be notified.

(4) Nothing in a license granted under paragraph 62 of this Regulation shall permit any person to operate manually any direction finding equipment for the purpose of providing air traffic control service to an aircraft at a time when he is providing air traffic control service or making signals to that aircraft or to another aircraft.

(5) Nothing in this paragraph shall prohibit the holder of a valid air traffic controller's license from providing at the Macau International Airport for which the license includes a valid rating, information to aircraft in flight in the interest of safety.

64. (1) A person shall not provide an aerodrome flight information service at the Macau International Airport unless:

- (a) the service is provided in accordance with the standards and procedures specified in an aerodrome information service manual in respect of that aerodrome;
- (b) the manual is presented to the Civil Aviation Authority of Macau according to his request and conditions;
- (c) such amendments or additions as the Civil Aviation Authority of Macau may from time to time require have been made to the manual.

65. (1) Every holder of an air traffic controller's license granted under paragraph 62 of this Regulation who:

- (a) suffers any personal injury or illness involving incapacity to undertake the functions to which his license relates throughout a period of 20 consecutive days; or
- (b) in the case of a woman, has reason to believe that she is pregnant, shall inform the Civil Aviation Authority of Macau in writing of such injury, illness or pregnancy as soon as possible.

(2) An air traffic controller's license shall be deemed to be suspended upon the elapse of such period of injury or illness as is referred to in paragraph (1) (a) of this paragraph. The suspension of the license shall cease:

- (a) upon the holder being medically examined under arrangements made by the Civil Aviation Authority of Macau and pronounced fit to resume his functions under the license; or
- (b) upon the Civil Aviation Authority of Macau exempting the holder from the requirement of a medical examination subject to such conditions as the Civil Aviation Authority of Macau may think fit.

(3) Upon the pregnancy of the holder of an air traffic controller's license being confirmed, the license shall be deemed to be suspended and such suspension may be lifted by the Civil Aviation Authority of Macau subject to such conditions as he thinks fit, and shall cease upon the holder being medically examined under arrangements made by the Civil Aviation Authority of Macau after the pregnancy has ended and pronounced fit to resume her functions under the license.

66. Where the Civil Aviation Authority of Macau deems it necessary in the public interest to restrict or prohibit flying over any area of Macau by reason of:

- (a) the intended gathering or movement of a large number of persons, or
- (b) the intended holding of an aircraft race or contest or of an exhibition of flying, or
- (c) any other reason affecting the public interest,

the Civil Aviation Authority of Macau may make regulations prohibiting, restricting or imposing conditions on flight, either generally or in relation to any class of aircraft, within the Macau air traffic control zone, and an aircraft shall not fly in contravention of such regulations.

67. Within the Macau air traffic control zone, a captive balloon, a kite, a balloon exceeding two metres in any linear dimension, an airship and an aircraft capable of being flown without a pilot shall not fly in any conditions or circumstances.

Part X

AERODROMES, AERONAUTICAL LIGHTS AND DANGEROUS LIGHTS

68. (1) An aircraft flying for the purpose of the public transport of passengers, cargo or mail, or for the purpose of instruction in flying or any other purpose, shall not take off or land at a place in Macau other than an aerodrome licensed under this Regulation for the take off and landing of such aircraft.

(2) The aircraft referred to in sub-paragraph (1) shall take off or land in accordance with any conditions subject to which the aerodrome may have been so licensed or notified, or subject to which such permission may have been given.

69. (1) The Civil Aviation Authority of Macau may license any aerodrome in Macau for the take off and landing of aircraft engaged in flights for the purpose of public transport of passengers, cargo or mail, or for the purpose of instruction in flying or of any class of such aircraft, and may issue any such license subject to such conditions as he shall consider necessary in the public interest, including a condition that the aerodrome shall at all times when it is available for the take off or landing of aircraft be so available to all persons on equal terms and conditions, and any license issued subject to such a condition shall be known as a license for public use.

(2) The Macau International Airport and the Macau Heliport must display in a prominent place at the aerodrome a copy of the license and shall furnish to any person on request information concerning the terms of the license.

(3) The Macau International Airport and Macau Heliport must not cause or permit any condition of the license to be contravened, in relation to an aircraft engaged on a flight for the public transport of passengers or for instruction in flying, but the license shall not cease to be valid by reason only of such a contravention.

(4) A license granted by the Civil Aviation Authority of Macau in respect either to the Macau International Airport or the Macau Heliport must, subject to paragraph 59, remain in force as may be specified in the license.

(5) The Civil Aviation Authority of Macau will charge the Macau International Airport and the Macau Heliport with the fees described in the Twelfth Schedule for the purpose of granting, renewing or changing those licenses mentioned in sub-paragraph (1).

(6) Any expense incurred by reason of anything done during the course of investigations, approval procedures, supervision, certification, inspections or any other reason which requires the intervention of the Civil Aviation Authority of Macau in connection with

either the Macau International Airport or the Macau Heliport, their personnel, any of their equipment, or any services performed there, shall be paid by and be recoverable from the holder of the respective aerodrome certificate of approval.

70. (1) The Civil Aviation Authority of Macau may, in relation to the Macau International Airport and to the Macau Heliport, approve the charges, or the maximum charges, which may be made for the use of the aerodromes and for any services performed at the aerodromes to or in connection with aircraft, and may further prescribe the conditions to be observed in relation to those charges and the performance of these services.

(2) The Macau International Airport and the Macau Heliport, whose charges or conditions have been approved under sub-paragraph (1), shall not cause or permit any charges to be made in contravention of those approved, and shall cause particulars of these charges to be kept exhibited at the respective aerodrome in such a place and manner as to be readily available for the information of any person affected thereby.

(3) The Macau International Airport and the Macau Heliport must, when required by the Civil Aviation Authority of Macau, furnish to the Civil Aviation Authority of Macau such particulars as he may require of the charges established by the licensee for the use of the aerodromes or of any facilities or services provided at these aerodromes for the safety, efficiency or regularity of air navigation.

71. The person or entity in charge of the Macau International Airport or the Macau Heliport shall cause the respective aerodrome, and all air navigation facilities provided thereat, to be available for use by aircraft registered in any Contracting States or Territories on the same terms and conditions as those set for use by a Macau registered aircraft.

72. (1) Noise and vibration may be caused by aircraft at the Macau International Airport and the Macau Heliport, under the following conditions:

- (a) the aircraft is taking off or landing; or
- (b) the aircraft is moving on the ground; or
- (c) the engines are being operated in the aircraft
 - (i) for the purpose of ensuring their satisfactory performance;
 - (ii) for the purpose of bringing them to a proper temperature in preparation for, or at the end of, a flight; or
 - (iii) for the purpose of ensuring that the instruments, accessories or other components of the aircraft are in a satisfactory condition

73. (1) A person shall not establish or maintain an aeronautical light within Macau except with the permission of the Civil Aviation Authority of Macau and in accordance with any conditions subject to which the permission may be granted.

(2) A person shall not alter the character of an aeronautical light within Macau except with the permission of the Civil Aviation Authority of Macau and in accordance with any conditions subject to which the permission may be granted.

(3) A person shall not wilfully or negligently damage or interfere with any aeronautical light established and maintained by or with the permission of the Civil Aviation Authority of Macau.

74. (1) A person shall not exhibit in Macau any light which:

(a) by reason of its glare is liable to endanger aircraft taking off from, or landing at, an aerodrome; or

(b) by reason of its liability to be mistaken for an aeronautical light is liable to endanger aircraft.

(2) If any light which appears to the Civil Aviation Authority of Macau to be such a light as aforesaid is exhibited the Civil Aviation Authority of Macau may cause a notice to be served upon the person who is the occupier of the place where the light is exhibited or having charge of the light, directing that person, within a reasonable time to be specified in the notice, to take such steps as may be specified in the notice for extinguishing or screening the light and for preventing for the future the exhibition of any other light which may similarly endanger aircraft.

(3) The notice may be served either personally or by post, or by affixing it in some conspicuous place near to the light to which it relates.

Part XI

AIR OPERATORS' CERTIFICATES

75. (1) A Macau registered aircraft shall not fly on any flight for the purpose of public transport otherwise than under and in accordance with the terms of an air operator's certificate granted to the operator of the aircraft under sub-paragraph (2) certifying that the holder of the certificate is competent to ensure that the aircraft operated by him on such flights are operated safely.

(2) The Civil Aviation Authority of Macau shall grant to a person an air operator's certificate if he is satisfied that that person is competent having regard, in particular to his previous conduct and experience, his equipment, organisation, staffing, maintenance and other arrangements, to secure the safe operation of aircraft of the type specified in the certificate on flights of the description and for the purposes so specified. The certificate may be granted subject to such conditions as the Civil Aviation Authority of Macau thinks fit and shall remain in force for the period specified in the certificate.

(3) The Civil Aviation Authority of Macau shall charge the fees highlighted in the Twelfth Schedule of this Regulation for the purpose of the grant, change or renewal of an air operator's certificate.

Part XII

GENERAL

76. (1) If it appears to the Civil Aviation Authority of Macau or an authorised entity that any aircraft is intended or likely to be flown:

(a) in such circumstances that any provision of paragraph 3, 5, 6, 18, 19, 27, 38, or 40 would be contravened in relation to the flight;

(b) in such circumstances that the flight would be in contravention of any other provision of this Regulation or any regulations made thereunder and be a cause of danger to any person or property whether or not in the aircraft; or

(c) while in a condition unfit for the flight, whether or not the flight would otherwise be in contravention of any provision of this Regulation or of any regulations made thereunder,

the Civil Aviation Authority of Macau or that authorised entity may direct the operator or the commander of the aircraft that he is not to permit the aircraft to make the particular flight or any other flight of such description as may be specified in the direction, until the direction has been revoked by the Civil Aviation Authority of Macau or by an authorised entity, and the Civil Aviation Authority of Macau or that authorised entity may take such steps as are necessary to detain the aircraft.

(2) For the purposes of sub-paragraph (1), the Civil Aviation Authority of Macau or any authorised entity may enter upon and inspect any aircraft or aircraft component.

77. The Civil Aviation Authority of Macau and any authorised entity shall have the right of access at all reasonable times:

(a) to the Macau International Airport and the Macau Heliport, or any other aerodrome in Macau for the purpose of inspecting these aerodromes or any related facilities; or

(b) to any place where an aircraft has landed, for the purpose of inspecting the aircraft or any document which he has power to demand under this Regulation and for the purpose of detaining the aircraft under the provisions of this Regulation.

78. A person shall not wilfully obstruct or impede any entity acting in the exercise of his powers or the performance of his duties under this Regulation.

79. Any person who fails to comply with any direction given to him by the Civil Aviation Authority of Macau or by any authorised entity under any provision of this Regulation or any regulations made or requirements notified thereunder shall be deemed for the purposes of this Regulation to have contravened that provision.

- (c) the name and address of his employer (if any);
- (d) particulars of all flights made by him as a member of the flight crew of an aircraft or while flying for the purpose of qualifying for the grant or renewal of a license under this Regulation including
 - (i) the date, time, duration and places of arrival and departure of each flight;
 - (ii) the type and registration marks of the aircraft;
 - (iii) the capacity in which he acted in flight;
 - (iv) particulars of any special conditions under which the flight was conducted, including night flying and instrument flying; and
 - (v) particulars of any test or examination undertaken whilst in flight; and
- (e) particulars of any test or examination taken whilst in a flight simulator, including
 - (i) the date of the test or examination;
 - (ii) the type of simulator;
 - (iii) the capacity in which he acted; and
 - (iv) the nature of the test or examination.

23. (1) A person shall not give any instruction in flying to any person flying or about to fly an aircraft for the purpose of becoming qualified for:

- (a) the grant of a pilot's license;
- (b) the inclusion in a pilot's license of an aircraft rating entitling the holder of the license to act as pilot of:
 - (i) a multi-engined aircraft; or
 - (ii) an aircraft of any class appearing in the Table of Part A of the First Schedule, if he has not been previously entitled under the law to act as pilot of a multi-engined aircraft, or of an aircraft of that class as the case may be; or
- (c) the inclusion or variation of any rating, other than an aircraft rating, in a pilot's license, unless:
 - (i) the person giving the instruction holds a license, granted or rendered valid under this Regulation, entitling him to act as pilot-in-

command of the aircraft for the purpose and in the circumstances under which instruction is to be given;

(ii) such license includes a flying instructor's rating or an assistant flying instructor's rating entitling the holder, in accordance with the privileges specified in the Eighth Schedule in respect of that rating, to give the instruction; and

(iii) if payment is made for the instruction, such license entitles the holder to act as pilot-in-command of an aircraft flying for the purpose of public transport:

Provided that sub-paragraph (1) (c) (iii) shall not apply if the aircraft is owned, or is operated under arrangements entered into by a flying club of which both the person giving and the person receiving the instruction are members.

(2) For the purpose of this paragraph payment shall be deemed to be made for instruction if any reward is given or promised by any person to any other person in consideration of the flight being made or of the instruction being given or if the instruction is given by a person employed for reward primarily for the purpose of giving such instruction.

Part V

OPERATION OF AIRCRAFT

24. (1) This paragraph shall apply to public transport aircraft registered in Macau except aircraft used for the time being solely for flights not intended to exceed 60 minutes in duration, which are either:

(a) flights solely for training persons to perform duties in an aircraft; or

(b) flights intended to begin and end at the same aerodrome.

(2) (a) The operator of every aircraft to which this paragraph applies shall:

(i) make available to each member of his operating staff an Operations Manual;

(ii) ensure that each copy of the operations manual is kept up to date; and

(iii) ensure that on each flight every member of the crew has access to a copy of every part of the operations manual which is relevant to his duties on the flight.

(b) Each Operations Manual shall contain all such information and instructions as may be necessary to enable the operating staff to perform their duties as such

including, in particular, information and instructions relating to the matters specified in Part A of the Ninth Schedule:

Provided that the Operations Manual shall not be required to contain any information or instructions available in a flight manual accessible to the persons by whom the information or instructions may be required.

(3) The operator of every aircraft to which this paragraph applies shall:

(a) make available to the authorities or any authorized entity, a Maintenance and Engineering Manual approved by the Civil Aviation Authority of Macau;

(b) ensure that each copy of the Maintenance and Engineering Manual is kept up to date; and

(c) make sure that each Maintenance and Engineering Manual must contain all such information and instructions as may be necessary to enable the continuous airworthiness of the aircraft including, in particular, the information and instructions relating to the matters specified in Part E of the Ninth Schedule.

(4) The operator of the aircraft shall furnish the Civil Aviation Authority of Macau with a copy of the whole of the Operations Manual and the Maintenance and Engineering Manual for the time being in effect. The operator shall make such amendments or additions to manuals as the Civil Aviation Authority of Macau may require for the purpose of ensuring the safety of the aircraft or of any persons or property carried therein or the safety, efficiency or regularity of air navigation.

(5) For the purposes of this paragraph and the Ninth Schedule, "*operating staff*" means the employees and agents employed by the operator, whether or not as members of the crew of the aircraft, to ensure that the flights of the aircraft are conducted in a safe manner, and includes an operator who performs those functions.

(6) If in the course of a flight, the equipment, which is specified in Scale O in paragraph 5 of the Fifth Schedule, is required to be provided in an aircraft and the said equipment becomes unserviceable, the aircraft shall be operated for the remainder of the flight in accordance with any relevant instructions in the operations manual.

25. (1) The operator of every aircraft registered in Macau and flying for the purpose of public transport shall:

(a) make a training manual available to every person appointed by the operator to give or to supervise the training, experience, practice or periodical test required under paragraph 26 (2); and

(b) ensure that each copy of that training manual is kept up to date.

(2) Each training manual shall contain all such information and instructions as may be necessary to enable a person appointed by the operator to give or to supervise the training,

experience, practice and periodical tests required under paragraph 26 (2) to perform his duties as such including in particular information and instructions relating to the matters specified in Part C of the Ninth Schedule.

(3) (a) An aircraft to which this paragraph applies shall not fly unless not less than 30 days prior to such flight the operator of the aircraft has furnished to the Civil Aviation Authority of Macau a copy of the whole of his training manual relating to the crew of that aircraft.

(b) Subject to sub-paragraph (3) (c), any amendment or addition to the training manual shall be furnished to the Civil Aviation Authority of Macau by the operator before they come into effect.

(c) An amendment or addition relating to training, experience, practice or periodical tests on an aircraft shall not take effect until the amendment or addition has been furnished to the Civil Aviation Authority of Macau.

(d) Without prejudice to sub-paragraphs (1) and (2) the operator shall make such amendments or additions to the training manual as the Civil Aviation Authority of Macau may require for the purpose of ensuring the safety of the aircraft or of persons or property carried therein or the safety, efficiency or regularity of air navigation.

26. (1) The operator of a Macau registered aircraft shall not permit the aircraft to fly for the purpose of public transport without first:

(a) designating from among the flight crew a pilot to be the commander of the aircraft for the flight;

(b) satisfying himself by every reasonable means that the aeronautical radio stations and navigation aids serving the intended route or any planned diversion therefrom are adequate for the safe navigation of the aircraft; and

(c) satisfying himself by every reasonable means that the aerodrome at which it is intended to take off or land and any alternate aerodrome at which a landing may be made are suitable for the purpose and in particular are adequately manned and equipped including such manning and equipment as may be notified to ensure the safety of the aircraft and its passengers:

Provided that the operator of the aircraft shall not be required to satisfy himself as to the adequacy of firefighting, search, rescue or other services which are required only after the occurrence of an accident.

(2) The operator of a Macau registered aircraft shall not permit any person to be a member of the crew thereof during any flight for the purpose of public transport (except a flight for the sole purpose of training persons to perform duties in aircraft) unless such person has had the training, experience, practice and periodical tests specified in Part B of the Ninth Schedule in respect of the duties which he is to perform and unless the operator has satisfied

himself that such person is competent to perform his duties, and in particular to use the equipment provided in the aircraft for that purpose. The operator shall maintain, preserve, produce and furnish information respecting records relating to the foregoing matters in accordance with Part B of that Schedule.

(3) The operator of a Macau registered aircraft shall not permit any member of the flight crew thereof, during any flight for the purpose of the public transport of passengers to simulate emergency manoeuvres and procedures which will adversely affect the flight characteristics of the aircraft.

(4) The operator of a Macau registered aircraft shall adopt a security programme and shall ensure that such a programme is compatible with any aerodrome security programme.

27. (1) The operator of a Macau registered aircraft shall not cause or permit it to be loaded or any load to be suspended therefrom for a flight for the purpose of public transport except under the supervision of a person whom he has caused to be furnished with written instructions as to the distribution and securing of the load so as to ensure that:

(a) the load may safely be carried on the flight; and

(b) any conditions subject to which the Certificate of Airworthiness in force in respect of the aircraft was issued or rendered valid, being conditions relating to the loading of the aircraft, are complied with.

(2) The instructions shall indicate the weight of the aircraft prepared for service, that is to say the aggregate of the basic weight (shown in the weight schedule referred to in paragraph 16) and the weight of such additional items in or on the aircraft as the operator thinks fit to include; and the instructions shall indicate the additional items included in the weight of the aircraft prepared for service, and shall show the position of the centre of gravity of the aircraft at that weight:

Provided that this sub-paragraph shall not apply in relation to a flight if:

(a) the aircraft's maximum total weight authorised does not exceed 1,150 kg; or

(b) the aircraft's maximum total weight authorised does not exceed 2,730 kg and the flight is intended not to exceed 60 minutes in duration and is either:

(i) a flight solely for training persons to perform duties in an aircraft;
or

(ii) a flight intended to begin and end at the same aerodrome.

(3) The operator of an aircraft shall not cause or permit it to be loaded in contravention of the instructions referred to in sub-paragraph (1).

(4) The person supervising the loading of the aircraft shall, before the commencement of any such flight, prepare and sign a load sheet in duplicate conforming to the requirements

specified in sub-paragraph (6) and shall (unless he is himself the commander of the aircraft) submit the load sheet for examination by the commander of the aircraft who shall upon being satisfied that the aircraft is loaded in the manner required by sub-paragraph (1) sign his name thereon:

Provided that the foregoing requirements of this paragraph shall not apply if:

(a) the load and the distributing and securing thereof upon the next intended flight are to be unchanged from the previous flight and the commander of the aircraft makes and signs an endorsement to that effect upon the load sheet for the previous flight, indicating the date of the endorsement, the place of departure upon the next intended flight and the next intended place of destination; or

(b) sub-paragraph (2) does not apply in relation to the flight.

(5) One copy of the load sheet shall be carried in the aircraft when paragraph 55 so requires until the flights to which it relates have been completed and one copy of that load sheet and of the instructions referred to in this paragraph shall be preserved by the operator until the expiration of a period of 6 months thereafter and shall not be carried in the aircraft.

(6) Every load sheet required by sub-paragraph (4) shall contain the following particulars:

(a) the mark of origin of the aircraft to which the load sheet relates, and the registration mark assigned to that aircraft by the Civil Aviation Authority of Macau;

(b) particulars of the flight to which the load sheet relates;

(c) the total weight of the aircraft as loaded for that flight;

(d) the weight of the several items from which the total weight of the aircraft, as so loaded, has been calculated including in particular the weight of the aircraft prepared for service and the respective total weights of the passengers, crew, baggage and cargo intended to be carried on the flight; and

(e) the manner in which the load is distributed and the resulting position of the centre of gravity of the aircraft which may be given approximately if and to the extent that the relevant Certificate of Airworthiness so permits,

and shall include at the foot or end of the load sheet a certificate signed by the person referred to in sub-paragraph (1) as responsible for the loading of the aircraft, that the aircraft has been loaded in accordance with the written instructions furnished to him by the operator of the aircraft pursuant to that sub-paragraph.

(7) For the purpose of calculating the total weight of the aircraft the respective total weights of the passengers and crew entered in the load sheet shall be computed from the actual weight of each person and for that purpose each person shall be separately weighed:

Provided that in the case of an aircraft with a total seating capacity of 12 or more persons and subject to sub-paragraph (8), the weights may be calculated according to the included table

TABLE

(a) Males	75 kg
(b) Females	65 kg
(c) Children aged two and above but not exceeding 12 years of age	40 kg
(d) Infants under two years of age	10 kg

and the load sheet shall bear a notation to that effect.

(8) The commander of the aircraft shall, if in his opinion it is necessary to do so in the interests of the safety of the aircraft, require any or all of the passengers and crew to be actually weighed for the purpose of the entry to be made in the load sheet.

(9) The operator of an aircraft registered in Macau and flying for the purpose of the public transport of passengers shall not cause or permit baggage to be carried in the passenger compartment of the aircraft unless such baggage can be properly secured and, in the case of an aircraft capable of seating more than 30 passengers, such baggage shall not exceed the capacity of the spaces in the passenger compartment approved by the Civil Aviation Authority of Macau for the purpose of stowing baggage.

28. (1) No Macau registered aircraft shall be flown for the purpose of public transport, unless such requirements as are prescribed in respect of its weight and related performance have been complied with.

(2) The assessment of the ability of an aircraft to comply with sub-paragraph (1) shall be based on the information as to its performance contained in the Certificate of Airworthiness relating to the aircraft. In the event of the information given therein being insufficient for that purpose such assessment shall be based on the best information available to the commander of the aircraft.

(3) The requirements specified in Part D of the Ninth Schedule in respect of the weather conditions required for take off, approach to landing and landing shall be complied with in respect of every aircraft to which paragraph 24 applies.

(4) An aircraft registered in Macau when flying over water for the purpose of public transport shall fly, except as may be necessary for the purpose of take off or landing, at such an altitude as would enable the aircraft

(a) if it has one engine only, in the event of the failure of that engine; and

(b) if it has more than one engine, in the event of the failure of one of those engines and with the remaining engine or engines operating within the maximum continuous power conditions specified in the Certificate of Airworthiness relating to the aircraft,

to reach a place at which it can safely land at a height sufficient to enable it to do so.

(5) Except under and in accordance with the terms of any written permission granted by the Civil Aviation Authority of Macau to the operator, a Macau aeroplane having two power units and a maximum total weight authorised exceeding 5,700 kg and which is not limited by its certificate of airworthiness to the carriage of fewer than 20 passengers, shall not fly for the purpose of public transport unless it will, in the meteorological conditions expected for the flight, at any point along the route or any planned diversion therefrom, not be more than 60 minutes flying time at the normal one engine inoperative cruise speed in still air from the nearest aerodrome.

29. (1) A public transport aircraft not registered in Macau shall not fly in or over Macau unless the operator thereof shall have furnished to the Civil Aviation Authority of Macau such particulars as he may from time to time require relating to the aerodrome operating minima specified by the operator in relation to the Macau International Airport for the purpose of limiting their use by the aircraft for take off or landing, including any instruction given by the operator in relation to such weather conditions. The aircraft shall not fly in or over Macau unless the operator shall have made such amendments of or additions to the aerodrome operating minima so specified and shall comply with any instruction given by the Civil Aviation Authority of Macau for the purpose of ensuring the safety of the aircraft or the safety, efficiency or regularity of air navigation.

(2) A public transport aircraft not registered in Macau shall not begin or end a flight at the Macau International Airport in aerodrome operating minima less favourable than those so specified in the Ninth Schedule in relation to that aerodrome, or in contravention of the instructions referred to in sub-paragraph (1).

(3) Without prejudice to sub-paragraph (2), a public transport aircraft not registered in Macau shall not commence or continue an approach to landing at the Macau International Airport if the runway visual range at that aerodrome is at that time less than the relevant minimum for landing established in accordance with sub-paragraph (1).

(4) For the purposes of this paragraph, "*runway visual range*", in relation to a runway or landing strip, means the range over which the pilot of an aircraft on the centreline of a runway can see runway surface markings or the lights delineating the runway or identifying its centreline or, in the case of the Macau International Airport, the distance, if any, communicated to the commander of the aircraft by or on behalf of the person in charge of the aerodrome as being the runway visual range.

30. The commander of a Macau registered aircraft shall satisfy himself before the aircraft takes off:

(a) that the flight can safely be made, taking into account the latest information available as to the route and aerodromes to be used, the weather reports and forecasts available, and any alternative course of action which can be adopted in case the flight cannot be completed as planned;

(b) (i) that the equipment (including radio equipment) required by or under this Regulation to be carried in the circumstances of the intended flight is carried and is in a fit and legal condition for use; or

(ii) that the flight may commence under and in accordance with the terms of a permission granted to the operator pursuant to paragraph 14;

(c) that the aircraft is in every way fit for the intended flight, and that where certificates of maintenance review are required by paragraph 9 (1) to be in force, they are in force and will not cease to be in force during the intended flight;

(d) that the load carried by the aircraft is of such weight, and is so distributed and secured, and it may safely be carried on the intended flight;

(e) in the case of a power-driven aircraft or airship, that sufficient fuel, oil and engine coolant (if required) are carried for the intended flight, and that a safe margin has been allowed for contingencies, and in the case of a flight for the purpose of public transport, that the instructions in the operations manual relating to fuel, oil and engine coolant have been complied with;

(f) in the case of an aircraft, that having regard to the performance of the aircraft in the conditions to be expected on the intended flight, and to any obstructions at the places of departure and intended destination and on the intended route, it is capable of safely taking off, reaching and maintaining a safe height thereafter, and making a safe landing at the place of intended destination; and

(g) that any pre-flight check system established by the operator and set forth in the operations manual or elsewhere has been complied with by each member of the crew of the aircraft.

31. The commander of a Macau registered aircraft shall take all reasonable steps to ensure:

(a) before the aircraft takes off on any flight, that all passengers are made familiar with the position and method of use of emergency exits, safety belts (with diagonal shoulder strap, where required to be carried), safety harnesses and (where required to be carried) oxygen equipment and life-jackets and all other devices required by or under this Regulation and intended for use by passengers individually in the case of an emergency occurring to the aircraft;

(b) before the aircraft takes off on any flight, that all passengers are given specific warnings and take the appropriate actions to ensure that during certain stages of the flight no use can be made of certain electronic devices or any other personal belongings used by passengers individually which can possibly endanger the safety of the flight or its occupants; and

(c) in an emergency, that all passengers are instructed in the emergency action which they should take.

32. (1) The commander of a Macau registered aircraft, being an aircraft shall cause one pilot to remain at the controls at all times while the aircraft is in flight. If the aircraft is required by or under this Regulation to carry two pilots, the commander shall cause both pilots to remain at the controls during take off and landing. If the aircraft carries two or more pilots (whether or not it is required to do so) and is engaged on a flight for the purpose of the public transport of passengers the commander shall remain at the controls during take off and landing.

(2) Each pilot at the controls shall be secured in his seat by either a safety belt with or without one diagonal shoulder strap, or a safety harness except that during take off and landing a safety harness shall be worn if it is required by paragraph 12 to be provided.

33. (1) This paragraph shall apply to flights for the purpose of the public transport of passengers by a Macau registered aircraft.

(2) In relation to every flight to which this paragraph applies, the commander of the aircraft shall:

(a) (i) if the aircraft is not a seaplane but is intended in the course of the flight to reach a point more than 30 minutes flying time (while flying in still air at the speed specified in the relevant certificate of airworthiness as the speed for compliance with regulations governing flights over water) from the nearest land, take all reasonable steps to ensure that before take off all passengers are given a demonstration of the method of use of the life-jackets required by or under this Regulation for the use of passengers;

(ii) if the aircraft is not a seaplane but is required by paragraph 18 (8) to carry cabin attendants, take all reasonable steps to ensure that, before the aircraft takes off on a flight:

(A) which is intended to proceed beyond gliding distance from land; or

(B) on which in the event of any emergency occurring during the take off or during the landing at the intended destination or any likely alternate destination it is reasonably possible that the aircraft would be forced to land onto water,

all passengers are given a demonstration of the method of use of the life-jackets required by or under this Regulation for the use of passengers except that where the only requirement to give such a demonstration arises because it is reasonably possible that the aircraft would be forced to land onto water at one or more of the likely alternate destinations the demonstration need not be given until after the decision has been taken to divert to such a destination;

(b) if the aircraft is a seaplane, take all reasonable steps to ensure that before the aircraft takes off all passengers are given a demonstration of the method of use of the equipment referred to in sub-paragraph (2) (a);

(c) before the aircraft takes off, and before it lands, take all reasonable steps to ensure that the crew of the aircraft are properly secured in their seats and that all persons carried in compliance with paragraph 18 (8) are properly secured in seats which shall be in a passenger compartment and which shall be so situated that those persons can readily assist passengers;

(d) before the aircraft takes off, and before it lands, and whenever by reason of turbulent air or any emergency occurring during flight he considers the precaution necessary:

(i) take all reasonable steps to ensure that all passengers of two years of age or more are properly secured in their seats by safety belts (with diagonal shoulder strap, where required to be carried) or safety harnesses and that all passengers under the age of two years are properly secured by means of a child restraint device; and

(ii) take all reasonable steps to ensure that those items of baggage in the passenger compartment which he reasonably considers ought by virtue of their size, weight and nature to be properly secured are properly secured and, in the case of an aircraft capable of seating more than 30 passengers, that such baggage is stowed in the passenger compartment stowage spaces approved by the Civil Aviation Authority of Macau for the purpose;

(e) except in a case where a pressure greater than 700 millibars is maintained in all passenger and crew compartments throughout the flight, take all reasonable steps to ensure that:

(i) before the aircraft reaches flight level 100 the method of use of the oxygen provided in the aircraft in compliance with the requirements of paragraph 12 is demonstrated to all passengers;

(ii) when flying above flight level 120 all passengers and cabin attendants are recommended to use oxygen;

(iii) during any period when the aircraft is flying above flight level 100 oxygen is used by all the flight crew of the aircraft.

34. (1) Subject to the provisions of this paragraph, the operator of a Macau registered aircraft which may require an approved method of flight supervision must do so by using the service of holders of licensed flight operations officers.

(2) The Civil Aviation Authority of Macau may grant a license subject to such conditions as he thinks fit to any person to act as a flight operations officer, upon his being satisfied that the applicant is a fit person, of an adequate age, knowledge, experience, competence and skills so to act, and for that purpose the applicant shall furnish such evidence and undergo such examinations and tests as the Civil Aviation Authority of Macau may require of him:

(a) Provided that the Civil Aviation Authority of Macau will not grant a flight operations officer license to a person under the age of 21 years;

(b) Provided that the applicant meet the requirements laid down in the Fourth Schedule of this Regulation.

(3) Every license issued by the Civil Aviation Authority of Macau which authorizes a person to act as a flight operations officer shall be valid for the sole purpose of entitling the respective holder to accomplish flight operations dispatchment tasks.

(4) After an applicant has successfully completed an approved training course or met any other requirements regarding the necessary experience mentioned in the Fourth Schedule of this Regulation, he has to serve under the supervision of a licensed flight operations officer for a probation period not less than 90 days within the six months immediately preceding the application.

(5) Subject to the provisions of paragraph 59 of this Regulation, a license to act as a flight operations officer shall remain in force for the period indicated in the license and may be renewed by the Civil Aviation Authority of Macau according to the revalidation period put forward in the Fourth Schedule of this Regulation, upon being satisfied that the applicant is a capable person and is qualified aforesaid.

35. (1) The radio station in an aircraft shall not be operated, whether or not the aircraft is in flight, except in accordance with the conditions of the license issued in respect of that station under the law of the country or territory in which the aircraft is registered, and by a person duly licensed or otherwise permitted to operate the radio station under the law.

(2) Whenever an aircraft is in flight in such circumstances that it is required by this Regulation to be equipped with radio communication equipment, a continuous radio watch shall be maintained by a member of the flight crew listening to the signals transmitted upon the frequency notified, or designated by a message received from an appropriate or aeronautical radio station, for use by that aircraft:

Provided that:

(a) the radio watch may be discontinued or continued on another frequency to the extent that a message as aforesaid so permits or for reasons of safety; and

(b) the watch may be kept by a device installed in the aircraft if:

(i) the appropriate aeronautical radio station has been informed to that effect and has raised no objection; and

(ii) that the station is notified or in the case of a station not situated in Macau, otherwise designated as transmitting a signal suitable for that purpose.

(3) The radio station in an aircraft shall not be operated so as to cause interference which would impair the efficiency of aeronautical telecommunications or navigational services, and in particular emissions shall not be made except as follows:

(a) emissions of the class and frequency for the time being in use, in accordance with general international aeronautical practice, in the airspace in which the aircraft is flying;

(b) distress, urgency and safety messages and signals, in accordance with general international aeronautical practice;

(c) messages and signals relating to the flight of the aircraft, in accordance with general international aeronautical practice;

(d) such public correspondence messages as may be permitted by or under the aircraft radio station license referred to in sub-paragraph (1).

(4) In every Macau registered aircraft which is equipped with radio communications equipment a telecommunications log book shall be kept in which the following entries shall be made:

(a) the identification of the aircraft radio station;

(b) the date and time of the beginning and end of every radio watch maintained in the aircraft and of the frequency on which it was maintained;

(c) the date and time, and particulars of all messages and signals sent or received, including in particular details of any distress traffic sent or received;

(d) particulars of any action taken upon the receipt of a distress signal or message; and

(e) particulars of any failure or interruption of radio communications and the cause thereof.

Provided that a telecommunications log book shall not be required to be kept in respect of communication by radiotelephony with a radio station on land or on a ship which provides a radio service for aircraft.

(5) The flight radio operator maintaining radio watch shall sign the entries in the telecommunication log book indicating the times at which he began and ended the maintenance of such watch.

(6) The telecommunication log book shall be preserved by the operator of the aircraft until a date 6 months after the date of the last entry therein.

(7) In any Macau registered aircraft which is engaged on a flight for the purpose of public transport, the pilot and the flight engineer (if any) shall not make use of a hand-held microphone (whether for the purpose of radio communication or of intercommunication within the aircraft) whilst the aircraft is flying in controlled airspace at an altitude less than 15,000 feet above mean sea level or is taking-off or landing.

36. (1) Subject to the provisions of this paragraph, an aeronautical radio station can only be operated by a duly licensed operator.

(2) The Civil Aviation Authority may grant a license subject to such conditions as he thinks fit to any person to act as an aeronautical station operator, upon his being satisfied that the applicant is a fit person, with an adequate age, knowledge, experience, competence and skill so to act, and for that purpose the applicant shall furnish such evidence and undergo such examinations and tests as the Civil Aviation Authority of Macau may require of him:

responsible for its prompt and accurate amendment. The distribution list should include all key maintenance and servicing personnel as well as flight engineers and others requiring the information therein for proper performance of their duties. Those parts of the Manual required to be carried on board each aircraft should be designated for convenient use and all parts should permit ready and accurate reference.

TENTH SCHEDULE

(Paragraphs 55 and 57)

DOCUMENTS TO BE CARRIED BY AIRCRAFT REGISTERED IN MACAU

1. On a flight for the purpose of public transport:

Documents A, B, C, D, E, F, H and, if the flight is international air navigation, Documents G and I.

2. On a flight for the purpose of aerial work:

Documents A, B, C, D, E, F and, if the flight is international air navigation, Documents G and I

3. On a flight, being international air navigation, for a purpose other than public transport or aerial work:

Documents A, B, C, G and I.

4. On a flight made in accordance with the terms of a permission granted to the operator pursuant to paragraph 14 of the Regulation:

Document J.

5. For the purposes of this Schedule:

"A" means the license in force in respect of the aircraft radio station installed in the aircraft, and the current telecommunications log book required by the Regulation;

"B" means the Certificate of Airworthiness in force in respect of the aircraft;

"C" means the licenses of the members of the flight crew of the aircraft;

"D" means one copy of the load sheet, if any, required by paragraph 27 of the Regulation in respect of the flight;

"E" means one copy of each certificate of maintenance review, if any, in force in respect of the aircraft;

"F" means the technical log referred to in paragraph 9 (7) of the Regulation;

"G" means the certificate of registration in force in respect of the aircraft;

"H" means the operations manual, if any, required by paragraph 24 (2) (a) (ii) of the Regulation to be carried on the flight;

"I" means a copy of the notified procedures to be followed by the pilot-in-command of an intercepted aircraft, and the notified visual signals for use by intercepting and intercepted aircraft;

"International air navigation" means any flight which includes passage over the territory of any country or territory other than Macau; and

"J" means the permission, if any, granted in respect of the aircraft pursuant to paragraph 14 except that, with the permission in writing of the chief executive officer, which may be granted subject to such conditions as he thinks fit, an aircraft to which paragraph 24 applies need not carry such a permission if it carries an operations manual which includes the particulars specified in paragraph 1 (v) of Part A of the Ninth Schedule.

ELEVENTH SCHEDULE

(Paragraph 61)

RULES OF THE AIR AND AIR TRAFFIC CONTROL

PART I - INTERPRETATION

1. In these Rules, unless the context otherwise requires:

"*aerodrome reference point*" means the notified geographical location of an aerodrome;

"*air traffic control clearance*" means authorisation by an air traffic control unit for an aircraft to proceed under conditions specified by that unit;

"*anti-collision light*" means a flashing red or flashing white light showing in all directions for the purpose of enabling the aircraft to be more readily detected by the pilots of distant aircraft;

"*apron*" means the part of an aerodrome provided for the stationing of aircraft for the embarkation and disembarkation of passengers, the loading and unloading of cargo and for parking;

"*cloud ceiling*" in relation to an aerodrome means the distance measured vertically from the notified elevation of that aerodrome to the lowest part of any cloud visible from the aerodrome which is sufficient to obscure more than one-half of the sky so visible;

"ground visibility" means the horizontal visibility at ground level;

"IFR flight" means a flight conducted in accordance with the Instrument Flight Rules in Part VI of these Rules;

"manoeuvring area" means that part of an aerodrome provided for the take-off and landing of aircraft and for the movement of aircraft on the surface, excluding the apron and any part of the aerodrome provided for the maintenance of aircraft;

"runway" means an area, whether or not paved, which is provided for the take-off or landing run of aircraft;

"VFR flight" means a flight conducted in accordance with the Visual Flight Rules in Part V of these Rules.

PART II - GENERAL

Application of Rules to Aircraft.

2. These Rules, insofar as they are applicable in relation to aircraft, shall, subject to rule 26, apply in relation to:

- (a) all aircraft whilst in Macau; and
- (b) all Macau registered aircraft, wherever they may be.

Misuse of Signals and Markings.

3. (1) A signal marking to which a meaning is given by these Rules, or which is required by these Rules to be used in circumstances or for a purpose therein specified, shall not be used except with that meaning, or for that purpose.

(2) A person in an aircraft or on an aerodrome or at any place at which an aircraft taking off or landing shall not make any signal which may be confused with a signal specified in these Rules.

Reporting Hazardous Conditions.

4. The commander of an aircraft shall, on meeting with hazardous conditions in the course of a flight, or as soon as possible thereafter, send to the appropriate air traffic control unit by the quickest means available information containing such particulars of the hazardous conditions as may be pertinent to the safety of other aircraft.

Low Flying.

5. (1) Subject to paragraphs (2) and (3):

(a) an aircraft, other than a helicopter, shall not fly over any congested area of a city, town or settlement below:

(i) such height as would enable the aircraft to alight clear of the area and without danger to persons or property on the surface, in the event of failure of a power unit; or

(ii) a height of 450 mts. (1,500 feet) above the highest fixed object within 600 mts. (2,000 feet) of the aircraft, whichever is the higher;

(b) a helicopter shall not fly below such height as would enable it to alight without danger to persons or property on the surface, in the event of failure of a power unit;

(c) except with the permission in writing of the Civil Aviation Authority of Macau and in accordance with any conditions therein specified a helicopter shall not fly:

(i) over a congested area of a city, town or settlement, below a height of 450 mts. (1,500 feet) above the highest fixed object within 600 mts. (2,000 feet) of the helicopter; or

(ii) over any area notified for the purpose of this sub-paragraph, below such height as would enable it to alight clear

(d) an aircraft shall not fly:

(i) over, or within 900 mts. (3,000 feet) of any assembly in the open air of more than 1,000 persons assembled for the purpose of witnessing or participating in any organised event, except with the permission in writing of the Civil Aviation Authority of Macau and in accordance with any conditions therein specified and with the consent in writing of the organisers of the event; or

(ii) below such height as would enable it to alight clear of the assembly in the event of failure of a power unit:

Provided that where a person is charged with an offence under the Regulation by reason of a contravention of this sub-paragraph, it shall be a good defence to prove that the flight of the aircraft over or within 900 mts. (3,000 feet) of the assembly was made at a reasonable height and for a reason not connected with the assembly or with the event which was the occasion for the assembly;

(e) an aircraft shall not fly closer than 150 mts. (500 feet) to any person, vessel, vehicle or structure;

(2) (a) sub-paragraph (1) (d) and (e) shall not apply to an aircraft which is being used for police purposes.

(b) sub-paragraph (1) (d) and (e) shall not apply to the flight of an aircraft over or within 900 mts. (3,000 feet) of an assembly of persons gathered for the purpose of witnessing an event which consists wholly or principally of an aircraft race or contest or an exhibition of flying, if the aircraft is taking part in such a race, contest or exhibition or is engaged in a flight arranged by, or made with the consent in writing of, the organisers of the event, and the races, contest, exhibition or flight are approved by the Civil Aviation Authority of Macau.

(c) sub-paragraph (1) (e) shall not apply to any aircraft while it is landing or taking off in accordance with normal aviation practice.

(d) The alternatives in sub-paragraphs (1) (a) (ii) and (1) (c) (i) shall not apply to an aircraft flying:

(i) on a route notified for the purposes of this rule; or

(ii) on a special VFR flight as defined in rule 19 in accordance with instructions given for the purposes of that rule by the appropriate air traffic control unit.

(3) Nothing in this rule shall prohibit any aircraft from:

(a) taking off, landing or practising approaches to landing; or

(b) flying for the purpose of checking navigational aids or procedures in accordance with normal aviation practice at a licensed aerodrome in Macau or at any aerodrome in any Contracting State; or

(c) flying in such a manner as may be necessary for the purpose of saving life:

Provided that in the case of practising approaches to landing as aforesaid such practising is confined to the airspace customarily used by aircraft when landing or taking off in accordance with normal aviation practice at the aerodrome concerned.

Simulated Instrument Flight.

6. An aircraft shall not be flown in simulated instrument flight conditions unless:

(a) the aircraft is fitted with dual controls which are functioning properly;

(b) an additional pilot (referred to in this rule as a safety pilot) is carried in a second control seat of the aircraft for the purpose of rendering such assistance as may be necessary to the pilot flying the aircraft; and

(c) if the safety pilot's field of vision is not adequate both forward and to each side of the aircraft, a third person, being an observer approved by the Civil Aviation Authority of Macau, shall occupy a position in the aircraft from which his field of vision makes good the deficiencies of the field of vision of the safety pilot, and from which he can readily communicate with the safety pilot.

For the purposes of this rule the expression "*simulated instrument flight*" means a flight during which mechanical or optical devices are used in order to reduce the field of vision or the range of visibility from the cockpit of the aircraft.

Practice Instrument Approaches.

7. Within Macau, an aircraft shall not carry out instrument approach practice when flying in Visual Meteorological Conditions unless:

- (a) the appropriate air traffic control unit has previously been informed that the flight is to be made for the purpose of instrument approach practice; and
- (b) if the flight is not being carried out in simulated instrument flight conditions, an observer approved by the Civil Aviation Authority of Macau is carried in such a position in the aircraft that he has an adequate field of vision and can readily communicate with the pilot flying the aircraft.

PART III - LIGHTS AND OTHER SIGNALS TO BE SHOWN BY AIRCRAFT

General.

8. (1) For the purpose of this Part the horizontal plane of a light shown by an aircraft means the plane which would be the horizontal plane passing through the source of that light, if the aircraft were in level flight.

(2) Where by reason of the physical construction of an aircraft it is necessary to fit more than one lamp in order to show a light required by this part of these Rules, the lamps shall be so fitted and constructed that, so far as is reasonably practicable, not more than one such lamp is visible from any one point outside the aircraft.

(3) Where in these Rules a light is required to show through specified angles in the horizontal plane, the lamps giving such light shall be so constructed and fitted that the light is visible from any point in any vertical plane within those angles throughout angles of 90° above and below the horizontal plane, but, so far as is reasonably practicable, through no greater angle, either in the horizontal plane or the vertical plane.

(4) Where in these Rules a light is required to show in all directions the lamps giving such light shall be so constructed and fitted that, so far as is reasonably practicable, the light is visible from any point in the horizontal plane and on any vertical plane passing through the source of that light.

Display of Lights by Aircraft.

9. (1) By night an aircraft shall display such of the lights specified in these Rules as may be appropriate to the circumstances of the case, and shall not display any other lights which might obscure or otherwise impair the visibility of, or be mistaken for, such lights:

Provided that nothing in this paragraph shall prevent the display of an anti-collision light.

- (2) An aircraft on a land aerodrome in Macau at which aircraft normally land or take off at night shall, unless it is stationary on a part of the aerodrome set aside for the embarkation or disembarkation of passengers, the loading or unloading of cargo or the maintenance or parking of aircraft, display by night either the lights which it would be required to display if it were flying, or the lights specified in rule 11 (2) (a) and (c).

Failure of Navigation Lights.

10. In Macau, in the event of the failure of any light which is required by these Rules to be displayed in flight, if the light cannot be immediately repaired or replaced the aircraft shall land as soon as in the opinion of the commander of the aircraft it can safely do so, unless authorised by the appropriate air traffic control unit to continue its flight.

Aircraft.

11. (1) An aircraft when flying at night shall display lights as follows:

(a) in the case of an aircraft registered in Macau having a maximum total weight authorised of more than 5,700 kg, it shall display the system of lights specified in paragraph 2 (b);

(b) in the case of an aircraft registered in Macau having a maximum total weight authorised of 5,700 kg or less, any one of the following systems of lights:

(i) that specified in paragraph (2) (a);

(ii) that specified in paragraph (2) (b); or

(iii) that specified in paragraph (2) (d) excluding paragraph (2) (d) (ii);
and

(c) in the case of any other aircraft one of the systems of lights specified in paragraph (2).

(2) The systems of lights referred to in paragraph (1) are as follows:

(a) (i) a green light of at least 5 candela showing to the starboard side through an angle of 110° from dead ahead in the horizontal plane;

(ii) a red light of at least 5 candela showing to the port side through an angle of 110° from dead ahead in the horizontal plane; and

(iii) a white light of at least 3 candela showing through angles of 70° from dead astern to each side in the horizontal plane, all being steady lights;

- (b) (i) the lights specified in sub-paragraph (a); and
- (ii) an anti-collision light;
- (c) the lights specified in sub-paragraph (a), but all being flashing lights flashing together; and
- (d) the lights specified in sub-paragraph (a), but all being flashing lights flashing together in alternation with one or both of the following:
 - (i) a flashing white light of at least 20 candela showing in all directions;
 - (ii) a flashing red light of at least 20 candela showing through angles of 70° from dead astern to each side in the horizontal plane.

(3) If the lamp showing either the red or the green light specified in paragraph (2) (a) is fitted more than two metres from the wing tip, a lamp may, notwithstanding rule 9 (1), be fitted at the wing tip to indicate its position, showing a steady light of the same colour through the same angle.

PART IV - GENERAL FLIGHT RULES

Weather Reports and Forecasts.

12. (1) Immediately before an aircraft flies, the commander of the aircraft shall examine the current reports and forecasts of the weather conditions on the proposed flight path, being reports and forecasts which it is reasonably practicable for him to obtain in order to determine whether Instrument Meteorological Conditions prevail or are likely to prevail during any part of the flight.

(2) An aircraft which is unable to communicate by radio with an air traffic control unit at the aerodrome of destination shall not begin a flight to an aerodrome within a control zone if the information obtained by the commander of the aircraft indicates that it will arrive at that aerodrome when the ground visibility is less than 8 km or the cloud ceiling is less than 1,500 feet, unless the commander of the aircraft has obtained from an air traffic control unit at that aerodrome permission to enter the aerodrome traffic zone.

Rules for Avoiding Aerial Collisions.

General.

13. (1) (a) Notwithstanding that the flight is being made with air traffic control clearance it shall remain the duty of the commander of an aircraft to take all possible measures to ensure that his aircraft does not collide with any other aircraft.

(b) An aircraft shall not be flown in such proximity to other aircraft as to create a danger of collision.

(c) Aircraft shall not fly in formation unless the commanders of the aircraft have agreed to do so.

(d) An aircraft which is obliged by these Rules to give way to another aircraft shall avoid passing over or under the other aircraft, or crossing ahead of it, unless passing well clear of it.

(e) An aircraft which has the right of way under this rule shall maintain its course and speed.

Converging.

(2) (a) Subject to paragraphs (3) and (4), an aircraft in the air shall give way to other converging aircraft as follows:

(i) power-driven aircraft shall give way to airships, gliders and balloons;

(ii) airships shall give way to gliders and balloons; and

(iii) gliders shall give way to balloons.

(b) Subject to sub-paragraph (a), when two aircraft are converging in the air at approximately the same altitude, the aircraft which has the other on its right shall give way:

Provided that mechanically driven aircraft shall give way to aircraft which are towing other aircraft or objects.

Approaching Head-on.

(3) When two aircraft are approaching head-on or approximately so in the air and there is danger of collision, each shall alter its course to the right.

Overtaking.

(4) An aircraft which is being overtaken in the air shall have the right of way and the overtaking aircraft, whether climbing, descending or in horizontal flight, shall keep out of the way of the other aircraft by altering course to the right, and shall not cease to keep out of the way of the other aircraft until that other aircraft has been passed and is clear, notwithstanding any change in the relative positions of the two aircraft.

Landing.

(5) An aircraft while landing on a final approach to land shall have the right of way over other aircraft in flight or on the ground or water.

Two or More Aircraft Landing.

(6) In the case of two or more aeroplanes approaching any place for the purpose of landing, the aircraft at the lower altitude shall have the right of way, but it shall not cut in front of another aircraft which is on final approach to land or overtake that aircraft:

Provided that:

(a) when an air traffic control unit has communicated to any aircraft an order of priority for landing, the aircraft shall approach to land in that order; and

(b) when the commander of an aircraft is aware that another aircraft is making an emergency landing, he shall give way to that aircraft, and at night, notwithstanding that he may have received permission to land, shall not attempt to land until he has received further permission to do so.

Aerobatic Manoeuvres.

14. An aircraft shall not carry out any aerobatic manoeuvre:

(a) over the congested area of any city, town or settlement; or

(b) within controlled airspace except with the consent of the appropriate air traffic control unit.

Right-hand Traffic Rule.

15. An aircraft which is flying within Macau in sight of the ground and following a road or coastline, or any other line of landmarks, shall keep such line of landmarks on its left.

Verification of Flight and Arrival.

16. (1) Before commencing a flight for the purpose of public transport over an area notified for the purpose of this rule as an area in which search and rescue operations would be difficult, the commander of an aircraft shall submit or cause to be submitted to the appropriate air traffic control unit a flight notification containing such particulars as may be specified.

(2) Before commencing a flight for a purpose other than public transport over an area notified in accordance with paragraph (1), the commander of the aircraft may submit or cause to be submitted for the appropriate air traffic control unit a flight notification containing such particulars as may be specified.

(3) When a flight notification has been submitted in accordance with paragraph (1) or (2), the commander of an aircraft able to communicate by radio with the appropriate air traffic control unit or aeronautical radio station shall also comply with rule 24 as if the flight were an IFR flight.

(4) The commander of an aircraft complying with the requirements of paragraph (3) shall, if he finds it necessary to deviate from any particular route specified in the flight notification, report by radio to the appropriate air traffic control unit or aeronautical radio station the nature of the deviation.

(5) The commander of an aircraft in respect of which a flight notification, in accordance with paragraph (1) or (2), or a flight plan in accordance with rule 23 (1), has been submitted, shall take all reasonable steps in accordance with notified procedures to ensure upon landing that notice of the arrival of the aircraft is given to the air traffic control unit notified for this purpose.

(6) The commander of an aircraft required to comply with paragraph (5), or if he has caused notice of its intended arrival at an aerodrome to be given to the air traffic control unit or other authority at that aerodrome, shall ensure that the air traffic control unit notified for the purpose of paragraph (5) or the air traffic control unit or other authority at the aerodrome is informed as quickly as possible of any changes of intended destination and any estimated delay in arrival of 30 minutes or more.

(7) Nothing in this rule shall relieve the commander of an aircraft of the obligations imposed on him by rule 31 (3).

Flight in Notified Airspace.

17. In relation to flights in Visual Meteorological Conditions in controlled airspace notified for purpose of this rule, the commander of an aircraft shall comply with rules 23, 24 and 25 as if the flights were IFR flights:

Provided that the commander of the aircraft shall not elect to continue the flight in compliance with the Visual Flight Rules for the purposes of rule 23 (3).

Choice of VFR or IFR.

18. Subject to rule 17, an aircraft shall always be flown in accordance with the Visual Flight Rules or the Instrument Flight Rules:

Provided that in Macau an aircraft flying at night shall be flown in accordance with the Instrument Flight Rules, or, in a control zone, in accordance with the Instrument Flight Rules or the proviso to rule 19 (b).

PART V - VISUAL FLIGHT RULES

19. The Visual Flight Rules shall be as follows:

(a) An aircraft intending to operate under Visual Flight Rules shall maintain a flight visibility of at least 8 kilometres and remain at least 1.5 kilometres horizontally and 1,000 feet vertically clear of cloud in the following area:

- (i) within controlled airspace; and
- (ii) outside controlled airspace above 3,000 feet.

(b) An aircraft flying at speeds of 140 knots or less may operate under Visual Flight Rules at or below 3,000 feet outside controlled airspace with a flight visibility of at least 1.5 kilometres. An aircraft flying at speeds above 140 knots may operate under Visual Flight Rules with a flight visibility of at least 5 kilometres. In both cases, the aircraft shall remain clear of cloud and in sight of ground or water.

(c) A helicopter may operate with a flight visibility below 1.5 kilometres if manoeuvred at a speed that will give adequate opportunity to observe other traffic or any obstructions in time to avoid collision.

PART VI - INSTRUMENT FLIGHT RULES

20. The Instrument Flight Rules shall be as follows:

- (a) outside controlled airspace - in relation to flights outside controlled airspace rules 21 and 22 shall apply; and
- (b) within controlled airspace - in relation to flights within controlled airspace rules 21, 23, 24 and 25 shall apply.

Minimum Height.

21. Without prejudice to rule 5, in order to comply with the Instrument Flight Rules an aircraft shall not fly at a height of less than 1,000 feet above the highest obstacle within a distance of 5 nautical miles of the aircraft unless otherwise authorised by the competent authority or unless it is necessary to do so in order to take off or land.

Quadrantal Rule.

22. In order to comply with the Instrument Flight Rules an aircraft when in level flight at or above a notified height outside controlled airspace shall be flown at a level appropriate to its magnetic track, in accordance with the appropriate table set forth in this rule. The level of flights shall be measured by an altimeter set according to the system notified, or in the case of flight over a country or territory other than Macau, otherwise published by the competent authority, in relation to the area over which the aircraft is flying.

Table I - Flights at Levels Below 29,000 Feet

<i>Magnetic Track</i>	<i>Cruising Level</i>
Less than 90°	Odd thousands of feet
90° but less than 180°	Odd thousands of feet + 500 feet
180° but less than 270°	Even thousands of feet
270 ° hut less than 360°	Even thousands of feet + 500 feet

Note: Quadrantal Rules apply only below FL 250. Above this level semi-circular flight rules apply.

Within controlled airspaces at all levels and outside controlled airspaces above FL 250, semi-circular rules apply in accordance with the following:

Table II - TRACK (MAGNETIC)

FL	000°-179° IFR Flights Altitude (Feet)	VFR Flights Altitude (Feet)	FL	180°-359° IFR Flights Altitude (Feet)	VFR Flights Altitude (Feet)
10	1,000	---	20	2,000	---
30	3,000	3,500	40	4,000	4,500
50	5,000	5,500	60	6,000	6,500
70	7,000	7,500	80	8,000	8,500
90	9,000	9,500	100	10,000	10,500
110	11,000	11,500	120	12,000	12,500
130	13,000	13,500	140	14,000	14,500
150	15,000	15,500	160	16,000	16,500
170	17,000	17,500	180	18,000	18,500
190	19,000	19,500	200	20,000	20,500
210	21,000	21,500	220	22,000	22,500
230	23,000	23,500	240	24,000	24,500
250	25,000	25,500	260	26,000	26,500

FL	000°-179° IFR Flights Altitude (Feet)	VFR Flights Altitude (Feet)	FL	180°-359° IFR Flights Altitude (Feet)	VFR Flights Altitude (Feet)
270	27,000	27,500	280	28,000	28,500
290	29,000	30,000	310	31,000	32,000
330	33,000	34,000	350	35,000	36,000
370	37,000	38,000	390	39,000	40,000
410	41,000	42,000	430	43,000	44,000
450	45,000	46,000	470	47,000	48,000
490	49,000	50,000	510	51,000	52,000
etc.	etc.	etc.	etc.	etc.	etc.

Flight Plan and Air Traffic Control Clearance.

23. (1) In order to comply with the Instrument Flight Rules, before an aircraft either takes off from a point within any controlled airspace or enters any controlled airspace the commander of the aircraft shall cause a flight plan to be communicated to the appropriate air traffic control unit and shall obtain an air traffic control clearance based on such flight plan.

(2) The flight plan shall contain such particulars of the intended flight as may be necessary to enable the air traffic control unit to issue an air traffic control clearance or for search and rescue purposes.

(3) The commander of the aircraft shall fly in conformity with the air traffic control clearance issued for the flight as amended by any further instructions given by an air traffic control unit and with the holding and instrument approach procedures, notified in relation to the aerodromes of destination unless:

(a) he is able to fly in uninterrupted Visual Meteorological Conditions for so long as he remains in controlled airspace; and

(b) he has informed the appropriate air traffic control unit of his intention to continue the flight in compliance with Visual Flight Rules and has requested that unit to cancel his flight plan:

Provided that if an emergency arises which requires an immediate deviation from an air traffic control clearance, the commander of the aircraft shall, as soon as possible, inform the appropriate air traffic control unit of the deviation.

(4) The commander of the aircraft after it has flown in controlled airspace shall, unless he has requested the appropriate air traffic control unit to cancel his flight plan, forthwith inform that unit when the aircraft lands within or leaves the controlled airspace.

Position Reports.

24. In order to comply with the Instrument Flight Rules the commander of an aircraft in IFR flight who flies in or is intending to enter controlled airspace shall report to the appropriate air traffic control unit the time and the position and altitude of the aircraft at such reporting points or at such intervals of time as may be notified for this purpose or as may be directed by the air traffic control unit.

Communication Failure.

25. In order to comply with the Instrument Flight Rules the commander of an aircraft flying in controlled airspace who is unable to establish or maintain two-way communication with the appropriate air traffic control unit shall:

(a) continue to fly to his destination, if it is possible to do so by flying only in conditions not inferior to those specified in rule 19 (b);

(b) if he has received and acknowledged an air traffic control clearance to fly to his destination or to enter the controlled airspace in which it lies, and sufficient navigational assistance is obtainable to enable him to comply with such clearance:

(i) continue to fly in compliance with the current flight plan to the holding point at the aerodrome of destination, maintaining the last acknowledged cruising levels for the portion of the route for which levels have been specified in the clearance, and thereafter the cruising levels shown in the flight plan;

(ii) arrange the flight to arrive over the holding point as closely as possible to the last acknowledged estimated time of arrival;

(iii) begin to descend over the holding point at the last acknowledged expected approach time, or, if no such expected approach time has been acknowledged the last acknowledged estimated time of arrival;

(iv) land within 30 minutes of the time at which the descent should have been started; or

(c) if he is unable to comply with the provisions of paragraph (a) or (b), leave or avoid controlled airspace either:

(i) fly to an area in which flight may be continued in Visual Meteorological Conditions, and land at an aerodrome there; or

(ii) select a suitable area in which to descend through cloud, and land at an aerodrome there.

PART VII - AERODROME TRAFFIC RULES*Application of Aerodrome Traffic Rules.*

26. The rules in this section which are expressed to apply to power-driven aircraft shall also be observed, so far as practicable, in relation to all other aircraft.

Visual Signals.

27. The commander of an aeroplane on, or in the traffic zone of an aerodrome shall observe such visual signals as may be displayed at, or directed to him from, the aerodrome by the authority of the person in charge of the aerodrome and shall obey any instruction which may be given to him by means of such signals:

Provided that he shall not be required to obey the signals referred to in rule 39 if in his opinion it is inadvisable to do so in the interests of safety.

Access to and Movement on the Manoeuvring Area and other Parts of the Aerodrome.

28. (1) A person or vehicle shall not go into any part of an aerodrome provided for the use of aircraft and under the control of the person in charge of the aerodrome without the permission of the person in charge of the aerodrome, and except in accordance with any conditions subject to which that permission may have been granted.

(2) A vehicle shall not move on the manoeuvring area of an aerodrome having an air traffic control unit without the permission of that unit, and except in accordance with any conditions subject to which that permission may have been granted.

(3) Any permission granted for the purposes of this rule may be granted either in respect of persons or vehicles generally, or in respect of any particular person or vehicle or any class of person or vehicle.

Right of Way on the Ground.

29. (1) This rule shall apply to:

(a) aircraft; and

(b) vehicles,

on any part of a land aerodrome provided for the use of aircraft and under the control of the person in charge of the aerodrome.

(2) Notwithstanding any air traffic control clearance it shall remain the duty of the commander of an aircraft to take all possible measures to ensure that his aircraft does not collide with any other aircraft or with any vehicle.

(3) (a) Aircraft and vehicles shall give way to aircraft which are taking off or landing.

(b) Vehicles and aircraft which are not taking off or landing shall give way to vehicles towing aircraft.

(c) Vehicles which are not towing aircraft shall give way to aircraft.

(4) Subject to paragraph (3) and rule 31 (3) (b), in case of danger of collision between two aircraft:

(a) when the two are approaching head-on or approximately so, each shall alter its course to the right;

(b) when the two aircraft are on converging courses, the one which has the other on its right shall give way to the other and shall avoid crossing ahead of the other unless passing well clear of it; and

(c) an aircraft which is being overtaken shall have the right of way, and the overtaking aeroplane shall keep out of the way of the other aeroplane by altering its course to the left until that other aeroplane has been passed and is clear, notwithstanding any change in the relative positions of the two aeroplanes.

(5) Subject to paragraph (3) (b) a vehicle shall:

(a) overtake another vehicle so that the other vehicle is on the left of the overtaking vehicle; and

(b) keep to the left when passing another vehicle which is approaching head-on or approximately so.

Dropping of Tow Ropes, etc.

30. Tow ropes, banners or similar articles towed by aircraft shall not be dropped from aircraft except at an aerodrome and:

(a) in accordance with arrangements made with an air traffic control unit at the aerodrome or, if there is no such unit, with the person in charge of the aerodrome; or

(b) in the area designated by the marking described in rule 36 (7) and the ropes, banners or similar articles shall be dropped when the aircraft is flying in the direction appropriate for landing.

Aerodromes Not Having Air Traffic Control Units.

31. (1) An aircraft shall not fly within a zone which the commander knows or ought reasonably to know to be the aerodrome traffic zone of an aerodrome which does not have an air traffic control unit, except for the purpose of taking off, and landing or observing the signals in the signals area with a view to landing. An aircraft flying within such a zone for the purpose of observing the signals shall remain clear of cloud and at least 500 feet above the level of the aerodrome.

(2) The commander of an aircraft flying in such a zone or moving on such an aerodrome shall:

- (a) conform to the pattern of traffic formed by other aircraft, or keep clear of the airspace in which the pattern is formed;
 - (b) make all turns to the left unless ground signals otherwise indicate; and
 - (c) take off and land in the direction indicated by the ground signals or, if no such signal is displayed, into the wind, unless good aviation practice demands otherwise.
- (3)
 - (a) An aircraft shall not land on a runway at such an aerodrome unless the runway is clear of other aircraft.
 - (b) Where take-offs and landings are not confined to a runway:
 - (i) an aircraft when landing shall leave clear on its left any aircraft which has already landed or is already landing or is about to take off; if such aircraft is obliged to turn, it shall turn to the left after the commander of the aircraft has satisfied himself that such action will not interfere with other traffic movements; and
 - (ii) an aircraft about to take off shall take up position and manoeuvre in such a way as to leave clear on its left any aircraft which is already taking off or is about to take off.
- (4) An aircraft after landing shall move clear of the landing area in use as soon as it is possible to do so.

Aerodrome With An Air Traffic Control Unit.

32. (1) An aircraft shall not fly within a zone which the commander of the aircraft knows or ought reasonably to know to be the aerodrome traffic zone with an air traffic control unit except for the purpose of taking off, landing or observing the signals in the signals area with a view to landing, unless he has the permission of the appropriate air traffic control unit.
- (2) The commander of an aircraft flying in the aerodrome traffic zone with an air traffic control unit or moving on the manoeuvring area of such an aerodrome shall:
- (a) cause a continuous watch to be maintained on the appropriate radio frequency notified for air traffic control communications at the aerodrome, or if this is not possible, cause a watch to be kept for such instructions as may be issued by visual means;
 - (b) not taxi, take-off or land except with the permission of the air traffic control unit; and
 - (c) comply with rule 31 (1), (2), (3) and (4) as if the aerodrome did not have an air traffic control unit, unless he has the permission of the air traffic control unit, at the aerodrome, or has been instructed by such unit, to do otherwise.

- (3) Without prejudice to rules 16 and 23 the commander of an aircraft shall, immediately upon arrival at, or prior to departure from an aerodrome within Macau, ensure that the appropriate air traffic control unit is informed of the flight which he has just made or which he is about to undertake.

PART VIII - AERODROME SIGNALS AND MARKINGS

VISUAL AND AURAL SIGNALS

General.

33. (1) Whenever any signal specified in this section is given or displayed, or whenever any marking so specified is displayed, by any person in an aircraft, or at an aerodrome, or at any other place which is being used by aircraft for landing or take-off, it shall, when given or displayed in Macau, have the meaning assigned to it in this section.

- (2) All dimensions specified in this section shall be subject to a tolerance of 10% plus or minus.

Signals in the Signals Area.

34. (1) When any signal specified in the following paragraphs is displayed it shall be placed in a signals area, which shall be a square visible in all directions bordered by a white strip 30 centimetres wide the internal sides measuring 12 metres.

- (2) A white landing T, as illustrated in this paragraph, means that aeroplanes taking off or landing shall do so in a direction parallel with the shaft of the T and towards the cross arm, unless otherwise authorised by the appropriate air traffic control unit.

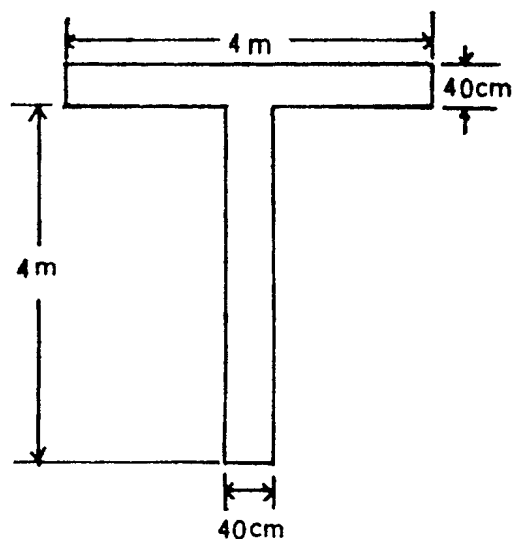


Figure 1

- (3) A white disc 60 centimetres in diameter displayed alongside the cross arm of the T and in line with the shaft of the T, as illustrated in this paragraph, means that the direction of landing and take-off do not necessarily coincide.

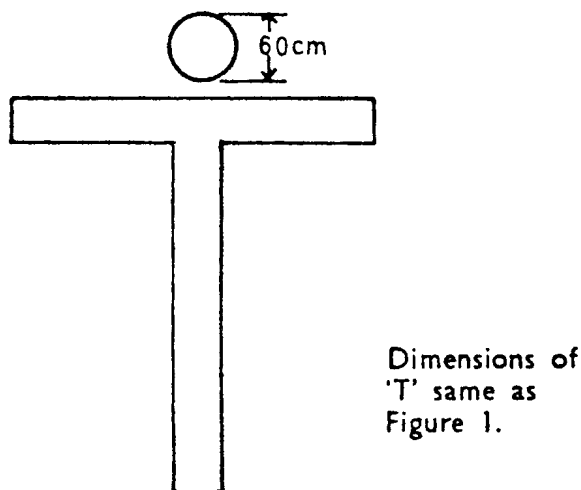


Figure 2

- (4) A white dumb-bell, as illustrated in this paragraph, means that movements of aeroplanes on the ground shall be confined to paved, metalled or similar hard surfaces.

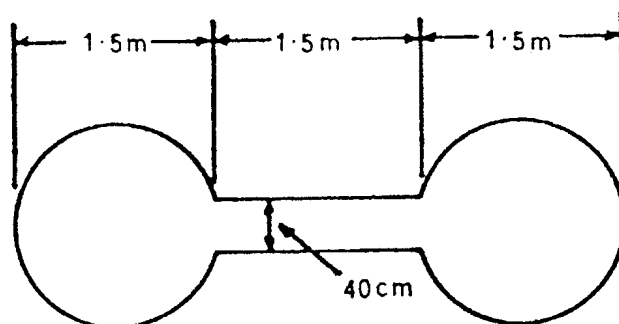


Figure 3

- (5) A white dumb-bell as described in paragraph (4) but with a black stripe 60 centimetres wide across each disc at right angles to the shaft of the dumb-bell, as illustrated in this paragraph, means that aeroplanes taking off or landing shall do so on a runway but that movement on the ground is not confined to paved, metalled or similar hard surfaces.

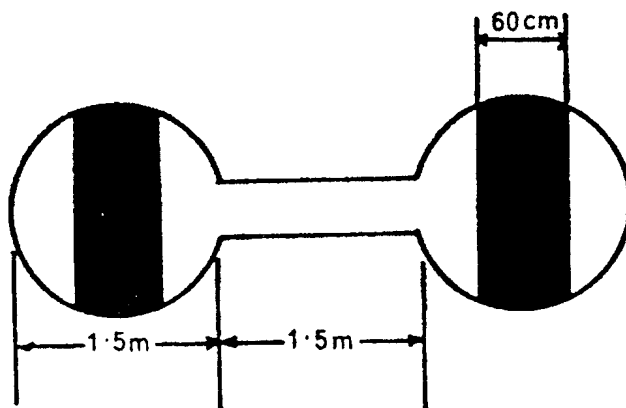


Figure 4

- (6) A red and yellow striped arrow, as illustrated in this paragraph, the shaft of which is at least one metre wide placed along the whole or not less than a total of 11 metres of two adjacent sides of the signals area and pointing in a clockwise direction means that a right-hand circuit is in force.

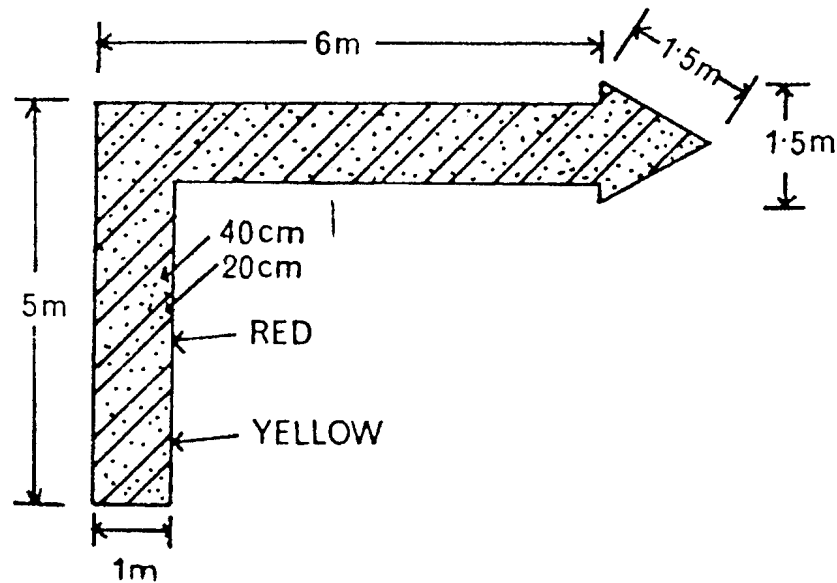


Figure 5

- (7) A red panel 3 metres square with a yellow stripe along one diagonal at least 50 centimetres wide, as illustrated in this paragraph, means that the state of the manoeuvring area is poor and pilots must exercise special care when landing.

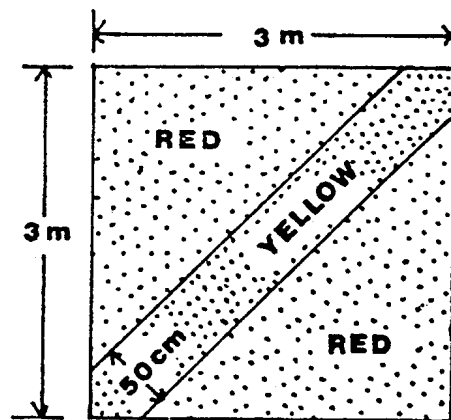


Figure 6

- (8) A red panel 3 metres square with a yellow stripe, at least 50 centimetres wide, along each diagonal, as illustrated in this paragraph, means that the aerodrome is unsafe for the movement of aircraft and that landing on the aerodrome is prohibited.

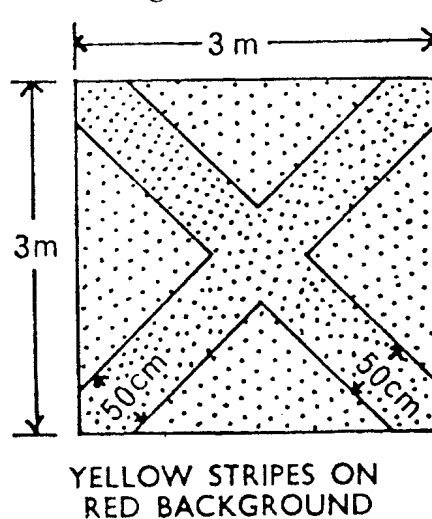


Figure 7

- (9) A white letter H, as illustrated in this paragraph, means that helicopters shall take off and land only within the area designated by the marking specified in rule 36 (5).

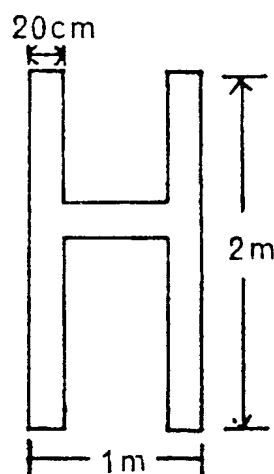


Figure 8

- (10) A red letter L displayed on the dumb-bell specified in paragraphs (4) and (5), as illustrated in this paragraph, means that light aircraft are permitted to take off and land either on a runway or on the area designated by the marking specified in rule 36 (6).

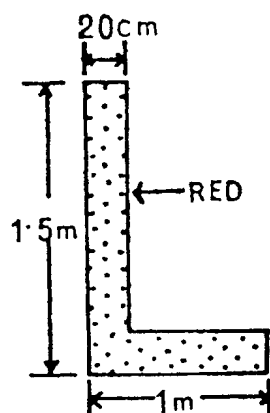


Figure 9

Markings for Paved Runways and Taxiways.

35. (1) Two or more white crosses, as illustrated in this paragraph, displayed on a runway or taxiway, with the arms of the crosses at an angle of 45° to the centre line of the runway, at intervals of not more than 300 metres signify that the section of the runway or taxiway marked by them is unfit for the movement of aircraft.

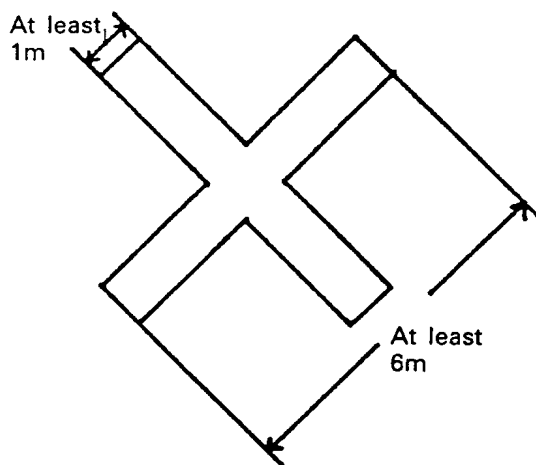


Figure 10

(2) A broken white line and a continuous line, as illustrated in this paragraph, signify a holding position beyond which no part of an aircraft or vehicle shall project in the direction of the runway without permission from an air traffic control unit.

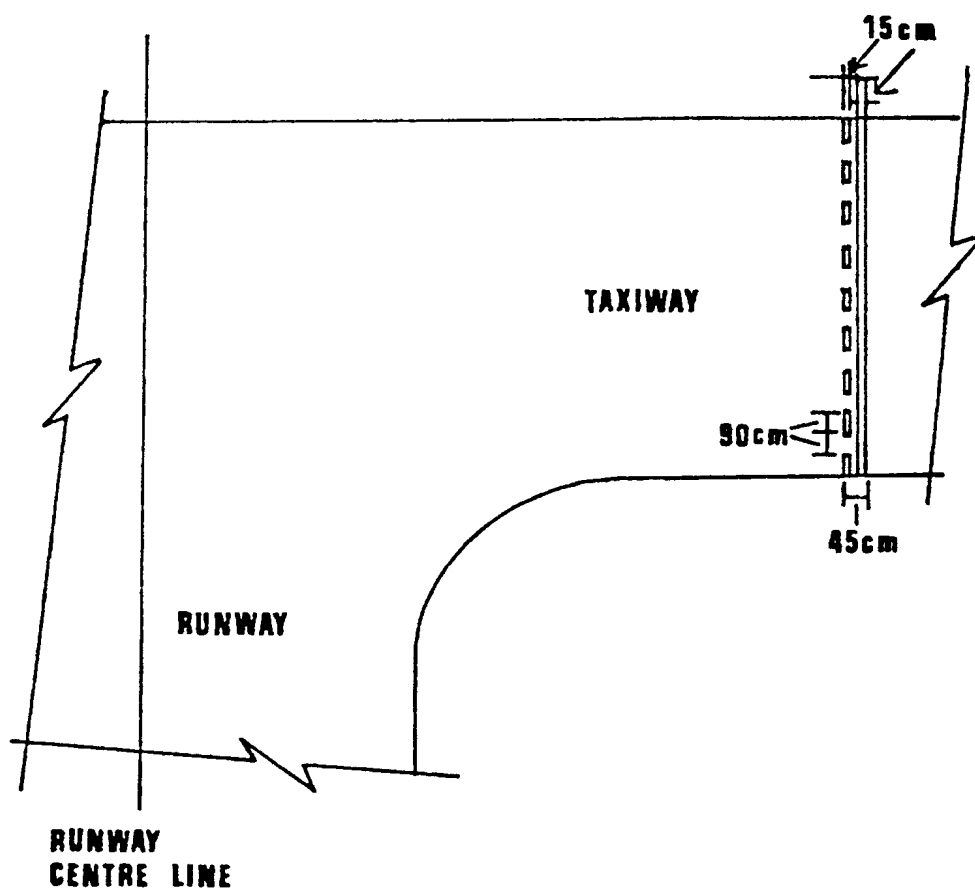


Figure 11

- (3) Orange and white markers, as illustrated in this paragraph, spaced not more than 15 metres apart, signify the boundary of that part of a paved runway, taxiway or apron which is unfit for the movement of aircraft.

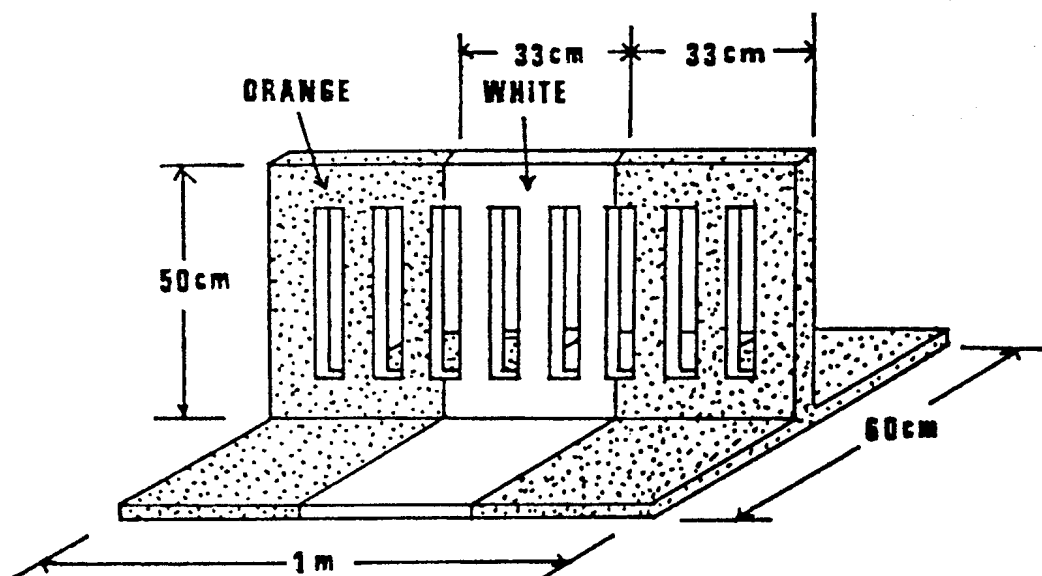


Figure 12

Markings on Unpaved Manoeuvring Areas.

36. (1) Markers with orange and white stripes of an equal width of not less than 50 centimetres, with an orange stripe at each end, as illustrated in this paragraph, alternating with flags not less than 60 centimetres square showing equal orange and white triangular areas, indicate the boundary of an area unfit for the movement of aircraft and one or more white crosses as specified in rule 35 (1) indicate the said area. The distance between any two successive orange and white flags shall not exceed 90 metres.

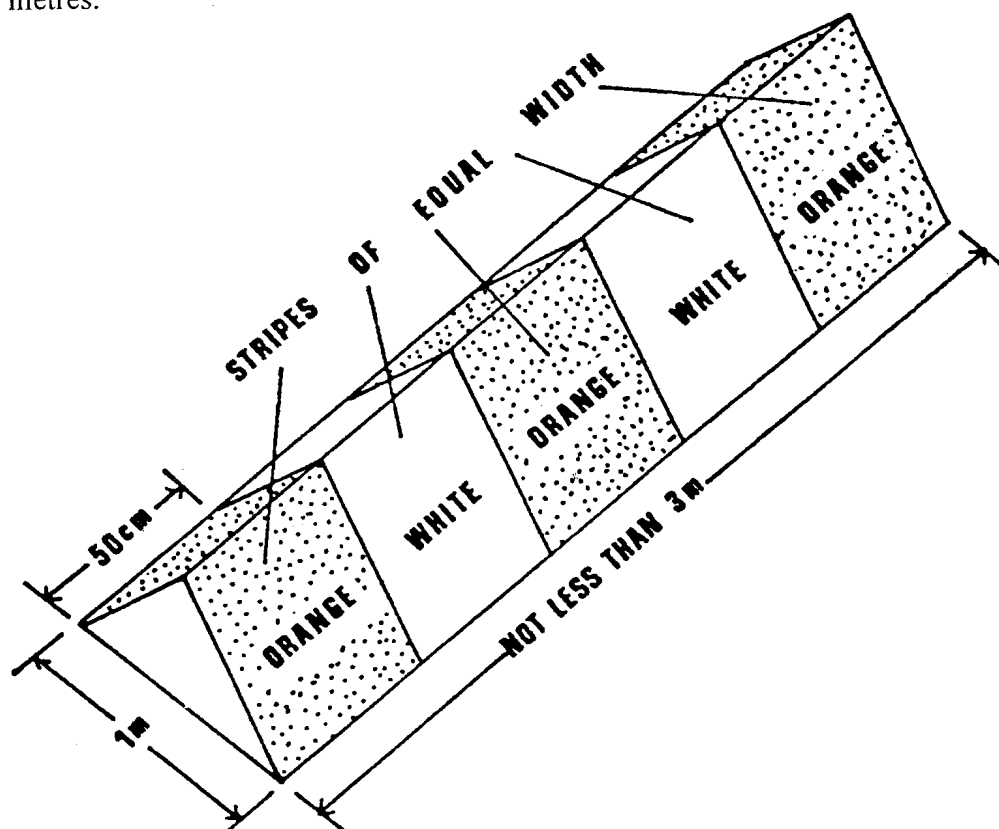


Figure 13

(2) Striped markers, as specified in paragraph (1), spaced not more than 45 metres apart, indicate the boundary of an aerodrome.

(3) On structures, markers with orange and white vertical stripes, of an equal width of not less than 50 centimetres, with an orange stripe at each end, as illustrated in this paragraph, spaced not more than 45 metres apart, indicate the boundary of an aerodrome. The pattern of the marker shall be visible from inside and outside the aerodrome and the marker shall be affixed not more than 15 centimetres from the top of the structure.

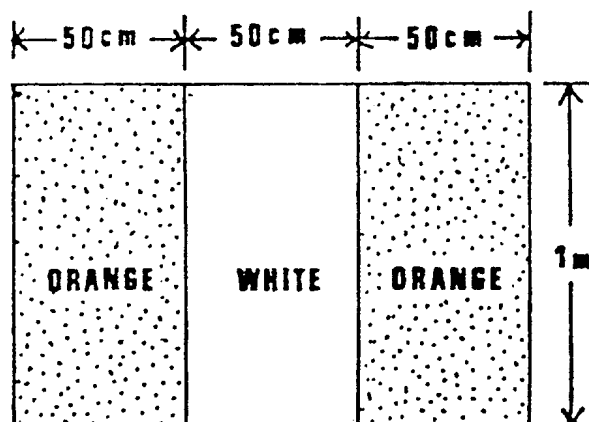


Figure 14

(4) White flat rectangular markers 3 metres long and one metre wide at intervals not exceeding 90 metres, flush with the surface of the unpaved runway or stopway, as the case may be, indicate the boundary of an unpaved runway or of a stopway.

(5) A white letter H, as illustrated in this paragraph, indicates an area which shall be used only for the taking off and landing of helicopters.

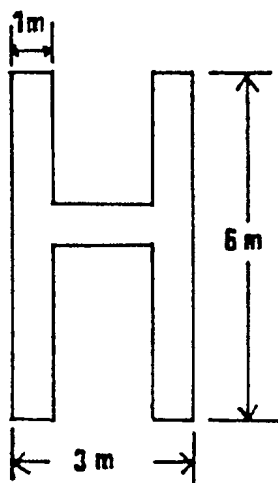


Figure 15

- (6) A white letter L as illustrated in this paragraph, indicates a part of the manoeuvring area which shall be used only for the taking off and landing of light aircraft.

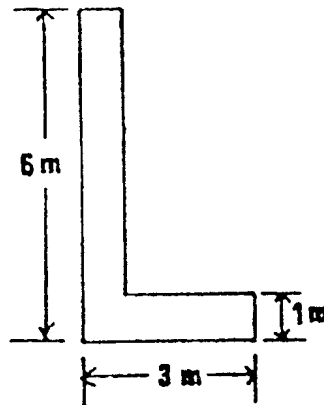


Figure 16

- (7) A yellow cross with two arms 6 metres long by 1 metre wide at right angles, indicates that tow ropes and similar articles towed by aircraft shall only be dropped in the area in which the cross is placed.

- (8) A white landing T as specified in rule 34 (2) placed at the left hand side of the runway when viewed from the direction of landing indicates the runway to be used.

Signals Visible from the Ground.

- 37 (1) A black ball 60 centimetres in diameter suspended from a mast means that the directions of take-off and landing are not necessarily the same.

- (2) A checkered flag or board, 1.2 metres by 90 centimetres containing 12 equal squares, 4 horizontally and 3 vertically, coloured red and yellow alternatively, means that aerodrome traffic on the manoeuvring area is subject to control by means of the lights and pyrotechnic signals referred to in rule 38.

- (3) Two red balls 60 centimetres in diameter, disposed vertically one above the other, 60 centimetres apart and suspended from a mast, signify that glider flying is in progress at the aerodrome.

- (4) Black arabic numerals in two-figure groups and, where parallel runways are provided the letter or letters L (Left), LC (Left Centre), C (Centre), RC (Right Centre) and R (Right), placed against a yellow background, indicate the direction for take-off or the runway in use.

- (5) A black letter C against a yellow background, as illustrated in this paragraph, indicates the position at which a pilot can report to the air traffic control unit or to the person in charge of the aerodrome.

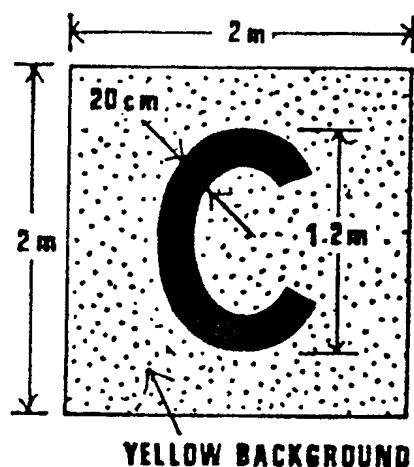


Figure 17

- (6) A rectangular green flag of not less than 60 centimetres square flown from a mast indicates that a right-hand circuit is in force.

Lights and Pyrotechnic Signals for Control of Aerodrome Traffic.

38. Each signal described in the first column of Table A, when directed from an aerodrome to an aircraft or to a vehicle, or from an aircraft, shall have the meanings respectively appearing in the second, third and fourth columns of that Table opposite the description of the signal.





TABLE A

<i>Characteristic and colour of light beam or pyrotechnic</i>	<i>From an aerodrome</i>		<i>From an aircraft in flight to an aerodrome</i>
	<i>to an aircraft in flight</i>	<i>to an aircraft or vehicle on the aerodrome</i>	
(a) Continuous red light	Give way to other aircraft and continue circling	Stop	----
(b) Red pyrotechnic light, or Red flare	Do not land; wait for permission	----	Immediate assistance is required
(c) Red flashes	Do not land; aerodrome not available for landing	Move clear of landing area	----
(d) Green flashes	Return to aerodrome; wait for permission to approach and land	To an aircraft: You may move on the manoeuvring area and apron;	----

<i>Characteristic and colour of light beam or pyrotechnic</i>	<i>From an aerodrome</i>		<i>From an aircraft in flight to an aerodrome</i>
	<i>to an aircraft in flight</i>	<i>to an aircraft or vehicle on the aerodrome</i>	
		To a vehicle: You may move on the manoeuvring area	
(e) Continuous green light	You may land	You may take off (not applicable to a vehicle)	-----
(f) Continuous green light or green flashes, or green pyrotechnic light	-----	-----	<u>By night:</u> May I land? <u>By day:</u> May I land in direction different from that indicated by landing T?
(g) White flashes	Land at this aerodrome after receiving continuous green light, and then, after receiving green flashes, proceed to the apron	Return to starting point on the aerodrome	I am compelled to land immediately
(h) White pyrotechnic lights, switching on and off the navigation lights, or switching on and off the landing lights	-----	-----	I am compelled to land immediately

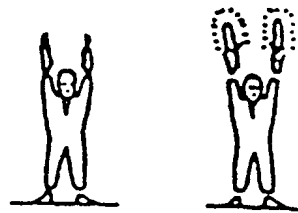
39. Signals for the guidance of aircraft manoeuvring on or off the ground shall, in Macau, have the meaning as shown in Table B. By day any such signals shall be given by hand or by round bats and by night by torches or illuminated wands.

TABLE B - MEANING OF MARSHALLING SIGNALS (Rule 39)

1. To proceed under further guidance by signalman		
Signalman directs pilot if traffic conditions on aerodrome require this action.		

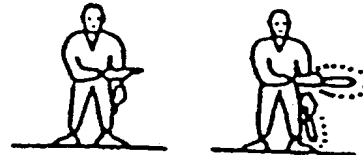
2. This bay

Arms above head in vertical position with palms facing inward.



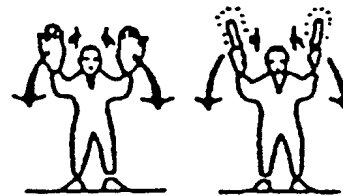
3. Proceed to next signalman

Right or left arm down, other arm moved across the body and extended to indicate direction of next signalman.



4. Move ahead

Arms little aside, palms facing backward and repeatedly moved upward-backward from shoulder height.

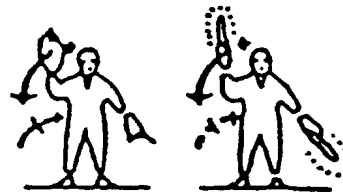


5. Turn

a) *Turn to your left*: right arm downward, left arm repeatedly moved upward-backward. Speed of arm movement indicating rate of turn.

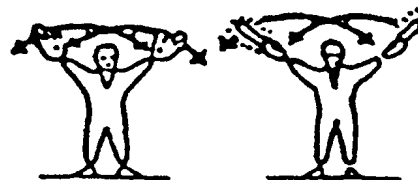


b) *Turn to your right*: left arm downward, right arm repeatedly moved upward-backward. Speed of arm movement indicating rate of turn.



6. Stop

Arms repeatedly crossed above head (the rapidity of the arm movement should be related to the urgency of the stop i.e. the faster the movement the quicker the stop).



7. Brakes

a) *Engage brakes*: raise arm and bend, with fingers extended, horizontally in front of body, then clench fist.

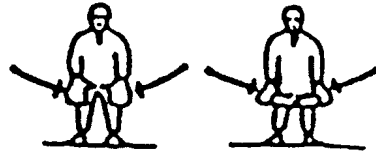


b) *Release brakes*: raise arm, with fist clenched, horizontally in front of body, then extend fingers.

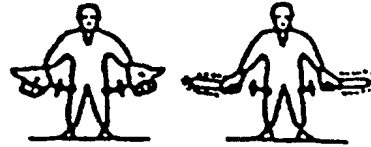


8. Choks

a) *Choks inserted*: arms down, palms facing inwards, move arms from extended position inwards.



b) *Choks removed*: arms down, palms facing outwards, move arms outwards.



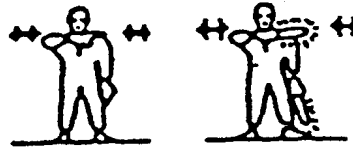
9. Start engine(s)

Left hand overhead with appropriate number of fingers extended, to indicate the number of the engine to be started, and circular motion of right hand at head level.



10. Cut engine(s)

Either arm and hand level with shoulder, hand across throat, palm downward. The hand is moved sideways with the arm remaining bent.



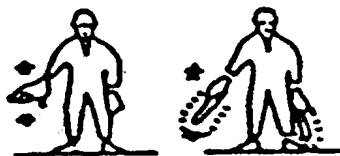
11. Slow down

Arms down with palms toward ground, then moved up and down several times.



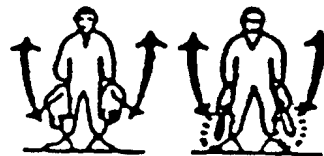
12. Slow down engine(s) on indicated side

Arms down with palms toward ground, then either right or left hand moved up and down indicating the left or right side engine(s) respectively should be slowed down.



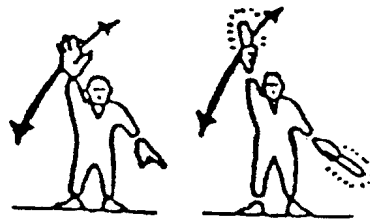
13. Move back

Arms by sides, palms facing forward, swept forward and upward repeatedly to shoulder height.

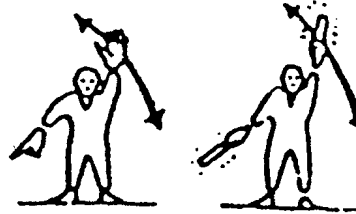


14. Turns while backing

a) *For tail to starboard*: point left arm down, and right arm brought from overhead, vertical position to horizontal forward position, repeating right arm movement.

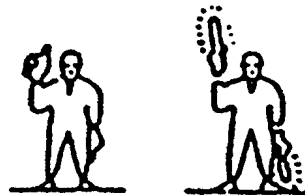


b) *For tail to port*: point right arm down, and left arm brought from overhead, vertical position to horizontal forward position, repeating left arm movement.



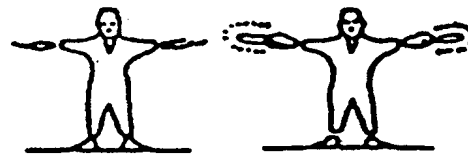
15. All clear

Right arm raised at elbow with thumb erect.



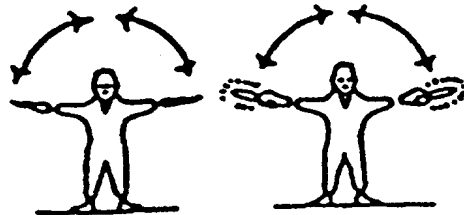
16. Hover*

Arms extended horizontally sideways.



17. Move upwards*

Arms extended horizontally to the side beckoning upwards, with palms turned up. Speed of movement indicates rate of ascent.



18. Move downwards*

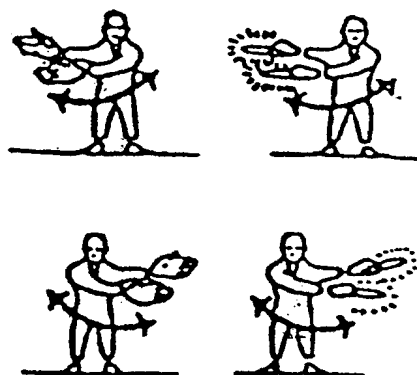
Arms extended horizontally to the side beckoning downwards, with palm turned down. Speed of movement indicates rate of descent.



* Only applicable to helicopters

19. Move horizontally*

Appropriate arm extended horizontally sideways in direction of movement and other arm moved in front of body in same direction, in a repeating movement.



20. Land*

Arms crossed and extended downwards in front of the body.



* Only applicable to helicopters

Marshalling Signals (from a pilot of an aircraft to a marshaller).

40. The following signals made by a pilot in an aircraft to a marshaller on the ground shall respectively have the following meanings:

<i>Description of Signal</i>	<i>Meaning of Signal</i>
(a) Raise arm and hand with fingers extended horizontally in front of, face, then clench fist	Brakes engaged.
(b) Raise arm with fist clenched horizontally in front of face, then extend fingers	Brakes released.
(c) Arms extended palms facing outwards, move hands inwards to cross in front of face	Insert chocks.
(d) Hands crossed in front of face, palms, facing outwards, move arms outwards	Remove chocks.

<i>Description of Signal</i>	<i>Meaning of Signal</i>
(e) Raise the number of fingers on one hand indicating the number of the engine to be started. For this purpose the aircraft engines shall be numbered in relation to the marshaller facing the aircraft, from his right to his left, for example, No. 1 engine shall be the port outer engine, No. 2 shall be the port inner engine, No. 3 engine shall be the starboard inner engine and No. 4 engine shall be the starboard outer engine	Ready to start engine.

Distress, Urgency and Safety Signals.

41. (1) The following signals, given either together or separately before the sending of a message, signify that an aircraft is threatened by grave and imminent danger and requests immediate assistance:

- (a) by radiotelephony - the spoken word "Mayday";
- (b) by visual signalling:
 - (i) the signal SOS (. . . - - - . . .);
 - (ii) a succession of pyrotechnic lights fired at short intervals each showing a single red light;
 - (iii) a parachute flare showing a red light;
- (c) by sound signalling other than radiotelephony:
 - (i) the signal SOS (. . . - - - . . .);
 - (ii) a continuous sounding with any sound apparatus.

(2) The following signals, given either together or separately, before the sending of a message, signify that the commander of the aircraft wishes to give notice of difficulties but that he does not require immediate assistance:

- (a) a succession of white pyrotechnic lights;
- (b) the repeated switching on and off of the aircraft landing lights;

(c) the repeated switching on and off of its navigation lights, in such a manner as to be clearly distinguishable from the flashing navigation lights described in rule 11.

(3) The following signals, given either together or separately, indicate that the commander of the aircraft has an urgent message to transmit concerning the safety of the aircraft or of any person or property:

(a) by radio telephony - the spoken word "PAN";

(b) by visual signalling:

(i) the signal XXX (- . . . - . . . - . . .);

(ii) a succession of green pyrotechnic lights;

(iii) a succession of green flashes;

(c) by sound signalling other than radiotelephony - the signal XXX (- . . . - . . . - . . .).

Warning Signals to Aircraft in Flight.

42. In Macau, the following signals shall respectively have the following meanings:

(a) by night - a series of projectiles discharged at intervals of 10 seconds, each showing on bursting white lights or stars, or an intermittent white luminous beam directed at the aircraft - indicates that the aircraft to which the signal is directed is in the vicinity of such an area as is referred to in paragraph 66 (1) of the Regulation and is required to change its course;

(b) by day or by night - a series of projectiles discharged at intervals of 10 seconds, each showing on bursting green lights or stars, indicates that the aircraft is required to land at the nearest aerodrome in accordance with paragraph 66 of the Regulation.

TWELFTH SCHEDULE

(Paragraph 80)

FEEES

The contents of this Schedule will be published in a separate ordinance according to the terms of the Decree-Law n° 36/95/M from 7th August.

THIRTEENTH SCHEDULE

(Paragraph 83)

PENALTIES

The contents of this Schedule will be published in a separate ordinance according to the terms of the Decree-Law n° 36/95/M from 7th August.

FOURTEENTH SCHEDULE

(Paragraphs 20, 62 (7) and (8))

MEDICAL REQUIREMENTS

1. Medical requirements for the grant and renewal of licences to members of flight crew and air traffic controllers in Macau.

The following are the medical requirements prescribed by the Civil Aviation Authority of Macau, necessary for the grant and renewal of licences to members of flight crew and air traffic controllers in Macau. A person applying in Macau for the grant or renewal of a license to act either as member of the operating crew of an aircraft, or an air traffic controller, shall be required to undergo a medical examination to ascertain whether his health condition conforms with the standard of fitness, i.e. physical, visual, colour perception and hearing, applicable to the case, as specified in paragraph 10 of this Schedule. The examination will be based upon the requirements specified in paragraphs 11 to 29 of this Schedule:

Provided that:

(a) an applicant who does not satisfy the appropriate medical requirements may, at the discretion of the Civil Aviation Authority of Macau, be accepted as eligible for the grant or renewal of a license so far as medical requirements are concerned; and any license granted or renewed in accordance with this proviso may be made subject to such conditions and restrictions as the Civil Aviation Authority of Macau may consider appropriate in the particular case;

(b) if an applicant for the renewal of a license is for the time being on duty as a member of the operating crew of an aircraft in a region distant from official medical centres the medical examination which he should normally pass to obtain renewal of the license may exceptionally, at the discretion of the Civil Aviation Authority of Macau:

(i) be deferred once for a period of 6 months in the case of a member of the operating crew of a private aircraft; or

(ii) be deferred for two consecutive periods of 3 months each in the case of a member of the operating crew of a public transport or aerial work aircraft, on condition that the applicant obtains locally on each occasion a satisfactory medical certificate after having been examined by a qualified medical officer.

2. The requirements to be met for the renewal of a medical assessment are the same as those established for the initial assessment except where otherwise specifically stated.

3. (1) Medical examinations must be performed on a routine timely basis for the purpose of renewing the medical certificates of the license holder. Except as provided in sub-paragraphs 2 and 3 to this paragraph, reports of medical fitness obtained in accordance with paragraph 4 shall be submitted at intervals of not greater than the following maximum periods:

- Private Pilot license (aeroplanes and helicopters).....24 months
- Commercial Pilot license (aeroplanes and helicopters)12 months
- Airline Transport Pilot license (aeroplanes and helicopters)12 months
- Flight Navigator license12 months
- Flight Engineer license.....12 months
- Flight Radiotelephony Operator license.....12 months
- Air Traffic Controller license.....24 months

(2) When the holders of either, Airline Transport Pilot licenses (aeroplanes or helicopters), or Commercial Pilot licenses (aeroplanes or helicopters), have passed their 40th birthday, the 12 month maximum period interval specified in sub-paragraph 1 shall be reduced to 6 months.

(3) When the holders of either Private Pilot licenses (aeroplanes, helicopters or gyroplanes) or Air Traffic Controller licenses have passed their 40th birthday, the 24 month maximum interval specified in sub-paragraph 1 shall be reduced to 12 months.

4. (1) The medical examinations, excepting, however, the examination referred to in paragraph (b) of the proviso to paragraph 1 of this Schedule shall be carried out as follows:

(a) the examination shall be carried out by one or more authorised medical examiners appointed by or acting under the authority of the Civil Aviation Authority of Macau;

(b) the medical examiner(s) appointed by the Civil Aviation Authority of Macau after completion of the various assessments in accordance with the standards and periods specified in this Schedule, shall issue individual confidential reports which shall include the results of the various tests and an overhaul general recommendation. These reports must be forwarded to the Civil Aviation Authority of Macau; and

(c) the medical examiner(s) shall report to the Civil Aviation Authority of Macau any individual case where, in the examiner's judgement, an applicant's failure to meet any requirement, whether numerical or otherwise, is such that exercise of the privileges of the license being applied for, or held, is not likely to jeopardise flight safety.

(2) Based on the medical examiner(s) reports, when the Civil Aviation Authority of Macau is satisfied that the requirements prescribed in this Schedule have been met, a medical certificate shall be issued to the respective applicant.

5. Every applicant who presents himself for medical examination for the grant or renewal of a flight crew or an air traffic controller license in Macau shall be required to furnish to the medical examiner a certified statement of the medical facts concerning personal, familial and hereditary history. The applicant shall be made aware of the necessity for giving a statement that is as complete and accurate as the applicant's knowledge permits and any false declaration may entail the cancellation of any license granted or renewed as a result of the examination.

6. Every applicant who presents himself for medical examination for the grant or renewal of a flight crew or an air traffic controller license in Macau shall be required to furnish to the medical examiner a declaration signed by him stating whether he has previously undergone such medical examination, and if so, where, when and with what result. A false declaration may entail the cancellation of any license granted or renewed as a result of the examination.

7. If the holder of a license is aware, or has reasonable grounds to suspect, that his physical, aural or eye condition has deteriorated in any respect, even if only temporarily as the result of a common minor ailment, so that it may be below the standard of medical fitness required for the grant of such a license, he shall not act in any capacity for which he is so licensed until he is satisfied that his condition has been restored to the required standard.

8. (1) If the holder of a license:

(a) suffers any personal injury as the result of an accident occurring while he is acting in any capacity for which he is licensed; or

(b) suffers any personal injury involving incapacity for work as the result of an accident occurring otherwise than while he is acting in any capacity for which he is licensed; or

(c) suffers from any illness involving incapacity for work during 20 days or more,

he shall send a notification of the occurrence, in writing to the Civil Aviation Authority of Macau, as soon as possible in the case of accident and, in the case of illness, as soon as the period of 20 days has elapsed.

(2) The holder of a license may after suffering any such personal injury or illness, be required to undergo a full or partial medical examination. He shall not, therefore, resume acting in any capacity for which he is licensed until he has arranged for a medical report, detailing the nature of the injury or illness, the treatment received, the progress made whilst under treatment and his present condition, to be forwarded to the Civil Aviation Authority of Macau and has, in the light of such report either been examined and pronounced fit or has been informed by the Civil Aviation Authority of Macau that an examination is not required.

(3) Pregnancy shall be regarded as incapacitating the holder of a license from carrying out flying duties. As soon as the condition has been diagnosed the holder of a license shall cease flying and shall not again fly until she has in due course, been examined and pronounced fit. Provided that:

In exceptional circumstances, relaxations of the requirements of this sub-paragraph may be made at the discretion of the Civil Aviation Authority of Macau.

9. The medical examinations required for the purpose of paragraph 8 of this Schedule shall conform with the same conditions and standards as for the grant or renewal of a license except, however as provided in paragraph (b) of the proviso to paragraph 1 of this Schedule.

10. An applicant for a medical assessment issued in accordance with the terms specified in this Schedule shall undergo a medical examination based on the following requirements:

- (a) physical and mental;
- (b) visual;
- (c) colour perception; and
- (d) hearing.

11. The standards of medical fitness appropriate to the various classes of licenses are set out below:

(a) Standard No. 1 applies to applicants for, and holders of:

- Commercial Pilot licenses (aeroplanes, helicopters)
- Airline Pilot licenses (aeroplanes, helicopters)
- Flight Navigator licenses
- Flight Engineer licenses

(b) Standard No. 2 applies to applicants for, and holders of:

- Private Pilot licenses (aeroplanes and helicopters)

- Flight Radiotelephony Operator licenses

(c) Standard No. 3 applies to applicants for, and holders of:

- Air Traffic Controller licenses

12. A person who is the holder of a Private Pilot's license (aeroplanes, helicopters and gyroplanes) and who has been granted or makes application for an instrument rating shall be required to satisfy Hearing Standard No. 1.

Physical and Mental Requirements

13. Physical and Mental Standard No. 1 - The medical examination and assessment will be based on the following requirements of physical and mental fitness:

(a) The applicant shall be required to be free from:

- (i) any abnormality, congenital or acquired; or
- (ii) any active, latent, acute or chronic disability; or
- (iii) any wound, injury or sequelae from operation,

such as would entail a degree of functional incapacity which is likely to interfere with the safe handling of an aircraft or with the safe performance of duties.

(b) The medical examination will include a full inquiry into the family and personal history of the applicant. The information obtained shall be given in a statement made and signed by him and will be taken into consideration by the medical examiner.

(c) The applicant shall not suffer from any disease or disability which renders him liable suddenly to become unable to handle an aircraft safely.

(d) The applicant shall have no established medical history or clinical diagnosis which, according to accredited medical conclusion, would render the applicant unable to safely exercise the privileges of the license or rating applied for or held, as follows:

- (i) a psychosis;
- (ii) alcoholism;
- (iii) drug dependence;
- (iv) any personality disorder, particularly if severe enough to have repeatedly resulted in overt acts;

- (v) a mental abnormality, or neurosis.

The applicant shall have no established medical history or clinical diagnosis of any mental abnormality, personality disorder or neurosis which, according to accredited medical conclusion, makes it likely that within two years of the examination the applicant will be unable to safely exercise the privileges of the license or rating applied for or held. A history of acute toxic psychosis need not be regarded as disqualifying, provided that the applicant has suffered no permanent impairment.

(e) The applicant shall have no established medical history or clinical diagnosis of any of the following:

(i) a progressive or non-progressive disease of the nervous system, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe operation of an aircraft;

(ii) epilepsy;

(iii) any disturbance of consciousness without satisfactory medical explanation of cause.

(f) Cases of head injury, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe operation of an aircraft shall be assessed as unfit.

(g) The applicant shall not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe operation of an aircraft. A history of proven myocardial infarction shall be disqualifying. Such commonly occurring conditions as respiratory arrhythmia, occasional extrasystoles which disappear on exercise, increase of pulse rate from excitement or exercise, or a slow pulse not associated with auriculoventricular dissociation may be regarded as being within "normal" limits.

(h) Electrocardiography shall form part of the heart examination for the first issue of a license and shall be included in re-examination of applicants no less frequently than every 5 years up to the age of 30, between the ages of 30 and 40 no less frequently than every 2 years, and thereafter no less frequently than annually. The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify disqualification without further thorough cardiovascular investigation.

(i) The systolic and diastolic blood pressures shall be within normal limits. The use of drugs for control of high blood pressure is disqualifying except for those drugs, the use of which, according to accredited medical conclusion, is compatible with the safe exercise of the applicant's license privileges. There shall be no significant functional nor structural abnormality of the circulatory tree.

(j) There shall be no acute disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleura. In the case of an examination for the first issue of a license, radiography shall form a part of the chest examination and shall be repeated periodically thereafter. Radiographic examinations shall be carried out in all doubtful clinical cases.

(k) Any extensive mutilation of the chest wall with collapse of the thoracic cage and sequelae of surgical procedures resulting in decreased respiratory efficiency at altitude shall be assessed as unfit. Cases of pulmonary emphysema will be assessed as unfit if the condition is causing symptoms.

(l) Cases of active pulmonary tuberculosis, duly diagnosed, shall be assessed as unfit. Cases of quiescent or healed lesions which are known to be tuberculous, or are presumably tuberculous in origin, may be assessed as fit. Cases of doubt about the activity of a lesion, where symptoms of activity of the disease are lacking, clinically, be assessed as temporarily unfit for a period of not less than 3 months from the date of the medical examination. At the end of the 3-month period, a further radiographic record shall be made and compared carefully with the original. If there is no sign of extension of the disease and there are no general symptoms nor symptoms referable to the chest, the applicant may be assessed as fit for 3 months. Thereafter, provided there continues to be no sign of extension of the disease as shown by radiographic examinations carried out at the end of each 3-month period, the validity of the license will be restricted to consecutive periods of 3 months. When the applicant has been under observation under this scheme for a total period of at least two years and comparison of all the radiographic records shows no changes or only retrogression of the lesion, the lesion will be regarded as "quiescent" or "healed".

(m) Cases of disabling disease with important impairment of functions of the gastro-intestinal tract and its adnexae shall be assessed as unfit.

(n) The applicant shall be required to be completely free from hernia.

(o) Any sequelae of disease or surgical intervention on any part of the digestive tract and its adnexae, liable to cause sudden incapacity in flight, in particular any obstructions due to stricture or compression, shall be assessed as unfit. An applicant who has undergone a major surgical operation on the biliary passages or the digestive tract or its adnexae, which has involved a total or partial excision or a diversion of any of these organs will be assessed as unfit until such time as the medical examiner having access to the details of the operation concerned considers that the effects of the operation are not liable to cause sudden incapacity in the air.

(p) Cases of metabolic, nutritional or endocrine disorders likely to interfere with the safe operation of an aircraft shall be assessed as unfit.

(q) Proven cases of diabetes mellitus shown to be controllable, without the use of any antidiabetic drug, shall be assessed as fit.

(r) Cases of severe and moderate enlargement of the spleen persistently below the costal margin shall be assessed as unfit.

(s) Cases of significant localised and generalised enlargement of the lymphatic glands and of diseases of the blood shall be assessed as unfit. Possession of the sickle cell trait should not be a reason for disqualification unless there is positive medical evidence to the contrary. Cases due to a transient condition will be assessed as only temporarily unfit.

(t) Cases presenting any signs of organic disease of the kidney shall be assessed as unfit; those due to a transient condition may be assessed as temporarily unfit. The urine shall

contain no abnormal element considered by the medical examiner to be pathological. Cases of affections of the urinary passages and of the genital organs shall be assessed as unfit; those due to a transient condition may be assessed as temporarily unfit.

(u) Any sequelae of disease or surgical procedures on the kidneys and the urinary tract liable to cause sudden incapacity, in particular any obstructions due to stricture or compression, shall be assessed as unfit. Compensated nephrectomy without hypertension or uraemia may be assessed as fit. An applicant who has undergone a major surgical operation on the urinary system, which has involved a total or partial excision or a diversion of any of its organs will be assessed as unfit, until such time as the medical examiner having access to the details of the operation concerned considers that the effects of the operation are not liable to cause sudden incapacity in the air.

(v) An applicant for the first issue of a license who has a personal history of syphilis shall be required to furnish evidence, satisfactory to the medical examiner, that he has undergone adequate treatment.

(w) Applicants who have a history of severe menstrual disturbances that have proven unnameable to treatment and that are likely to interfere with the safe handling of an aircraft shall be assessed as unfit. In the event of presumed pregnancy the applicant shall be assessed as temporarily unfit. After confinement or miscarriage the applicant shall not be permitted to exercise the privileges of her license until she has undergone re-examination and has been assessed as fit. Those who have undergone gynaecological operations will be considered individually.

(x) Any active disease of the bones, joints, muscles or tendons and all serious functional sequelae of congenital or acquired disease shall be assessed as unfit. Functional after-effects of lesion affecting the bones, joints, muscles or tendons and certain anatomical defects compatible with the safe handling of an aircraft at any altitude and throughout a prolonged or difficult flight may be assessed as fit.

(y) There shall be:

(i) no active pathological process, acute or chronic, of the internal ear or of the middle ear;

(ii) no unhealed (unclosed) perforation of the tympanic membranes except that a single dry perforation of non-infectious origin, need not render the applicant unfit; and licences shall not be issued or renewed in these circumstances unless the appropriate hearing requirements in paragraphs 25 to 29 of this Schedule are complied with;

(iii) no permanent obstruction of the Eustachian tubes; and

(iv) no permanent disturbances of the vestibular apparatus; and transient conditions may be assessed as temporarily unfit.

Note: The details of the hearing requirements are set out in paragraphs 25 to 29 of this Schedule.

(z) There shall be free nasal air entry on both sides. There shall be no serious malformation nor serious, acute or chronic affection of the buccal cavity or upper respiratory tract. Cases of speech defects and stuttering shall be assessed as unfit.

14. Physical and Mental Standard No. 2 - The medical examination and assessment will be based on the following requirements of physical and mental fitness:

(a) The applicant shall be required to be free from:

- (i) any abnormality, congenital or acquired; or
- (ii) any active, latent, acute or chronic disability; or
- (iii) any wound, injury or sequelae from operation,

such as would entail a degree of functional incapacity which is likely to interfere with the safe performance of his duties at any altitude throughout a prolonged or difficult flight.

(b) The medical examination will include a full inquiry into the family and personal history of the applicant. The information obtained shall be given in a statement made and signed by him and will be taken into consideration by the medical examiner.

(c) The applicant shall not suffer from any disease or disability which renders him liable suddenly to become unable to perform his duties safely.

(d) The applicant shall have no established medical history or clinical diagnosis which, according to accredited medical conclusion, would render the applicant unable to safely exercise the privileges of the license or rating applied for or held, as follows:

- (i) a psychosis;
- (ii) alcoholism;
- (iii) drug dependence;
- (iv) any personality disorder, particularly if severe enough to have repeatedly resulted in overt acts;
- (v) a mental abnormality, or neurosis.

The applicant shall have no established medical history or clinical diagnosis of any mental abnormality, personality disorder or neurosis which, according to accredited medical conclusion, makes it likely that within two years of the examination the applicant will be unable to safely exercise the privileges of the license or rating applied for or held. A history of acute toxic psychosis need not be regarded as disqualifying, provided that the applicant has suffered no permanent impairment.

(e) The applicant shall have no established medical history or clinical diagnosis of any of the following:

(i) a progressive or non-progressive disease of the nervous system, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe performance of the applicant's duties;

(ii) epilepsy;

(iii) any disturbance of consciousness without satisfactory medical explanation of cause.

(f) Cases of head injury, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe operation of an aircraft, shall be assessed as unfit.

(g) The applicant shall not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe performance of duties. A history of proven myocardial infarction shall be disqualifying. Such commonly occurring conditions as respiratory arrhythmia, occasional extrasystoles which disappear on exercise, increase of pulse rate from excitement or exercise, or a slow pulse not associated with auriculoventricular dissociation may be regarded as being within "normal" limits.

(h) Electrocardiography shall form part of the heart examination for the first issue of a license and shall be included in re-examination of applicants no less frequently than every 5 years up to the age of 30, between the ages of 30 and 40 no less frequently than every 2 years, and thereafter no less frequently than annually. The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify disqualification without further thorough cardiovascular investigation.

(i) The systolic and diastolic blood pressure shall be within normal limits. The use of drugs for control of high blood pressure is disqualifying except for those drugs, the use of which, according to accredited medical conclusion, is compatible with the safe exercise of the applicant's license privileges. There shall be no significant functional nor structural abnormality of the circulatory tree.

(j) There shall be no acute disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleura. In the case of an examination for the first grant of a license, radiography shall form a part of the chest examination and shall be repeated periodically thereafter. Radiographic examinations shall be carried out in all doubtful clinical cases.

(k) Any extensive mutilation of the chest wall with collapse of the thoracic cage and sequelae of surgical procedures resulting in decreased respiratory efficiency at altitude shall be assessed as unfit. Cases of pulmonary emphysema will be assessed as unfit only if the condition is causing symptoms.

(l) Cases of active pulmonary tuberculosis, duly diagnosed, shall be assessed as unfit. Cases of quiescent or healed lesions which are known to be tuberculous, or are presumably tuberculous in origin, may be assessed as fit. Cases of doubt about the activity of a lesion,

where symptoms of activity of the disease are lacking, clinically, will be assessed as temporarily unfit for a period of not less than 3 months from the date of the medical examination. At the end of the 3-month period, a further radiographic record shall be made and compared carefully with the original. If there is no sign of extension of the disease and there are no general symptoms nor symptoms referable to the chest, the applicant may be assessed as fit for 3 months. Thereafter, provided there continues to be no sign of extension of the disease as shown by radiographic examinations carried out at the end of each 3-month period, the validity of the license will be restricted to consecutive periods of 3 months. When the applicant has been under observation under this scheme for a total period of at least 2 years and comparison of all the radiographic records shows no changes or only retrogression of the lesion, the lesion will be regarded as "quiescent" or "healed".

(m) Cases of disabling disease with important impairment of function of the gastro-intestinal tract and its adnexae shall be assessed as unfit.

(n) The applicant shall be required to be completely free from hernia.

(o) Any sequelae of disease or surgical intervention on any part of the digestive tract and its adnexae, liable to cause sudden incapacity in flight, in particular any obstructions due to stricture or compression, shall be assessed as unfit. An applicant who has undergone a major surgical operation on the biliary passages or the digestive tract or its adnexae, which has involved a total or partial excision or a diversion of any of these organs will be assessed as unfit until such time as the medical examiner having access to the details of the operation concerned considers that the effects of the operation are not liable to cause sudden incapacity in the air.

(p) Cases of metabolic, nutritional or endocrine disorders likely to interfere with the safe performance of duties shall be assessed as unfit.

(q) Proven cases of diabetes mellitus shown to be controllable without the use of any anti-diabetic drug, shall be assessed as fit.

(r) Cases of severe and moderate enlargement of the spleen persistently below the costal margin shall be assessed as unfit.

(s) Cases of significant localised and generalised enlargement of the lymphatic glands and of diseases of the blood shall be assessed as unfit. Possession of the sickle cell trait should not be a reason for disqualification unless there is positive medical evidence to the contrary. Cases due to a transient condition will be assessed as only temporarily unfit.

(t) Cases presenting any signs of organic disease of the kidney shall be assessed as unfit; those due to a transient condition may be assessed as temporarily unfit. The urine shall contain no abnormal element considered by the medical examiner to be pathological. Cases of affections of the urinary passages and of the genital organs shall be assessed as unfit; those due to a transient condition may be assessed as temporarily unfit.

(u) Any sequelae of disease or surgical procedures on the kidneys and the urinary tract liable to cause sudden incapacity, in particular any obstructions due to stricture or compression, shall be assessed as unfit. Compensated nephrectomy without hypertension or uraemia may be assessed as fit. An applicant who has undergone a major surgical operation

on the urinary system, which has involved a total or partial excision or a diversion of any of its organs will be assessed as unfit until such time as the medical examiner having access to the details of the operation concerned considers that the effects of the operation are not liable to cause sudden incapacity in the air.

(v) An applicant for the first issue of a license who has a personal history of syphilis shall be required to furnish evidence, satisfactory to the medical examiner, that he has undergone adequate treatment.

(w) Applicants who have a history of severe menstrual disturbances that have proven unnameable to treatment and that are likely to interfere with the safe performance of her duties shall be assessed as temporarily unfit. In the event of presumed pregnancy the applicant shall be assessed as temporarily unfit. After confinement or miscarriage the applicant shall not be permitted to exercise the privileges of her license until she has undergone re-examination and has been assessed as fit. Those who have undergone gynaecological operations will be considered individually.

(x) Any active disease of the bones, joints, muscles or tendons and all serious functional sequelae of congenital or acquired disease shall be assessed as unfit. Functional after-effects of lesions affecting the joints, bones, muscles or tendons and certain anatomical defects compatible with the safe performance of his duties at any altitude and throughout a prolonged or difficult flight may be assessed as fit.

(y) There shall be:

(i) no active pathological process, acute or chronic, of the internal ear or of the middle ear:

(ii) no unhealed (unclosed) perforation of the tympanic membranes except that a dry perforation need not render the applicant unfit. Licences shall not be issued or renewed in these circumstances unless the appropriate hearing requirements in paragraphs 25 to 29 of this Schedule are complied with;

(iii) no permanent obstruction of the Eustachian tubes;

(iv) no permanent disturbances of the vestibular apparatus; and transient conditions may be assessed as temporarily unfit.

Note: The details of the hearing requirements are set out in paragraphs 25 to 29 of this Schedule.

(z) There shall be free nasal air entry on both sides. There shall be no serious malformation nor serious, acute or chronic affection of the buccal cavity or upper respiratory tract. Applicants suffering from a serious degree of stuttering shall be assessed as unfit.

15. Physical and Mental Standard No. 3 - The medical examination and assessment shall be based on the following requirements of physical and mental fitness:

(a) The applicant shall be required to be free from:

- (i) any abnormality, congenital or acquired; or
 - (ii) any active, latent, acute or chronic disability; or
 - (iii) any wound, injury or sequelae from operation, such as would entail a degree of functional incapacity which is likely to interfere with the safe handling of an aircraft under ordinary conditions.
- (b) The medical examination will include a full inquiry into the family and personal history of the applicant. The information obtained shall be given in a statement made and signed by him and will be taken into consideration by the medical examiner.
- (c) The applicant shall not suffer from any disease or disability which renders him liable suddenly to become unable to handle an aircraft safely.
- (d) The applicant shall have no established medical history or clinical diagnosis which, according to accredited medical conclusion, would render the applicant unable to safely exercise the privileges of the license or rating applied for or held, as follows:
- (i) a psychosis;
 - (ii) alcoholism;
 - (iii) drug dependence;
 - (iv) any personality disorder, particularly if severe enough to have repeatedly resulted in overt acts;
 - (v) a mental abnormality, or neurosis.

The applicant shall have no established medical history or clinical diagnosis of any mental abnormality, personality disorder or neurosis which, according to accredited medical conclusion, makes it likely that within two years of the examination the applicant will be unable to safely exercise the privileges of the license or rating applied for or held. A history of acute toxic psychosis need not be regarded as disqualifying, provided that the applicant has suffered no permanent impairment.

- (e) The applicant shall have no established medical history or clinical diagnosis of any of the following:
- (i) a progressive or non-progressive disease of the nervous system, the effect of which, according to accredited medical conclusion, are likely to interfere with the safe operation of an aircraft;
 - (ii) epilepsy;
 - (iii) any disturbance of consciousness without satisfactory medical explanation of cause.

- (f) Cases of head injury, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe operation of an aircraft, shall be assessed as unfit.
- (g) The applicant shall not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe operation of an aircraft. A history of proven myocardial infarction shall be disqualifying. Such commonly occurring conditions as respiratory arrhythmia, occasional extrasystoles which disappear on exercise, increase of pulse rate from excitement or exercise, or a slow pulse not associated with auriculoventricular dissociation may be regarded as being within "normal" limits.
- (h) Electrocardiography shall form part of the heart examination for the first issue of a license and shall be included in re-examination of applicants no less frequently than every 5 years up to the age of 30 and thereafter no less frequently than every 2 years. The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify disqualification without further thorough cardiovascular investigation.
- (i) The systolic and diastolic blood pressures shall be within normal limits. The use of drugs for control of high blood pressure is disqualifying except for those drugs, the use of which, according to accredited medical conclusion, is compatible with the safe exercise of the applicant's license privileges. There shall be no significant functional nor structural abnormality of the circulatory tree. The presence of varicosities does not necessarily entail unfitness.
- (j) There shall be no acute disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleura. In the case of an examination for the first grant of a license, radiography shall form a part of the chest examination and shall be repeated periodically thereafter. Radiographic examinations shall be carried out in all doubtful clinical cases.
- (k) Any extensive mutilation of the chest wall with collapse of the thoracic cage and sequelae of surgical procedures resulting in decreased respiratory efficiency at altitude shall be assessed as unfit. Cases of pulmonary emphysema will be assessed as unfit only if the condition is causing symptoms.
- (l) Cases of active pulmonary tuberculosis, duly diagnosed, shall be assessed as unfit. Cases of quiescent or healed lesions which are known to be tuberculous, or are presumably tuberculous in origin, may be assessed as fit. Cases of doubt about the activity of a lesion, where symptoms of activity of the disease are lacking, clinically, will be assessed as temporarily unfit for a period of not less than 3 months from the date of the medical examination. At the end of the 3-month period, a further radiographic record should be made and compared carefully with the original. If there is no sign of extension of the disease and there are no general symptoms nor symptoms referable to the chest, the applicant may be assessed as fit for 3 months. Thereafter, provided there continues to be no sign of extension of the disease as shown by radiographic examinations carried out at the end of each 3-month period, the validity of the license will be restricted to consecutive periods of 3 months. When the applicant has been under observation under this scheme for a total period of at least two years and comparison of all the radiographic records shows no changes or only retrogression of the lesion, the lesion will be regarded as "quiescent" or "healed".
- (m) Cases of disabling disease with important impairment of function of the gastrointestinal tract and its adnexae shall be assessed as unfit.

- (n) The applicant shall be required to be free from hernia. Cases in which the medical examiner is satisfied that a well-fitted truss will be worn may be assessed as fit.
- (o) Any sequelae of disease or surgical intervention on any part of the digestive tract and its adnexae, liable to cause sudden incapacity in flight, in particular any obstructions due to stricture or compression, shall be assessed as unfit. An applicant who has undergone a major surgical operation on the biliary passages or the digestive tract or its adnexae, which has involved a total or partial excision or a diversion of any of these organs will be assessed as unfit until such time as the medical examiner having access to the details of the operation concerned considers that the effects of the operation are not liable to cause sudden incapacity in the air.
- (p) Cases of metabolic, nutritional or endocrine disorders likely to interfere with the safe handling of an aircraft shall be assessed as unfit.
- (q) Proven cases of diabetes mellitus shown to be controllable, without the use of any anti-diabetic drug, shall be assessed as fit. The use of anti-diabetic drugs for the control of diabetes mellitus is disqualifying.
- (r) Cases of significant localised and generalised enlargement of the lymphatic glands and of diseases of the blood shall be assessed as unfit. Cases due to a transient condition will be assessed as only temporarily unfit.
- (s) Cases presenting any signs of organic disease of the kidney shall be assessed as unfit; those due to a transient condition may be assessed as temporarily unfit. The urine shall contain no abnormal element considered by the medical examiner to be pathological. Cases of affections of the urinary passages and of the genital organs shall be assessed as unfit; those due to a transient condition may be assessed as temporarily unfit.
- (t) Any sequelae of disease or surgical procedures on the kidneys and the urinary tract liable to cause sudden incapacity, in particular any obstructions due to stricture or compression, shall be assessed as unfit. Compensated nephrectomy without hypertension or uraemia may be assessed as fit. An applicant who has undergone a major surgical operation on the urinary system, which has involved a total or partial excision or a diversion of any of its organs will be assessed as unfit until such time as the medical examiner having access to the details of the operation concerned considers that the effects of the operation are not liable to cause sudden incapacity in the air.
- (u) An applicant for the first issue of a license who has a personal history of syphilis shall be required to furnish evidence, satisfactorily to the medical examiner, that he has undergone adequate treatment.
- (v) Applicants who have a history of severe menstrual disturbances that have proven unnameable to treatment and that are likely to interfere with the safe performance of her duties shall be assessed as temporarily unfit. In the event of presumed pregnancy the applicant shall be assessed as temporarily unfit. After confinement or miscarriage the applicant shall not be permitted to exercise the privileges of her license until she has undergone re-examination and has been assessed as fit. Those who have undergone gynaecological operations will be considered individually.

(w) Any active disease of the bones, joints, muscles or tendons and all serious functional sequelae of congenital or acquired disease shall be assessed as unfit. Certain qualifying functional after-effects of lesion affecting the bones, joints, muscles or tendons and certain anatomical defects compatible with the safe handling of an aircraft in flight may be assessed as fit.

(x) There shall be:

(i) no active pathological process, acute or chronic, of the internal ear or of the middle ear; and

(ii) no permanent disturbances of the vestibular apparatus; and transient conditions may be assessed as temporarily unfit.

Note: The details of the hearing requirements are set out in paragraphs 25 to 29 of this Schedule.

(y) There shall be no serious malformation nor serious, acute or chronic affection of the buccal cavity or upper respiratory tract.

Visual Requirements

16. Visual acuity for distance shall be measured by means of a series of optotypes of Snellen or Landolt, or other similar optotypes, illuminated at not less than 10 nor more than 15 foot candles and placed at a distance of 6 metres from the applicant, or 5 metres as appropriate to the method of testing adopted.

17. (1) For a visual acuity test in a lighted room, a test illumination level of approximately 50 lx, normally corresponding to a brightness of 30 cd per square meter shall be adopted. The light level of the room should be approximately one-fifth of the test illumination level.

(2) For a visual test in a darkened, or semi-darkened room, a test illumination level of approximately 15 lx, normally corresponding to a brightness of 10 cd per square meter, should be adopted.

18. (1) Each eye of the applicant will be tested separately. The use of contact lenses will not be permitted during the test, and the expression "correcting glasses" shall not for the purpose of the following 3 visual standards include contact lenses.

(2) Applicants will not be permitted during the test to attempt to improve visual acuity by partially closing the eyelids so as to produce a stenopaic effect.

19. Visual Standard No. 1.

(1) The function of the eye and their adnexae shall be normal. There shall be no active pathological condition, acute or chronic, of either eye or adnexae which is likely to interfere with its proper function to an extent that would jeopardise safety in flight or safe performance of duties.

- (2) The applicant shall be required to have normal fields of vision.
- (3) The applicant shall be required to have a distant visual acuity of not less than 6/9 (20/30, 0.7) in each eye separately, with or without the use of correcting lenses. Where this standard of visual acuity can be obtained only with correcting lenses the applicant may be assessed as fit provided that:
- (a) such correcting lenses are worn when exercising the privileges of the license or rating applied for or held;
 - (b) the applicant has at least a distant visual acuity in each eye separately of not less than 6/60 (20/200, 0.1) without correction;
 - (c) the refractive error falls within the range of ± 3 diopters (equivalent spherical error); and
 - (d) he has a spare set of suitable correcting lenses readily available when exercising the privileges of a flight crew member's license.

Note: An applicant accepted as meeting the provision of sub-paragraph (c) of this paragraph is deemed to continue to do so unless there is reason to suspect otherwise, in which case refraction is repeated at the discretion of the medical examiner. The uncorrected visual acuity is measured and recorded at each re-examination. Conditions which indicate a need to re-determine the refractive error include: a refractive state close to the limit of acceptability, a substantial decrease in the uncorrected visual acuity, and the occurrence of eye disease, eye injury or eye surgery.

- (4) The applicant shall be required to have the ability to read the N5 chart or its equivalent at a distance selected by him in the range of 30 to 50 centimetres and the ability to read the N14 chart or its equivalent at a distance of 100 centimetres. If this requirement is met only by the use of correcting lenses, the applicant may be assessed as fit provided that such lenses are available for immediate use when exercising the privileges of the license. No more than one pair of correcting lenses shall be used in demonstrating compliance with Visual Standard No. 1. Single-vision near correction shall not be acceptable.

Note 1: N5 and N14 refer to "Times Roman" typeface.

Note 2: An applicant who needs correction to meet this requirement will require "lookover", bifocal or perhaps trifocal lenses to enable him to read the instruments and a chart or manual held in hand, and also to make use of distant vision through the windscreen without removing his lenses. Single-vision near correction (full lenses of one power only, appropriate to reading) significantly reduces distant visual acuity. Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which he is likely to function or to other aviation tasks.

- (5) An applicant shall have a near point of accommodation of 30 centimetres while wearing the correcting lenses, if any, required by paragraph (3). An applicant who does not meet this provision may, nevertheless, be assessed as fit if able to produce satisfactory

evidence of having been fitted with correction for near and intermediate-range vision, or of not requiring such correction at present. Such an applicant shall be required to wear the correction needed for near and intermediate-range vision, in addition to any correction required by paragraph (3), while exercising the privileges of the license.

20. Visual Standard No. 2.

(1) There shall be no active pathological condition, acute or chronic, of either eye or adnexae which is likely to interfere with its proper function to an extent that would jeopardise safety in flight.

(2) The applicant shall be required to have normal fields of vision.

(3) The applicant shall be required to have a distant visual acuity of not less than 6/12 (20/40, 0.5) in each eye separately, with or without the use of correcting lenses. Where this standard or visual acuity can be obtained only with correcting lenses, the applicant may be assessed as fit provided that:

(a) such correcting lenses are worn when exercising the privileges of the license or rating applied for or held; and

(b) he has a spare set of suitable correcting lenses readily available when exercising the privileges of a flight crew member's license.

(4) If the visual acuity required by sub-paragraph (3) is obtained by the use of correcting lenses and the uncorrected visual acuity in either eye is less than 6/60 (20/200, 0.1), applicants whose refractive error in each eye falls within the range of ± 5 diopters (equivalent spherical error) may be assessed as fit.

Note: An applicant accepted as meeting these provisions is deemed to continue to do so unless there is reason to suspect otherwise, in which case refraction is repeated at the discretion of the medical examiner. The uncorrected visual acuity is measured and recorded at each re-examination. Conditions which indicate a need to re-determine the refractive error include: a refractive state close to the limit of acceptability, a substantial decrease in the uncorrected visual acuity, and the occurrence of eye disease, eye injury or eye surgery.

(5) The applicant shall have the ability to read the N5 chart or its equivalent at a distance selected by him in the range 30 to 50 centimetres. An applicant meeting this provision only by the use of correcting lenses may be assessed as fit provided that such correction is available for immediate use when exercising the privileges of the license. Not more than one pair of correcting lenses shall be used in demonstrating compliance with the requirements of sub-paragraph (3). Single-vision near correction shall not be acceptable.

Note 1: Single-vision near correction (full lenses of one power only, appropriate to reading) significantly reduces distant visual acuity.

Note 2: Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of the reading distances for visual flight deck tasks relevant to the types of aircraft in which he is likely to function.

21. Visual Standard No. 3.

(1) The function of the eyes and their adnexae shall be normal. There shall be no active pathological condition, acute or chronic, of either eye or adnexae which is likely to interfere with its proper function to an extent that would jeopardise safety in flight.

(2) The applicant shall be required to have normal fields of vision.

(3) The applicant shall be required to have a distant visual acuity of not less than 6/9 (20/30, 0.7) in each eye separately, with or without the use of correcting lenses. Where this standard or visual acuity can be obtained only with correcting lenses, the applicant may be assessed as fit provided that:

(a) such correcting lenses are worn when exercising the privileges of the license or rating applied for or held; and

(b) he has a spare set of suitable correcting lenses readily available when exercising the privileges of a flight crew member's license.

(4) If the visual acuity required by sub-paragraph (3) is obtained by the use of correcting lenses and the uncorrected visual acuity in either eye is less than 6/60 (20/200, 0.1), applicants whose refractive error in each eye falls within the range of ± 3 diopters (equivalent spherical error) may be assessed as fit.

Note: An applicant accepted as meeting these provisions is deemed to continue to do so unless there is reason to suspect otherwise, in which case refraction is repeated at the discretion of the medical examiner. The uncorrected visual acuity is measured and recorded at each re-examination. Conditions which indicate a need to re-determine the refractive error include: a refractive state close to the limit of acceptability, a substantial decrease in the uncorrected visual acuity, and the occurrence of eye disease, eye injury or eye surgery.

(5) The applicant shall have the ability to read the N5 chart or its equivalent at a distance selected by him in the range 30 to 50 centimetres and the ability to read the N14 chart or its equivalent at a distance of 100 centimetres. An applicant meeting this provision only by the use of correcting lenses may be assessed as fit provided that such correction is available for immediate use when exercising the privileges of the license. Not more than one pair of correcting lenses shall be used in demonstrating compliance with the requirements of sub-paragraph (3).

Note 1: N5 and N14 refer to “Times Roman” typeface.

Note 2: Single-vision near correction (full lenses of one power only, appropriate to reading) significantly reduces distant visual acuity but may be acceptable for certain air traffic control duties.

Note 3: Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of the reading distances for the air traffic control duties the applicant is likely to perform.

(6) An applicant shall have a near point of accommodation of 30 centimetres while wearing the correcting lenses, if any, required by paragraph (3). An applicant who does not meet this provision may, nevertheless, be assessed as fit if able to produce satisfactory evidence of having been fitted with correction for near and intermediate-range vision, or of not requiring such correction at present. Such an applicant shall be required to wear the correction needed for near and intermediate-range vision, in addition to any correction required by paragraph (3), while exercising the privileges of the license.

Colour Perception Requirements

22. The applicant shall be required to demonstrate the ability to perceive readily those colours the perception of which is necessary for the safe performance of its duties. The methods of examinations should be such as to ensure a reliable testing of colour perception.

23. The applicant shall be required to demonstrate the ability to correctly identify a series of pseudo-isochromatic plates (tables) in daylight or in artificial light of the same colour temperature such as that provided by illuminant “C” or “D” as specified by the International Commission on Illumination (ICI).

24. The applicant must be able readily and accurately either to read the pseudo-isochromatic plates or to identify the colours signal red, signal green, and white, when displayed by means of the colour perception lantern.

Hearing Requirements

25. The applicant must be free from any hearing defect likely to interfere with the efficient exercise by him of the privileges of the license for which he is being examined.

26. Auditory acuity shall be measured by the following methods, either or both of which shall be employed according to the requirements of the relevant Hearing Standard:

(a) by means of a standard pure tone audiometer in a room in which the intensity of the background noise does not exceed 50 dB;

(b) by a test of the applicant's ability to hear normal speech; and

(c) alternatively, other methods providing equivalent results to those specified in this paragraph can be used.

27. Hearing Standard No. 1.

At the first issue of a license, not less than once every 5 years up to the age of 40 years, and thereafter not less than once every 3 years, the applicant shall not have a hearing loss, when measured in the manner specified in paragraph 26 (a) of this Schedule, in either ear separately, of more than 35 dB at any of the frequencies 500, 1000 or 2000 Hz, or more than 50 dB at 3000 Hz. However, an applicant with a hearing loss greater than the above may be declared fit provided that:

(a) the applicant has a hearing performance in each ear separately equivalent to that of a normal person, against a background noise that will simulate the masking properties of flight deck noise upon speech and beacon signals; and

(b) the applicant has an ability to hear an average conversational voice in a quiet room, using both ears, at a distance of 2 metres from the examiner, with the back turned to the examiner.

28. Hearing Standard No. 2.

The applicant shall be able to hear an average conversational voice in a quiet room, using both ears, at a distance of two metres from the examiner, with the back turned to the examiner.

29. Hearing Standard No. 3.

At the first issue of a license, not less than once every 5 years up to the age of 40 years, and thereafter not less than once every 3 years, the applicant shall not have a hearing loss, when measured in the manner specified in paragraph 26 (a) of this Schedule, in either ear separately, of more than 35 dB at any of the frequencies 500, 1000 or 2000 Hz, or more than 50 dB at 3000 Hz. However, an applicant with a hearing loss greater than the above may be declared fit provided that:

(a) the applicant has a hearing performance in each ear separately equivalent to that of a normal person, against a background noise that will simulate that experienced in a typical air traffic control working environment; and

(b) the applicant has an ability to hear an average conversational voice in a quiet room, using both ears, at a distance of 2 metres from the examiner, with the back turned to the examiner.

FIFTEENTH SCHEDULE

(Paragraph 18 (4))

Areas specified in connection with the carriage of flight navigators as members of the flight crews or approved navigational equipment on public transport aircraft.

The following areas are specified for the purposes of paragraph 18 (4) of the Regulation:

Area A - Arctic

All that area north of latitude 67° north, but excluding any part thereof lying within 300 nautical miles of Norway.

Area B - Antarctic

All that area south of latitude 55° south.

Area C - Sahara

All that area enclosed by rhumb lines joining successively the following points:

32° north latitude 03° west longitude
24° north latitude 14° west longitude
14° north latitude 14° west longitude
18° north latitude 28° east longitude
24° north latitude 28° east longitude
28° north latitude 23° east longitude
32° north latitude 03° west longitude

Area D - Arabian Desert

All that area enclosed by rhumb lines joining successively the following points:

22° north latitude 42° east longitude
16° north latitude 46° east longitude
20° north latitude 55° east longitude
24° north latitude 48° east longitude
22° north latitude 42° east longitude

Area E - South America (Central)

All that area enclosed by rhumb lines joining successively the following points:

04° north latitude 72° west longitude
04° north latitude 60° west longitude
08° south latitude 42° west longitude
18° south latitude 54° west longitude
18° south latitude 60° west longitude
14° south latitude 72° west longitude
05° south latitude 76° west longitude
04° north latitude 72° west longitude

Area F - Pacific Ocean

All that area enclosed by rhumb lines joining successively the following points:

55° south latitude 75° west longitude
20° south latitude 73° west longitude
05° south latitude 85° west longitude
05° north latitude 80° west longitude
15° north latitude 105° west longitude
30° north latitude 125° west longitude
55° north latitude 140° west longitude
67° north latitude 180° west longitude
60° north latitude 180° west longitude
20° north latitude 128° east longitude
04° north latitude 128° east longitude
00° north latitude 165° west longitude
55° south latitude 180° west longitude
55° south latitude 75° west longitude

Area G - Australia

All that area enclosed by rhumb lines joining successively the following points:

18° south latitude 123° east longitude
30° south latitude 118° east longitude
30° south latitude 135° east longitude
18° south latitude 123° east longitude

Area H - Indian Ocean

All that area enclosed by rhumb lines joining successively the following points:

35° south latitude 110° east longitude
20° south latitude 110° east longitude
13° south latitude 120° east longitude
10° south latitude 100° east longitude
13° north latitude 91° east longitude
13° north latitude 86° east longitude
00° north latitude 80° east longitude
20° north latitude 67° east longitude

20° north latitude 62° east longitude
05° south latitude 43° east longitude
20° south latitude 60° east longitude
25° south latitude 60° east longitude
40° south latitude 10° east longitude
55° south latitude 10° east longitude
55° south latitude 180° east longitude
35° south latitude 110° east longitude

Area I - North Atlantic Ocean

All that area enclosed by rhumb lines joining successively the following points:

55° north latitude 15° west longitude
67° north latitude 40° west longitude
67° north latitude 60° west longitude
45° north latitude 45° west longitude
40° north latitude 63° west longitude
40° north latitude 19° west longitude
55° north latitude 15° west longitude

Area J - South Atlantic Ocean

All that area enclosed by rhumb lines joining successively the following points:

40° north latitude 63° west longitude
19° north latitude 63° west longitude
05° south latitude 30° west longitude
55° south latitude 55° west longitude
55° south latitude 10° east longitude
05° south latitude 10° east longitude
02° north latitude 05° east longitude
02° north latitude 10° west longitude
15° north latitude 25° west longitude
40° north latitude 19° west longitude
40° north latitude 63° west longitude

Area K - Northern Canada

All that area enclosed by rhumb lines joining successively the following points:

67° north latitude 130° west longitude
55° north latitude 115° west longitude
55° north latitude 70° west longitude
67° north latitude 60° west longitude
67° north latitude 130° west longitude

SIXTEENTH SCHEDULE

(Paragraph 37)

MINIMUM NAVIGATION PERFORMANCE SPECIFICATIONS - SPECIFIED AIRSPACE AND NAVIGATION PERFORMANCE CAPABILITY

1. For the purpose of paragraph 37 of the Regulation, the following navigation performance capability is specified, that is to say, a capability to ensure that:

(a) the standard deviation of lateral errors in the track of the aircraft is not more than 6.3 nautical miles;

(b) the proportion of the flight time of the aircraft during which the actual track of the aircraft is 30 nautical miles or more off the track along which it has been given an air traffic control clearance to fly is less than 5.3×10^{-4} ; and

(c) the proportion of the flight time of the aircraft during which the actual track of the aircraft is between 50 and 70 nautical miles off the track along which it has been given an air traffic control clearance to fly is less than 13×10^{-5} .

2. For the purposes of paragraph 37 of the Regulation, the airspace concerned will be specified later on in a Supplement to this Regulation.

Portaria n.º 228/95/M

de 7 de Agosto

訓令 第228/95/M號

八月七日

O Decreto-Lei n.º 36/95/M, de 7 de Agosto, estabelece os princípios gerais que enquadram a actividade de aviação civil em Macau.

Importa agora dar execução ao referido diploma, designadamente no que respeita ao regime das taxas inerentes à actividade aeroportuária e às respectivas normas de liquidação e cobrança previstas no n.º 4 do artigo 6.º daquele diploma.

Considerando a proposta da CAM — Sociedade do Aeroporto Internacional de Macau, S.A.R.L.;

八月七日第36/95/M號法令制定澳門民用航空業務須遵守之一般原則。

現有必要執行上述法規，尤其為執行該法規第六條第四款所定之機場業務固有費用之制度以及有關結算及徵收之規定。

經考慮CAM—澳門國際機場專營公司意見後；