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**CIVIL AVIATION DEPARTMENT**  
Ministry of Transport and Civil Aviation  
Male'  
Republic of Maldives

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## **AIR SAFETY CIRCULAR**

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## **PERSONNEL LICENSING**

### **INTRODUCTION**

This circular set out the rules concerning basic requirements for the issue of Maldivian licences.

### **CHAPTER 1. DEFINITIONS AND GENERAL RULES CONCERNING LICENCES**

#### **1.1 Definitions**

When the following terms are used in the ACS they have the following meanings:

**Accredited medical conclusion.** The conclusion reached by one or more medical experts acceptable to the CAD for the purposes of the case concerned, in consultation with flight operations or other experts as necessary.

**Aeroplane.** A power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

**Aircraft.** Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

**Aircraft avionics.** A term designating any electronic device - including its electrical part - for use in an aircraft, including radio, automatic flight control and instrument systems.

**Aircraft - category.** Classification of aircraft according to specified basic characteristics, e.g. aeroplane, helicopter, glider, free balloon.

**Aircraft certificated for single-pilot operation.** A type of aircraft which the CAD has can be operated safely with a minimum crew of one pilot.

**Aircraft - type of.** All aircraft of the same basic design including all modifications thereto except those modifications which result in a change in handling or flight characteristics.

**Approved maintenance organization.** An organization approved by a CAD to perform inspection, overhaul, maintenance, repair and/or modification of aircraft or parts thereof and operating under supervision approved by CAD.

**Approved training.** Training carried out under special curricula and supervision approved by a CAD.

**Certify as airworthy (to).** To certify that an aircraft or parts thereof comply with current airworthiness requirements after being inspected, overhauled, repaired, modified or installed.

**Co-pilot.** A licensed pilot serving in any piloting capacity other than as pilot-in-command but excluding a pilot who is on board the aircraft for the sole purpose of receiving flight instruction.

**Dual instruction time.** Flight time during which a person is receiving flight instruction from a properly authorized pilot on board the aircraft.

**Flight crew member.** A licensed crew member charged with duties essential to the operation of an aircraft during flight time.

**Flight plan.** Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

**Flight procedures trainer.** See Synthetic flight trainer.

**Flight simulator.** See Synthetic flight trainer.

**Flight time.** The total time from the moment an aircraft first moves under its own power for the purpose of taking off until the moment it comes to rest at the end of the flight.

*Note.- light time as here defined is synonymous with the term "block to block" time or "chock to chock" time in general usage which is measured from the time an aircraft moves from the loading point until it stops at the unloading point.*

**Helicopter.** A heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes.

**Instrument flight time.** Time during which a pilot is piloting an aircraft solely by reference to instruments and without external reference points.

**Instrument ground time.** Time during which a pilot is practising, on the ground, simulated instrument flight in a synthetic flight trainer approved by the CAD.

**Instrument time.** Instrument flight time or instrument ground time.

**Medical Assessment.** The evidence issued by the CAD that the licence holder meets specific requirements of medical fitness. It is issued following an evaluation by the CAD of the report submitted by the designated medical examiner who conducted the examination of the applicant for the licence.

**Night.** The hours between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise, as may be prescribed by the appropriate authority.

*Note.- Civil twilight ends in the evening when the centre of the sun's disc is 6 degrees below the horizon and begins in the morning when the centre of the sun's disc is 6 degrees below the horizon.*

**Pilot (to).** To manipulate the flight controls of an aircraft during flight time.

**Pilot-in-command.** The pilot responsible for the operation and safety of the aircraft during flight time.

**Rated air traffic controller.** An air traffic controller holding a licence and valid ratings appropriate to the privileges to be exercised.

**Rating.** An authorization entered on or associated with a licence and forming part thereof, stating special conditions, privileges or limitations pertaining to such licence.

**Rendering (a licence) valid.** The action taken by CAD, as an alternative to issuing its own licence, in accepting a licence issued by any other Contracting State as the equivalent of its own licence.

**Sign a maintenance release (to).** To certify that the inspection and maintenance work has been completed satisfactorily in accordance with the methods prescribed in the Maintenance Manual by issuing the maintenance release referred to in Annex 6.

**Solo flight time.** Flight time during which a student pilot is the sole occupant of an aircraft.

**Synthetic flight trainer.** Any one of the following three types of apparatus in which flight conditions are simulated on the ground:

*A flight simulator*, which provides an accurate representation of the flight deck of a particular aircraft type to the extent that the mechanical, electrical, electronic, etc. aircraft systems control functions, the normal environment of flight crew members, and the performance and flight characteristics of that type of aircraft are realistically simulated;

*A flight procedures trainer*, which provides a realistic flight deck environment, and which simulates instrument responses, simple control functions of mechanical, electrical, electronic, etc. aircraft systems, and the performance and flight characteristics of aircraft of a particular class;

*A basic instrument flight trainer*, which is equipped with appropriate instruments, and which simulates the flight deck environment of an aircraft in flight in instrument flight conditions.

## 1.2 General rules concerning licences

### 1.2.1 Authority to act as a flight crew member

A person shall not act as a flight crew member of an aircraft unless a valid licence is held showing compliance with the specifications of this ASC and appropriate to the duties to be performed by that person. The licence shall have been issued by the CAD for that aircraft or by any other Contracting State and rendered valid by the CAD.

### 1.2.2 Method of rendering a licence valid

#### 1.2.2.1 When the CAD renders valid a licence issued by another Contracting State, as an alternative to the issuance of its own licence, it shall establish validity by suitable authorization to be carried with the former licence accepting it as the equivalent of the latter. The validity of the authorization shall not extend beyond the period of validity of the licence.

#### 1.2.2.2 A pilot licence issued by a Contracting State will be rendered valid by the CAD for use in private flights provided all requirements are met.

### 1.2.3 Privileges of the holder of a licence

No person shall exercise privileges other than those granted by that licence.

### 1.2.4 Medical fitness

#### 1.2.4.1 An applicant for a licence shall, when applicable, hold a Medical Assessment issued in accordance with the provisions of Chapter 6.

- 1.2.4.2 The duration of the period of currency of a Medical Assessment shall be in accordance with the provisions of 1.2.5. The period of currency shall begin on the date the Medical Assessment is issued.
- 1.2.4.3 Except as provided in 1.2.5.2.3, flight crew members or air traffic controllers shall not exercise the privileges of their licence unless they hold a current Medical Assessment appropriate to the licence.
- 1.2.4.4 The CAD shall designate medical examiners, qualified and licensed in the practice of medicine, to conduct medical examinations of fitness of applicants for the issue or renewal of the licences or ratings specified in Chapters 2 and 3, and of the appropriate licences specified in Chapter 4.
- 1.2.4.4.1 Medical examiners shall have had, or shall receive, training in aviation medicine.
- 1.2.4.4.2 Medical examiners should acquire practical knowledge and experience of the conditions in which the holders of licences and ratings carry out their duties.
- 1.2.4.5 Applicants for licences or ratings for which medical fitness is prescribed shall sign and furnish to the medical examiner a declaration stating whether they have previously undergone such an examination and, if so, with what result.
- 1.2.4.5.1 Any false declaration to a medical examiner made by an applicant for a licence or rating shall be reported to the CAD for such action as may be considered appropriate.
- 1.2.4.6 Having completed the medical examination of an applicant in accordance with Chapter 6, the medical examiner shall submit a signed report to the CAD, in accordance with its requirements, detailing the results of the examination.
- 1.2.4.7 CAD shall use the services of physicians experienced in the practice of aviation medicine when it is necessary to evaluate reports submitted to the CAD by medical examiners.
- 1.2.4.8 If the medical Standards prescribed in Chapter 6 for a particular licence are not met, the appropriate Medical Assessment shall not be issued or renewed unless the following conditions are fulfilled:
- a) accredited medical conclusion indicates that in special circumstances the applicant's failure to meet any requirement, whether numerical or otherwise, is such that exercise of the privileges of the licence applied for is not likely to jeopardize flight safety;
  - b) relevant ability, skill and experience of the applicant and operational conditions have been given due consideration; and
  - c) the licence is endorsed with any special limitation or limitations when the safe performance of the licence holder's duties is dependent on compliance with such limitation or limitations.
- 1.2.5 Validity of licences
- 1.2.5. The privileges granted by that licence, or by related ratings, shall not be exercised unless the holder maintains competency and meets the requirements

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for recent experience established in ASC OPS 2 (7 & 8).

- 1.2.5.1.1 CAD will provide information to other Contracting States to enable them to be satisfied as to the validity of the licence.

*Note 1.- The maintenance of competency of flight crew members, engaged in commercial air transport operations, may be satisfactorily established by demonstration of skill during proficiency flight checks completed in accordance with Annex 6.*

*Note 2.- Maintenance of competency may be satisfactorily recorded in the operator's records, or in the flight crew member's personal log book or licence.*

*Note 3.- Flight crew members may, to the extent deemed feasible by the CAD, demonstrate their continuing competency in synthetic flight trainers approved by that State.*

- 1.2.5.2 Except as provided in 1.2.5.2.1, 1.2.5.2.2 and 1.2.5.2.3, a report of medical fitness obtained in accordance with 1.2.4.5 and 1.2.4.6 shall be submitted at intervals of not greater than:

24 months for the private pilot licence - aeroplane;

12 months for the commercial pilot licence - aeroplane;

12 months for the airline transport pilot licence - aeroplane;

24 months for the private pilot licence - helicopter;

12 months for the commercial pilot licence - helicopter;

12 months for the airline transport pilot licence - helicopter;

12 months for the flight engineer licence;

24 months for the air traffic controller licence.

- 1.2.5.2.1 When the holders of airline transport pilot licences - aeroplane and helicopter have passed their 40th birthday, the 12-month interval specified in 1.2.5.2 shall be reduced to six months.

- 1.2.5.2.2 When the holders have passed their 40th birthday, the 24-month interval specified for the private pilot licences - aeroplane and helicopter, and air traffic controller licence is reduced to 12 months, and the 12-month interval specified for the commercial pilot licences - aeroplane and helicopter will be reduced to six months.

- 1.2.5.2.3 Circumstances in which a medical examination may be deferred. The prescribed re-examination of a licence holder operating in an area distant from designated medical examination facilities may be deferred at the discretion of the CAD, provided that such deferment shall only be made as an exception and shall not exceed:

- a) a single period of six months in the case of a flight crew member of an aircraft engaged in non-commercial operations;

- b) two consecutive periods each of three months in the case of a flight crew member of an aircraft engaged in commercial operations provided that in each case a favourable medical report is obtained after examination by a designated medical examiner of the area concerned, or, in cases where such a designated medical examiner is not available, by a physician legally qualified to practise medicine in that area. A report of the medical examination shall be sent to the CAD where the licence was issued;
- c) in the case of a private pilot, a single period not exceeding 24 months where the medical examination is carried out by an examiner designated under 1.2.4.4 by the Contracting State in which the applicant is temporarily located. A report of the medical examination shall be sent to the CAD.

#### 1.2.6 Decrease in medical fitness

1.2.6.1 Licence holders shall not exercise the privileges of their licences 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.

#### 1.2.7 Approved training

Approved training shall provide a level of competency at least equal to that provided by the minimum experience requirements for personnel not receiving such approved training.

## CHAPTER 2. LICENCES AND RATINGS FOR PILOTS

### 2.1 General rules concerning pilotlicences and ratings

#### 2.1.1 General licensing specifications

2.1.1.1 A person shall not act either as pilot-in-command or as co-pilot of an aircraft in any of the following categories unless that person is the holder of a pilot licence issued in accordance with the provisions of this Chapter:

aeroplane  
helicopter

2.1.1.2 The category of aircraft shall be included in the title of the licence itself, or endorsed as a category rating on the licence.

2.1.1.2.1 When the holder of a pilot licence seeks a licence for an additional category of aircraft, the CAD shall either:

- a) issue the licence holder with an additional pilot licence for that category of aircraft; or
- b) endorse the original licence with the new category rating, subject to the conditions of 2.1.2.

Note.- The requirements for category ratings are given in terms of licensing specifications for pilots and at levels appropriate to the privileges

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to be granted to the licence holder.

- 2.1.1.3 An applicant shall, before being issued with any pilot licence or rating, meet such requirements in respect of age, knowledge, experience, flight instruction, skill and medical fitness, as are specified for that licence or rating.
- 2.1.1.3.1 An applicant for any pilot licence or rating shall demonstrate, in a manner determined by the CAD, such requirements for knowledge and skill as are specified for that licence or rating.
- 2.1.3 Class and type ratings
- 2.1.3.1 Class ratings shall be established for aeroplanes certificated for single-pilot operation and shall comprise:
- a) single-engine, land;
  - b) single-engine, sea;
  - c) multi-engine, land;
  - d) multi-engine, sea.
- Note.- The provisions of this paragraph do not preclude the establishment of other class ratings within this basic structure.
- 2.1.3.1. Class ratings are required for those helicopters certificated for single-pilot operations.
- 2.1.3.2 Type ratings shall be established 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 except where a class rating has been issued under 2.1.3.1.1; and
  - c) any type of aircraft whenever considered necessary by the CAD.
- 2.1.3.3 When an applicant demonstrates skill and knowledge for the initial issue of a pilot licence, the category and the ratings appropriate to the class or type of aircraft used in the demonstration shall be entered on the licence.
- 2.1.4 Circumstances in which class and type ratings are required
- 2.1.4.1 The CAD will not permit the holder of a licence to act either as pilot-in-command or as co-pilot of an aeroplane or helicopter unless the holder has received authorization as follows:
- a) the appropriate class rating specified in 2.1.3.1; or
  - b) a type rating when required in accordance with the provisions of 2.1.3.2.

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

2.1.4.2 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 licence holder by the CAD in place of issuing the class or type rating in accordance with 2.1.4.1. This authorization shall be limited in validity to the time needed to complete the specific flight.

2.1.5 Requirements for the issue of class and type ratings

2.1.5.1 *Class rating*

The applicant shall have demonstrated a degree of skill appropriate to the licence in an aircraft of the class for which the rating is sought.

2.1.5.2 *Type rating as required by 2.1.3.2 a)*

The applicant shall have:

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

normal flight procedures and manoeuvres during all phases of flight;

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

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

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

b) 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) demonstrated, at the airline transport pilot licence level, an extent of knowledge determined by the CAD on the basis of the requirements specified in 2.5.1.2 or 2.9.1.2, as applicable.

2.1.5.3 *Type rating as required by 2.1.3.2 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.

2.1.6 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 licence or rating shall be



approved by the CAD which shall ensure that the synthetic flight trainer used is appropriate to the task.

#### 2.1.7 Circumstances in which an instrument rating is required

The CAD shall not permit the holder of an instrument rating to act either as pilot-in-command or as co-pilot of an aircraft under instrument flight rules (IFR) unless such holder has received proper authorization.

Note.- The instrument rating is included in the airline transport pilot licence - aeroplane, and the provisions of 2.1.7 do not preclude the issue of a licence having the instrument rating as an integral part thereof.

#### 2.1.8 Circumstances in which authorization to conduct flight instruction is required

##### 2.1.8.1 The CAD having issued a pilot licence shall not permit the holder thereof to carry out flight instruction required for the issue of a private pilot licence - aeroplane or helicopter, commercial pilot licence - aeroplane or helicopter, instrument rating - aeroplane or helicopter, or a flight instructor rating appropriate to aeroplanes and helicopters, unless such holder has received proper authorization. Proper authorization shall comprise:

- a) a flight instructor rating on the holder's licence; or
- b) the authority to act as an agent of an approved organization authorized by the CAD to carry out flight instruction; or
- c) a specific authorization granted by the Contracting State which issued the licence.

#### 2.1.9 Crediting of flight time

##### 2.1.9.1 A student pilot or the holder of a pilot licence 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 licence or the issue of a higher grade of pilot licence.

##### 2.1.9.2 The holder of a pilot licence, when acting as co-pilot of an aircraft required to be operated with a co-pilot, shall be entitled to be credited with not more than 50 per cent of the co-pilot flight time towards the total flight time required for a higher grade of pilot licence.

##### 2.1.9.3 The holder of a pilot licence, 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 licence.

#### 2.1.10 Curtailment of privileges of pilots who have attained their 60th birthday

##### 2.1.10.1 The CAD will not permit the holders thereof to act as pilot-in-command of an aircraft engaged in scheduled international air services or non-scheduled international air transport operations for remuneration or hire if the licence holders have attained their 60th birthday.

##### 2.1.10.2 The CAD will not permit the holders thereof to act as co-pilot of an aircraft engaged in scheduled international air services or non-scheduled international

air transport operations for remuneration or hire if the licence holders have attained their 60th birthday.

## 2.2 Student pilot

2.2.1 A student pilot shall meet requirements prescribed by the CAD. In prescribing such requirements, CAD shall ensure that the privileges granted would not permit student pilots to constitute a hazard to air navigation.

2.2.2 A student pilot shall not fly solo unless under the supervision of, or with the authority of, an authorized flight instructor.

2.2.2.1 A student pilot shall not fly solo in an aircraft on an international flight unless by special or general arrangement between the Contracting States concerned.

### 2.2.3 Medical Fitness

A Contracting State shall not permit a student pilot to fly solo unless that student pilot holds a current Class 2 Medical Assessment.

## 2.3 Private pilot licence - Aeroplane

### 2.3.1 Requirements for the issue of the licence

#### 2.3.1.1 Age

The applicant shall be not less than 17 years of age.

#### 2.3.1.2 Knowledge

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

##### *Air law*

- a) rules and regulations relevant to the holder of a private pilot licence - aeroplane; 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 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 - aeroplane;

*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, 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.

2.3.1.3 *Experience*

2.3.1.3.1 The applicant shall have completed not less than 40 hours of flight time as a pilot of aeroplanes. The CAD 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.

2.3.1.3.1.1 When the applicant has flight time as a pilot of aircraft in other categories, the CAD shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.3.1.3.1 can be reduced accordingly.

2.3.1.3.2 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

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5 hours of solo cross-country flight time with at least one cross-country flight totalling not less than 270 km (150 NM) in the course of which full-stop landings at two different aerodromes shall be made.

#### 2.3.1.4 *Flight instruction*

2.3.1.4.1 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:

- a) pre-flight operations, including mass and balance determination, aeroplane inspection and servicing;
- b) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- c) control of the aeroplane by external visual reference;
- d) flight at critically slow airspeeds; recognition of, and recovery from, incipient and full stalls;
- e) flight at critically high airspeeds; recognition of, and recovery from, spiral dives;
- f) normal and cross-wind take-offs and landings;
- g) maximum performance (short field and obstacle clearance) take-offs; short-field landings;
- h) flight by reference solely to instruments, including the completion of a level 180E turn;
- i) cross-country flying using visual reference, dead-reckoning and, where available, radio navigation aids;
- j) emergency operations, including simulated aeroplane equipment malfunctions; and
- k) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology.

2.3.1.4.2 If the privileges of the licence 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 2.3.1.4.1 h) and the night flying experience specified in 2.3.1.4.2 do not entitle the holder of a private pilot licence -aeroplane to pilot aeroplanes under IFR.

#### 2.3.1.5 *Skill*

The applicant shall have demonstrated the ability to perform as pilot-in-command of an aeroplane, the procedures and manoeuvres described in

2.3.1.4 with a degree of competency appropriate to the privileges granted to the holder of a private pilot licence - aeroplane, 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.

#### 2.3.1.6 *Medical fitness*

The applicant shall hold a current Class 2 Medical Assessment.

Note.- Attention is called to 2.6.1.5 on the medical fitness requirements for private pilot licence holders seeking an instrument rating.

#### 2.3.2 Privileges of the holder of the licence and the conditions to be observed in exercising such privileges

2.3.2.1 Subject to compliance with the requirements specified in 1.2.5, 1.2.6 and 2.1, the privileges of the holder of a private pilot licence - aeroplane shall be to act, but not for remuneration, as pilot-in-command or co-pilot of any aeroplane engaged in non-revenue flights.

2.3.2.2 Before exercising the privileges at night, the licence holder shall have complied with the requirements specified in 2.3.1.4.2.

### 2.4 **Commercial pilot licence - Aeroplane**

#### 2.4.1 Requirements for the issue of the licence

##### 2.4.1.1 *Age*

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

Note. Certain privileges of the licence are curtailed by 2.1.10 for licence holders who have attained their 60th birthday.

##### 2.4.1.2 *Knowledge*

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

##### *Air law*

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

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*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 - aeroplane;

*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 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.

2.4.1.3 *Experience*

2.4.1.3.1 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 CAD 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.

2.4.1.3.1.1 The applicant shall have completed in aeroplanes not less than:

- a) 100 hours as pilot-in-command or, in the case of a course of approved training, 70 hours as pilot-in-command;
- b) 20 hours of cross-country flight time as pilot-in-command including a cross-country flight totalling not less than 540 km (300 NM) in the course of which full-stop landings at two different aerodromes shall be made;
- c) 10 hours of instrument instruction time of which not more than 5 hours may be instrument ground time; and
- d) if the privileges of the licence are to be exercised at night, 5 hours of night flight time including 5 take-offs and 5 landings as pilot-in-command.

2.4.1.3.2 When the applicant has flight time as a pilot of aircraft in other categories, the CAD shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.4.1.3.1 can be reduced accordingly.

2.4.1.4 *Flight instruction*

2.4.1.4.1 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:

- a) pre-flight operations, including mass and balance determination, aeroplane inspection and servicing;

- b) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- c) control of the aeroplane by external visual reference;
- d) flight at critically slow airspeeds; spin avoidance; recognition of, and recovery from, incipient and full stalls;
- e) flight at critically high airspeeds; recognition of, and recovery from, spiral dives;
- f) normal and cross-wind take-offs and landings;
- g) maximum performance (short field and obstacle clearance) take-offs; short-field landings;
- h) basic flight manoeuvres and recovery from unusual attitudes by reference solely to basic flight instruments;
- i) cross-country flying using visual reference, dead-reckoning and radio navigation aids; diversion procedures;
- j) abnormal and emergency procedures and manoeuvres; and
- k) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology.

2.4.1.4.2 If the privileges of the licence 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 2.4.1.3.1.1 c) and 2.4.1.4.1 h) and the night flying experience specified in 2.4.1.3.1.1 d) and 2.4.1.4.2 do not entitle the holder of a commercial pilot licence - aeroplane to pilot aeroplanes under IFR.*

#### 2.4.1.5 Skill

The applicant shall have demonstrated the ability to perform as pilot-in-command of an aeroplane, the procedures and manoeuvres described in 2.4.1.4 with a degree of competency appropriate to the privileges granted to the holder of a commercial pilot licence - aeroplane, 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.



#### 2.4.1.6 *Medical fitness*

The applicant shall hold a current Class 1 Medical Assessment.

#### 2.4.2 Privileges of the holder of the licence and the conditions to be observed in exercising such privileges

2.4.2.1 Subject to compliance with the requirements specified in 1.2.5, 1.2.6 and 2.1, the privileges of the holder of a commercial pilot licence - aeroplane shall be:

- a) to exercise all the privileges of the holder of a private pilot licence - aeroplane;
- b) to act as pilot-in-command in any aeroplane engaged in operations other than commercial air transportation;
- c) to act as pilot-in-command in commercial air transportation in any aeroplane certificated for single-pilot operation; and
- d) to act as co-pilot in commercial air transportation in aeroplanes required to be operated with a co-pilot.

2.4.2.2 Before exercising the privileges at night, the licence holder shall have complied with the requirements specified in 2.4.1.3.1.1 d) and 2.4.1.4.2.

### 2.5 **Airline transport pilot licence - Aeroplane**

#### 2.5.1 Requirements for the issue of the licence

##### 2.5.1.1 *Age*

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

Note. Certain privileges of the licence are curtailed by 2.1.10 for licence holders who have attained their 60th birthday.

##### 2.5.1.2 *Knowledge*

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

###### *Air law*

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

###### *Aircraft general knowledge*

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

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- 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 precession 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 airline transport pilot - aeroplane;

*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;

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*Navigation*

- p) air navigation, including the use of aeronautical charts, radio navigation aids and area navigation systems; specific 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; action to be taken in case of communication failure.

**2.5.1.3** *Experience*

- 2.5.1.3.1 The applicant shall have completed not less than 1 500 hours of flight time as a pilot of aeroplanes. The CAD 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 1 500 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.

2.5.1.3.1.1 The applicant shall have completed in aeroplanes not less than:

- a) 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 CAD;
- b) 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 CAD;
- c) 75 hours of instrument time, of which not more than 30 hours may be instrument ground time; and
- d) 100 hours of night flight as pilot-in-command or as co-pilot.

2.5.1.3.2 When the applicant has flight time as a pilot of aircraft in other categories, the CAD shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.5.1.3.1 can be reduced accordingly.

#### 2.5.1.4 *Flight instruction*

The applicant shall have received the dual flight instruction required for the issue of the commercial pilot licence - aeroplane (2.4.1.4) and for the issue of the instrument rating - aeroplane (2.6.1.3).

#### 2.5.1.5 *Skill*

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

- a) pre-flight procedures, including the preparation of the operational flight plan and filing of the air traffic services flight plan;
- b) normal flight procedures and manoeuvres during all phases of flight;
- c) 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
  - landings from instrument approaches
- d) abnormal and emergency procedures and manoeuvres related to failures and malfunctions of equipment, such as powerplant, systems and airframe; and

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

2.5.1.5.1.1 The applicant shall have demonstrated the ability to perform the procedures and manoeuvres described in 2.5.1.5.1 with a degree of competency appropriate to the privileges granted to the holder of an airline transport pilot licence - aeroplane, 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;
- e) 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;
- f) understand and apply crew co-ordination and incapacitation procedures; and
- g) communicate effectively with the other flight crew members.

#### 2.5.1.6 *Medical fitness*

The applicant shall hold a current Class 1 Medical Assessment.

#### 2.5.2 Privileges of the holder of the licence and the conditions to be observed in exercising such privileges

Subject to compliance with the requirements specified in 1.2.5, 1.2.6 and 2.1, the privileges of the holder of an airline transport pilot licence - aeroplane shall be:

- a) to exercise all the privileges of the holder of a private and commercial pilot licence - aeroplane and of an instrument rating - aeroplane; and
- b) to act as pilot-in-command and co-pilot in aeroplanes in air transportation.

### 2.6 **Instrument rating - Aeroplane**

#### 2.6.1 Requirements for the issue of the rating

##### 2.6.1.1 *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of an instrument rating - aeroplane, 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) causes, 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;

*Radiotelephony*

- m) radiotelephony procedures and phraseology as applied to aircraft

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operations under IFR; action to be taken in case of communication failure.

2.6.1.2 *Experience*

2.6.1.2.1 The applicant shall hold a private or commercial pilot licence - aeroplane.

2.6.1.2.2 The applicant shall have completed not less than:

- a) 50 hours of cross-country flight time as pilot-in-command of aircraft in categories acceptable to the CAD, of which not less than 10 hours shall be in aeroplanes; and
- b) 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 authorized instructor.

2.6.1.3 *Flight instruction*

2.6.1.3.1 The applicant shall have gained not less than 10 hours of the instrument flight time required in 2.6.1.2.2 b) 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:

- a) pre-flight procedures, including the use of the flight manual or equivalent document, and appropriate air traffic services documents in the preparation of an IFR flight plan;
- b) pre-flight inspection, use of checklists, taxiing and pre-take-off checks;
- c) procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:

transition to instrument flight on take-off

standard instrument departures and arrivals en-route IFR procedures

holding procedures

instrument approaches to specified minima

missed approach procedures

landings from instrument approaches

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

2.6.1.3.2 If the privileges of the instrument rating are to be exercised on multi-engined 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.

#### 2.6.1.4 *Skill*

2.6.1.4.1 The applicant shall have demonstrated the ability to perform the procedures and manoeuvres described in 2.6.1.3.1 with a degree of competency appropriate to the privileges granted to the holder of an instrument rating - aeroplane, 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.

2.6.1.4.1.1 The applicant shall have demonstrated the ability to operate multi-engined 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 2.1.6 on the use of synthetic flight trainers for demonstrations of skill.

#### 2.6.1.5 *Medical fitness*

2.6.1.5.1 Applicants who hold a private pilot licence shall have established their hearing acuity on the basis of compliance with the hearing requirements for the issue of a Class 1 Medical Assessment.

2.6.2 Privileges of the holder of the rating and the conditions to be observed in exercising such privileges

2.6.2.1 Subject to compliance with the requirements specified in 1.2.5, 1.2.6 and 2.1, the privileges of the holder of an instrument rating - aeroplane shall be to pilot aeroplanes under IFR.

2.6.2.2 Before exercising the privileges on multi-engined aeroplanes, the holder of the rating shall have complied with the requirements of 2.6.1.4.1.1.

Note. Attention is called to 2.10.3 on the exercise of joint privileges of the instrument rating - aeroplane and of the instrument rating - helicopter.

## 2.7 **Private pilot licence - Helicopter**

2.7.1 Requirements for the issue of the licence

2.7.1.1 *Age*

The applicant shall be not less than 17 years of age.



2.7.1.2 *Knowledge*

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

*Air law*

- a) rules and regulations relevant to the holder of a private pilot licence - helicopter; 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 - helicopter;

*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 other operating hazards;

*Principles of flight*

- l) principles of flight relating to helicopters;

*Radiotelephony*

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

2.7.1.3 *Experience*

2.7.1.3.1 The applicant shall have completed not less than 40 hours of flight time as a pilot of helicopters. The CAD 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.

2.7.1.3.1.1 When the applicant has flight time as a pilot of aircraft in other categories, the CAD shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.7.1.3.1 can be reduced accordingly.

2.7.1.3.2 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 time with at least one cross-country flight totalling not less than 180 km (100 NM) in the course of which landings at two different points shall be made.

2.7.1.4 *Flight instruction*

2.7.1.4.1 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:

- a) pre-flight operations, including mass and balance determination, helicopter inspection and servicing;
- b) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- c) control of the helicopter by external visual reference;
- d) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm;
- e) ground manoeuvring and run-ups; hovering; take-offs and landings - normal, out of wind and sloping ground;
- f) take-offs and landings with minimum necessary power; maximum performance take-off and landing techniques; restricted site operations; quick stops;

- g) cross-country flying using visual reference, dead reckoning and, where available, radio navigation aids, including a flight of at least one hour;
- h) emergency operations, including simulated helicopter equipment malfunctions; autorotative approach and landing; and
- i) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology.

2.7.1.4.1.1 The applicant shall have received dual instrument flight instruction from an authorized flight instructor. The instructor should ensure that the applicant has operational experience in flight solely by reference to instruments, including the completion of a level 180E turn, in a suitably instrumented helicopter.

2.7.1.4.2 If the privileges of the licence 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 2.7.1.4.1.1 and the night flying experience specified in 2.7.1.4.2 do not entitle the holder of a private pilot licence -helicopter to pilot helicopters under IFR.

#### 2.7.1.5 *Skill*

The applicant shall have demonstrated the ability to perform as pilot-in-command of a helicopter, the procedures and manoeuvres described in 2.7.1.4 with a degree of competency appropriate to the privileges granted to the holder of a private pilot licence -helicopter, 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.

#### 2.7.1.6 *Medical fitness*

The applicant shall hold a current Class 2 Medical Assessment.

Note. Attention is called to 2.10.1.5 on the medical fitness requirements for private pilot licence holders seeking an instrument rating.

2.7.2 Privileges of the holder of the licence and the conditions to be observed in exercising such privileges

2.7.2.1 Subject to compliance with the requirements specified in 1.2.5, 1.2.6 and 2.1, the privileges of the holder of a private pilot licence - helicopter shall be to act, but not for remuneration, as pilot-in-command or co-pilot of any helicopter

engaged in non-revenue flights.

- 2.7.2.2 Before exercising the privileges at night, the licence holder shall have complied with the requirements specified in 2.7.1.4.2.

## **2.8 Commercial pilot licence - Helicopter**

### 2.8.1 Requirements for the issue of the licence

#### 2.8.1.1 Age

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

Note. Certain privileges of the licence are curtailed by 2.1.10 for licence holders who have attained their 60th birthday.

#### 2.8.1.2 Knowledge

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

##### *Air law*

- a) rules and regulations relevant to the holder of a commercial pilot licence - helicopter; 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;

##### *Flight performance and planning*

- 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;

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*Human performance and limitations*

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

*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; 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.

**2.8.1.3 Experience**

- 2.8.1.3.1 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 CAD 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.

2.8.1.3.1.1 The applicant shall have completed in helicopters not less than:

- a) 35 hours as pilot-in-command;
- b) 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;
- c) 10 hours of instrument instruction time of which not more than 5 hours may be instrument ground time; and
- d) if the privileges of the licence are to be exercised at night, 5 hours of night flight time including 5 take-offs and 5 landing patterns as pilot-in-command.

2.8.1.3.2 When the applicant has flight time as a pilot of aircraft in other categories, the CAD shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.8.1.3.1 can be reduced accordingly.

#### 2.8.1.4 *Flight instruction*

2.8.1.4.1 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:

- a) pre-flight operations, including mass and balance determination, helicopter inspection and servicing;
- b) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- c) control of the helicopter by external visual reference;
- d) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm;
- e) ground manoeuvring and run-ups; hovering; take-offs and landings - normal, out of wind and sloping ground; steep approaches;
- f) take-offs and landings with minimum necessary power; maximum performance take-off and landing techniques; restricted site operations; quick stops;
- g) hovering out of ground effect; operations with external load, if applicable; flight at high altitude;
- h) basic flight manoeuvres and recovery from unusual attitudes by reference solely to basic flight instruments;
- i) cross-country flying using visual reference, dead-reckoning and radio navigation aids; diversion procedures;

- j) abnormal and emergency procedures, including simulated helicopter equipment malfunctions, autorotative approach and landing; and
- k) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures, radiotelephony procedures and phraseology.

2.8.1.4.2 If the privileges of the licence 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 2.8.1.3.1.1 c) and 2.8.1.4.1 h) and the night flying experience specified in 2.8.1.3.1.1 d) and 2.8.1.4.2 do not entitle the holder of a commercial pilot licence - helicopter to pilot helicopters under IFR.

#### 2.8.1.5 *Skill*

The applicant shall have demonstrated the ability to perform as pilot-in-command of a helicopter, the procedures and manoeuvres described in 2.8.1.4 with a degree of competency appropriate to the privileges granted to the holder of a commercial pilot licence - helicopter, 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.

#### 2.8.1.6 *Medical fitness*

The applicant shall hold a current Class 1 Medical Assessment.

2.8.2 Privileges of the holder of the licence and the conditions to be observed in exercising such privileges

2.8.2.1 Subject to compliance with the requirements specified in 1.2.5, 1.2.6 and 2.1, the privileges of the holder of a commercial pilot licence - helicopter shall be:

- a) to exercise all the privileges of the holder of a private pilot licence - helicopter;
- b) to act as pilot-in-command in any helicopter engaged in operations other than commercial air transportation;
- c) to act as pilot-in-command in commercial air transportation in any helicopter certificated for single-pilot operation; and

- 
- d) to act as co-pilot in commercial air transportation in helicopters required to be operated with a co-pilot.

2.8.2.2 Before exercising the privileges at night, the licence holder shall have complied with the requirements specified in 2.8.1.3.1.1 d) and 2.8.1.4.2.

## 2.9 Airline transport pilot licence - Helicopter

2.9.1 Requirements for the issue of the licence

2.9.1.1 *Age*

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

Note.- Certain privileges of the licence are curtailed by 2.1.10 for licence holders who have attained their 60th birthday.

2.9.1.2 *Knowledge*

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

### *Air law*

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

### *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 - helicopter;

*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, 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;

*Operational procedures*

- s) interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
- t) precautionary and emergency procedures; settling with power, ground resonance, retreating blade stall, dynamic roll-over and other operating hazards; safety practices associated with flight under VFR;

- 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.

2.9.1.3 *Experience*

2.9.1.3.1 The applicant shall have completed not less than 1 000 hours of flight time as a pilot of helicopters. The CAD 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 1 000 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.

2.9.1.3.1.1 The applicant shall have completed in helicopters not less than:

- a) 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 CAD;
- b) 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 CAD;
- c) 30 hours of instrument time, of which not more than 10 hours may be instrument ground time; and
- d) 50 hours of night flight as pilot-in-command or as co-pilot.

2.9.1.3.2 When the applicant has flight time as a pilot of aircraft in other categories, the CAD shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.9.1.3.1 can be reduced accordingly.

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**2.9.1.4**    *Flight instruction*

The applicant shall have received the flight instruction required for the issue of the commercial pilot licence - helicopter (2.8.1.4).

Note.- The instrument time specified in 2.9.1.3.1.1 c) and the night flying time specified in 2.9.1.3.1.1 d) do not entitle the holder of the airline transport pilot licence - helicopter to pilot helicopters under IFR.

**2.9.1.5**    *Skill*

**2.9.1.5.1**    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:

- a)    pre-flight procedures, including the preparation of the operational flight plan and filing of the air traffic services flight plan;
- b)    normal flight procedures and manoeuvres during all phases of flight;
- c)    abnormal and emergency procedures and manoeuvres related to failures and malfunctions of equipment, such as powerplant, systems and airframe; and
- d)    procedures for crew incapacitation and crew co-ordination including allocation of pilot tasks, crew co-operation and use of checklists.

**2.9.1.5.1.1** The applicant shall have demonstrated the ability to perform the procedures and manoeuvres described in 2.9.1.5.1 with a degree of competency appropriate to the privileges granted to the holder of an airline transport pilot licence - helicopter, 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;
- e)    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;
- f)    understand and apply crew co-ordination and incapacitation procedures; and
- g)    communicate effectively with the other flight crew members.

**2.9.1.6**    *Medical fitness*

The applicant shall hold a current Class 1 Medical Assessment.

**2.9.2**        Privileges of the holder of the licence and the conditions to be observed in exercising such privileges

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Subject to compliance with the requirements specified in 1.2.5, 1.2.6 and 2.1, the privileges of the holder of an airline transport pilot licence - helicopter shall be:

- a) to exercise all the privileges of the holder of a private and commercial pilot licence - helicopter; and
- b) to act as pilot-in-command and co-pilot in helicopters in air transportation.

## 2.10 Instrument rating - Helicopter

### 2.10.1 Requirements for the issue of the rating

#### 2.10.1.1 *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of an instrument rating - helicopter, 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;

*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;

*Radiotelephony*

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

2.10.1.2 *Experience*

2.10.1.2.1 The applicant shall hold a private, commercial or airline transport pilot licence - helicopter.

2.10.1.2.2 The applicant shall have completed not less than:

- a) 50 hours of cross-country flight time as pilot-in-command of aircraft in categories acceptable to the CAD, of which not less than 10 hours shall be in helicopters; and
- b) 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.

2.10.1.3 *Flight instruction*

The applicant shall have gained not less than 10 hours of the instrument flight time required in

2.10.1.2.2 b) 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:

- a) pre-flight procedures, including the use of the flight manual or equivalent document, and appropriate air traffic services documents in the

- 
- preparation of an IFR flight plan;
  - pre-flight inspection, use of checklists, taxiing and pre-take-off checks;
  - procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:
    - transition to instrument flight on take-off
    - standard instrument departures and arrivals
    - en-route IFR procedures
    - holding procedures
    - instrument approaches to specified minima
    - missed approach procedures
    - landings from instrument approaches
  - d) in-flight manoeuvres and particular flight characteristics; and
  - e) if appropriate, operation of a multi-engined helicopter solely by reference to instruments with one engine inoperative or simulated inoperative.

#### 2.10.1.4 *Skill*

The applicant shall have demonstrated the ability to perform the procedures and manoeuvres specified in 2.10.1.3 with a degree of competency appropriate to the privileges granted to the holder of an instrument rating - helicopter, 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 2.1.6 on the use of synthetic flight trainers for demonstrations of skill.

#### 2.10.1.5 *Medical fitness*

- 2.10.1.5.1 Applicants who hold a private pilot licence shall have established their hearing acuity on the basis of compliance with the hearing requirements for the issue of a Class 1 Medical Assessment.

- 2.10.2 Privileges of the holder of the rating and the conditions to be observed in exercising such privileges

Subject to compliance with the requirements specified in 1.2.5, 1.2.6 and 2.1, the privileges of the holder of an instrument rating - helicopter shall be to pilot helicopters under IFR.

- 2.10.3 Exercise of joint privileges of the instrument rating - aeroplane and the instrument rating - helicopter

The privileges given in 2.6.2 and 2.10.2 may be conferred by 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 2.6 and 2.10, have been met.

## 2.11 Flight instructor rating appropriate to aeroplanes and helicopters

- 2.11.1 Requirements for the issue of the rating

2.11.1.1 *Knowledge*

The applicant shall have met the knowledge requirements for the issue of a commercial pilot licence as specified in 2.4.1.2 or 2.8.1.2 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.

#### 2.11.1.2 *Experience*

The applicant shall have met the experience requirements for the issue of a commercial pilot licence as specified in 2.4.1.3 or 2.8.1.3, as appropriate.

#### 2.11.1.3 *Flight instruction*

The applicant shall, under the supervision of a flight instructor accepted by the CAD for that purpose:

- a) have received instruction in flight instructional techniques including demonstration, student practices, recognition and correction of common student errors; and
- b) have practised instructional techniques in those flight manoeuvres and procedures in which it is intended to provide flight instruction.

#### 2.11.1.4 *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.

#### 2.11.2 Privileges of the holder of the rating and the conditions to be observed in exercising such privileges

Subject to compliance with the requirements specified in 1.2.5 and 2.1, the privileges of the holder of a flight instructor rating shall be:

- a) to supervise solo flights by student pilots; and
- b) to carry out flight instruction for the issue of a private pilot licence, a commercial pilot licence, an instrument rating, and a flight instructor rating

provided that the flight instructor:

- 1) holds at least the licence and rating for which instruction is being given, in the appropriate aircraft category;
- 2) holds the licence and rating necessary to act as the pilot-in-command of the aircraft on which the instruction is given; and
- 3) has the flight instructor privileges granted entered on the licence.



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**CHAPTER 3. LICENCES FOR FLIGHT CREW MEMBERS OTHER THAN  
LICENCES FOR PILOTS****3.1 General rules concerning flight engineer licences**

3.1.1 An applicant shall, before being issued with a flight engineer licence, meet such requirements in respect of age, knowledge, experience, skill and medical fitness as are specified for those licences.

3.1.1.1 An applicant for a flight engineer licence shall demonstrate such requirements for knowledge and skill as are specified for those licences, in a manner determined by the CAD.

**3.2 Flight engineer licence**

3.2.1 Requirements for the issue of the licence

3.2.1.1 *Age*

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

3.2.1.2 *Knowledge*

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

*Air law*

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

*Aircraft general knowledge*

- b) 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;
- c) principles of operation, handling procedures and operating limitations of aircraft powerplants; effects of atmospheric conditions on engine performance;
- d) airframes, flight controls, structures, wheel assemblies, brakes and anti-skid units, corrosion and fatigue life; identification of structural damage and defects;
- e) ice and rain protection systems;
- f) pressurization and air-conditioning systems, oxygen systems;
- g) hydraulic and pneumatic systems;
- h) basic electrical theory, electric systems (AC and DC), aircraft wiring systems, bonding and screening;

- i) principles of operation of instruments, compasses, auto-pilots, radio communication equipment, radio and radar navigation aids, flight management systems, displays and avionics;
- j) limitations of appropriate aircraft;
- k) fire protection, detection, suppression and extinguishing systems;
- l) use and serviceability checks of equipment and systems of appropriate aircraft;

*Flight performance and planning*

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

*Human performance and limitations*

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

*Operational procedures*

- p) 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;
- q) normal, abnormal and emergency procedures;
- r) operational procedures for carriage of freight and dangerous goods;

*Principles of flight*

- s) fundamentals of aerodynamics;

*Radiotelephony*

- t) radiotelephony procedures and phraseology.

3.2.1.2. The applicant should have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight engineer licence in at least the following subjects:

- a) fundamentals of navigation; principles and operation of self-contained systems; and
- b) operational aspects of meteorology.

3.2.1.3 *Experience*

3.2.1.3.1 The applicant shall have completed, under the supervision of a person accepted by the CAD for that purpose, not less than 100 hours of flight time in the

performance of the duties of a flight engineer. The CAD 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.

3.2.1.3.1.1 When the applicant has flight time as a pilot, the CAD shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 3.3.1.3.1 can be reduced accordingly.

3.2.1.3.2 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 CAD for that purpose, in at least the following areas:

a) *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 defect reporting

b) *Abnormal and alternate (standby) procedures*

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

c) *Emergency procedures*

recognition of emergency conditions  
use of appropriate emergency procedures

3.2.1.4 *Skill*

The applicant shall have demonstrated the ability to perform as flight engineer of an aircraft, the duties and procedures described in 3.3.1.3.2 with a degree of competency appropriate to the privileges granted to the holder of a flight engineer licence, and to:

- a) use aircraft systems within the aircraft's capabilities and limitations;
- b) exercise good judgement and airmanship;
- c) apply aeronautical knowledge;
- d) perform all the duties as part of an integrated crew with the successful outcome never in doubt; and
- e) communicate effectively with the other flight crew members.

3.2.1.4.1 The use of a synthetic flight trainer for performing any of the procedures required during the demonstration of skill described in 3.3.1.4 shall be approved by the CAD, which shall ensure that the synthetic flight trainer is appropriate to the task.

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**3.2.1.5**     *Medical fitness*

The applicant shall hold a current Class 1 Medical Assessment.

**3.2.2**     Privileges of the holder of the licence and the conditions to be observed in exercising such privileges**3.3.2.1**     Subject to compliance with the requirements specified in 1.2.5 and 1.2.6, the privileges of the holder of a flight engineer licence shall be to act as flight engineer of any type of aircraft on which the holder has demonstrated a level of knowledge and skill, as determined by the CAD on the basis of those requirements specified in 3.3.1.2 and 3.3.1.4 which are applicable to the safe operation of that type of aircraft.**3.3.2.2**     The types of aircraft on which the holder of a flight engineer licence is authorized to exercise the privileges of that licence, shall be either entered on the licence or recorded elsewhere in a manner acceptable to the CAD.**CHAPTER 4.    LICENCES AND RATINGS FOR PERSONNEL OTHER THAN FLIGHT CREW MEMBERS****4.1            General rules concerning licences and ratings for personnel other than flight crew members****4.1.1**     An applicant shall, before being issued with any licence or rating for personnel other than flight crew members, meet such requirements in respect of age, knowledge, experience and where appropriate, medical fitness and skill, as are specified for that licence or rating.**4.1.2**     An applicant, for any licence or rating for personnel other than flight crew members, shall demonstrate, in a manner determined by the CAD, such requirements in respect of knowledge and skill as are specified for that licence or rating.**4.2            Aircraft maintenance (technician/engineer/mechanic) Category A & C****4.2.1**     Requirements for the issue of the licence**4.2.1.1**     *Age*

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

**4.2.1.2**     *Knowledge*

The applicant shall satisfy the CAD as to knowledge of:

- a) the regulations pertinent to the duties of an aircraft maintenance Category A & C licence holder; and
- b) the assembly, functioning, inspection, servicing, maintenance and principles of construction of whichever of the following are appropriate

to the privileges to be granted:

- 1) aircraft in their entirety;
- 2) airframes;
- 3) aircraft powerplants including their accessories;
- 4) aircraft systems including their components;
- 5) aircraft instruments; and
- 6) aircraft avionics.

#### 4.2.1.3 *Experience*

The applicant shall have had the following experience in the inspection, servicing and maintenance of aircraft or its components:

- a) for the issue of a licence with privileges for signing a Maintenance Release (Certificate of Safety for Flight), at least:
  - 1) three years; or
  - 2) 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 licence with privileges restricted in accordance with 4.2.2.2 b) or c), 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:
  - 1) two years; or
  - 2) such a period as the State considers necessary to provide an equivalent level of practical experience to applicants who have satisfactorily completed an approved training course.

#### 4.2.1.4 *Skill*

The applicant shall have demonstrated the ability to perform those functions applicable to the privileges to be granted.

### 4.2.2 Privileges of the holder of the licence and the conditions to be observed in exercising such privileges

#### 4.2.2.1 Subject to compliance with the requirements specified in 4.2.2.2, the privileges of the holder of an aircraft maintenance Category A & C licence shall be:

- a) for a licence conferring privileges with respect to aircraft in their entirety:

to certify the aircraft as airworthy after a minor repair, authorized minor modification or installation of a previously approved powerplant,

accessory, instrument, and/or item of equipment, and to sign a Maintenance Release (Certificate of Safety for Flight) following inspection, maintenance operations and/or routine servicing; and

- b) for a licence conferring privileges restricted in accordance with 4.2.2.2 b) or c):

to certify as airworthy such parts of aircraft as are entered on the licence, after an inspection, a minor repair or authorized minor modification.

4.2.2.2 The privileges of the holder of an aircraft maintenance Category A & C licence specified in 4.2.2.1 shall be exercised only:

- a) in respect of such aircraft as are entered on the licence 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 licence either specifically or under broad categories; and/or
- c) in respect of such aircraft avionic systems or components as are entered on the licence either specifically or under broad categories;
- 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 Maintenance Release (Certificate of Safety for Flight) or such airframe, powerplant, aircraft component, aircraft system and aircraft avionic system or component which the holder is certifying as being airworthy; and
- e) on condition that, within the preceding 24 months, either the holder has exercised the appropriate privileges of the holder of an aircraft maintenance Type II licence for not less than six months, or has satisfied the CAD of the ability to meet the standards prescribed for the issue of a licence with the appropriate privileges.

4.2.3 Vesting of privileges in an approved maintenance organization

The Standards in 4.2.1 and 4.2.2 apply to the granting of licences to individuals. Where, as an alternative to this method, privileges equivalent to those in 4.2.2.1 are vested in an approved maintenance organization, the CAD will shall ensure by the requirements it imposes for approval of the organization that an equivalent level of competency is maintained. In such an approved maintenance organization the CAD will shall ensure that the privilege of signing a maintenance release is restricted to individuals who have knowledge and experience equivalent to that of 4.2.1.2 and 4.2.1.3.

### 4.3 Aircraft maintenance (technician/engineer/mechanic) Category B

*Note 1.- The terms in brackets are given as acceptable additions to the title of the licence. Each Contracting State is expected to use in its own regulations the one it prefers.*

*Note 2.- The following specifications allow for the issue of an aircraft*

*maintenance Category B licence granting privileges with respect to overhaul, authorized repair or authorized modification of aircraft in their entirety or restricted to such parts of the aircraft as are entered in the licence.*

#### 4.3.1 Requirements for the issue of the licence

##### 4.3.1.1 Age

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

##### 4.3.1.2 Knowledge

The applicant shall satisfy the CAD as to knowledge of:

- a) the regulations pertinent to the duties of an aircraft maintenance Category B licence holder;
- b) the assembly, functioning, inspection, and principles of construction of whichever of the following are appropriate to the privileges to be granted:
  - 1) aircraft in their entirety;
  - 2) airframes;
  - 3) aircraft powerplants including their accessories;
  - 4) aircraft systems including their components;
  - 5) aircraft instruments; and
  - 6) 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:
  - 1) aircraft in their entirety;
  - 2) airframes;
  - 3) aircraft powerplants including their respective components, accessories, instruments and items of equipment and installation thereof;
  - 4) aircraft systems including their components;
  - 5) aircraft instruments; and
  - 6) aircraft avionics.

##### 4.3.1.3 Experience

The applicant shall have had the following experience in the inspection, overhaul, authorized repair and approved modification of aircraft or its parts:

- 
- a) for the issue of a licence with privileges for certifying the airworthiness of aircraft, at least:
- 1) five years; or
  - 2) 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 licence with privileges restricted in accordance with 4.3.2.2 b), 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:
- 1) three years; or
  - 2) such a period as the State 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 a Category A & C licence may be taken into consideration when satisfying the experience requirements for the issue of a Category B licence.*

#### 4.3.1.4 Skill

The applicant shall have demonstrated the ability to perform those functions applicable to the privileges to be granted.

#### 4.3.2 Privileges of the holder of the licence and the conditions to be observed in exercising such privileges

##### 4.3.2.1 Subject to compliance with the requirements specified in 4.3.2.2, the privileges of the holder of an aircraft maintenance Type I licence shall be:

- a) for a licence conferring privileges with respect to aircraft, in their entirety:

to certify as airworthy any overhaul, authorized repair or authorized modification of an aircraft, airframe or powerplant including their respective accessories, instruments, items of equipment and aircraft avionics and installation thereof; provided that such overhauls, repairs and/or modifications incorporate the fitment only of approved parts and components; and

- b) for a licence conferring privileges restricted in accordance with 4.3.2.2 b):

to certify as airworthy such parts of aircraft as are entered on the licence, after overhaul, authorized repair or authorized modifications, including the fitment of approved parts and components.

*Note.- These privileges do not include the privilege of signing a Maintenance Release (Certificate of Safety for Flight) except as provided in 4.3.3.*

##### 4.3.2.2 The privileges of the holder of an aircraft maintenance Category B licence



specified in 4.3.2.1 shall be exercised only:

- a) in respect of such operations and such aircraft as are entered on the licence in their entirety, either specifically or under broad categories; or
- b) in respect of such operations and such airframes, powerplants, aircraft systems or components and aircraft avionics systems or components as are entered on the licence either specifically or under broad categories;
- c) provided that the holder has become familiar with all pertinent and current information relating to the airworthiness of the particular type of aircraft, airframe, powerplant, aircraft system or component and aircraft avionics which the holder certifies as airworthy after overhaul, authorized repair, or authorized modification; and
- d) on condition that within the preceding 24 months, either the holder has exercised the appropriate privileges of the holder of an aircraft maintenance Type I licence for not less than six months, or has satisfied the CAD of the ability to meet the standards prescribed for the issue of a licence with the appropriate privileges.

#### 4.3.3 Exercise of joint privileges of Category B and Category A & C licences

The privileges given in 4.2.2.1 and 4.3.2.1 may be conferred by a single licence in lieu of issuing separate Category B and Category A & C licences provided that the requirements for the issue of these licences, as specified in 4.2.1 and 4.3.1 have been met. The privileges so granted shall be exercised in accordance with the conditions stated in 4.2.2.2 and 4.3.2.2.

#### 4.3.4 Vesting of privileges in an approved maintenance organization

The Standards in 4.3.1 and 4.3.2 apply to the granting of licences to individuals. Where, as an alternative to this method, privileges equivalent to those in 4.3.2.1 are vested in an approved maintenance organization, the CAD will ensure by the requirements it imposes for approval of the organization that an equivalent level of competency is maintained.

### 4.4 Air traffic controller licence

#### 4.4.1 Requirements for the issue of the licence

Before issuing an air traffic controller licence, a CAD will require the applicant to meet the requirements of 4.4.1 and the requirements of at least one of the ratings set out in 4.5. Unlicensed State employees may operate as air traffic controllers on condition that they meet the same requirements.

##### 4.4.1.1 Age

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

##### 4.4.1.2 Knowledge

The applicant shall have demonstrated a level of knowledge appropriate to the holder of an air traffic controller licence, in at least the following subjects:

*Air law*

- a) rules and regulations relevant to the air traffic controller;

*Air traffic control equipment*

- b) principles, use and limitations of equipment used in air traffic control;

*General knowledge*

- c) principles of flight; principles of operation and functioning of aircraft, powerplants and systems; aircraft performances relevant to air traffic control operations;

*Human performance and limitations*

- d) human performance and limitations relevant to air traffic control;

*Language*

- e) the language or languages nationally designated for use in air traffic control and ability to speak such language or languages without accent or impediment which would adversely affect radio communication;

*Meteorology*

- f) aeronautical meteorology; use and appreciation of meteorological documentation and information; origin and characteristics of weather phenomena affecting flight operations and safety; altimetry;

*Navigation*

- g) principles of air navigation; principle, limitation and accuracy of navigation systems and visual aids; and

*Operational procedures*

- h) air traffic control, communication, radiotelephony and phraseology procedures (routine, non routine and emergency); use of the relevant aeronautical documentation; safety practices associated with flight.

**4.4.1.3 Experience**

The applicant shall have completed an approved training course and not less than three months' satisfactory service engaged in the actual control of air traffic under the supervision of an appropriately rated air traffic controller. The experience requirements specified for air traffic controller ratings in 4.5 may be credited as part of the experience specified in this paragraph.

**4.4.1.4 Medical fitness**

The applicant shall hold a current Class 3 Medical Assessment.

**4.5 Air traffic controller ratings**

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#### 4.5.1 Categories of air traffic controller ratings

##### 4.5.1.1 Air traffic controller ratings shall comprise the following categories:

- a) aerodrome control rating;
- b) approach control rating;
- c) approach radar control rating;
- d) approach precision radar control rating;
- e) area control rating; and
- f) area radar control rating.
- g) clearance delivery rating

*Note.- The World Meteorological Organization has specified requirements for personnel making meteorological observations which apply to air traffic controllers providing such a service.*

#### 4.5.2 Requirements for air traffic controller ratings

##### 4.5.2.1 Knowledge

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted, in at least the following subjects in so far as they affect the area of responsibility:

- a) *aerodrome control rating:*
  - 1) aerodrome layout; physical characteristics and visual aids;
  - 2) airspace structure;
  - 3) applicable rules, procedures and source of information;
  - 4) air navigation facilities;
  - 5) air traffic control equipment and its use;
  - 6) terrain and prominent landmarks;
  - 7) characteristics of air traffic;
  - 8) weather phenomena; and
  - 9) emergency and search and rescue plans;
- b) *approach control and area control ratings:*
  - 1) airspace structure;
  - 2) applicable rules, procedures and source of information;

- 3) air navigation facilities;
  - 4) air traffic control equipment and its use;
  - 5) terrain and prominent landmarks;
  - 6) characteristics of air traffic and traffic flow;
  - 7) weather phenomena; and
  - 8) emergency and search and rescue plans; and
- c) *approach radar, approach precision radar and area radar control ratings:* The applicant shall meet the requirements specified in b) in so far as they affect the area of responsibility, and shall have demonstrated a level of knowledge appropriate to the privileges granted, in at least the following additional subjects:
- 1) principles, use and limitations of radar, other surveillance systems and associated equipment; and
  - 2) procedures for the provision of approach, precision approach or area radar control services, as appropriate, including procedures to ensure appropriate terrain clearance.
- d) clearance delivery rating- The applicant shall meet the requirements specified in 4.4.1 and shall meet the requirements of at least one of the ratings set out in a),b),and c) of 4.5.

#### 4.5.2.2 *Experience*

##### 4.5.2.2.1 The applicant shall have:

- a) satisfactorily completed an approved training course;
- b) provided, satisfactorily, under the supervision of an appropriately rated air traffic controller:
  - 1) *aerodrome control rating:* an aerodrome control service, for a period of not less than 90 hours or one month, whichever is greater, at the unit for which the rating is sought;
  - 2) *approach, approach radar, area or area radar control rating:* the control service for which the rating is sought, for a period of not less than 180 hours or three months, whichever is greater, at the unit for which the rating is sought; and
  - 3) *approach precision radar control rating:* not less than 200 precision approaches of which not more than 100 shall have been carried out on a radar simulator approved for that purpose by the CAD. Not less than 50 of those precision approaches shall have been carried out at the unit and on the equipment for which the rating is sought; and

4) *clearance delivery rating*: provide assistant services and clearance delivery services at the air traffic services unit for which the rating is sought for at least 50 hours but not more than 100 hours.

- c) if the privileges of the approach radar control rating include surveillance radar approach duties, the experience shall include not less than 25 plan position indicator (PPI) approaches on the surveillance equipment of the type in use at the unit for which the rating is sought and under the supervision of an appropriately rated approach radar controller.

4.5.2.2.2 The experience specified in 4.5.2.2.1 b) shall have been completed within the 6-month period immediately preceding application.

4.5.2.2.3 When the applicant already holds an air traffic controller rating in another category, or the same rating for another unit, the CAD shall determine whether the experience requirement of 4.5.2.2 can be reduced, and if so, to what extent.

#### 4.5.2.3 *Skill*

The applicant shall have demonstrated, at a level appropriate to the privileges being granted, the skill, judgement and performance required to provide a safe, orderly and expeditious control service.

#### 4.5.2.4 *Concurrent issuance of two air traffic controller ratings*

When two air traffic controller ratings are sought concurrently, the CAD shall determine the applicable requirements on the basis of the requirements for each rating. These requirements shall not be less than those of the more demanding rating.

#### 4.5.3 Privileges of the holder of the air traffic controller rating(s) and the conditions

\ to be observed in exercising such privileges

4.5.3.1 Subject to compliance with the requirements specified in 1.2.5 and 1.2.6, the privileges of the holder of an air traffic controller licence endorsed with one or more of the undermentioned ratings shall be:

- a) *aerodrome control rating*: to provide or to supervise the provision of aerodrome control service for the aerodrome for which the licence holder is rated;
- b) *approach control rating*: to provide or to supervise the provision of approach control service for the aerodrome or aerodromes for which the licence holder is rated, within the airspace or portion thereof, under the jurisdiction of the unit providing approach control service;
- c) *approach radar control rating*: to provide and/or supervise the provision of approach control service with the use of radar or other surveillance systems for the aerodrome or aerodromes for which the licence holder is rated, within the airspace or portion thereof, under the jurisdiction of the unit providing approach control service;

1) subject to compliance with the provisions of 4.5.2.2.1 c), the privileges shall include the provision of surveillance radar approaches;

- d) *approach precision radar control rating*: to provide and/or supervise the provision of precision approach radar service at the aerodrome for which the licence holder is rated;
- e) *area control rating*: to provide and/or supervise the provision of area control service within the control area or portion thereof, for which the licence holder is rated; and
- f) *area radar control rating*: to provide and/or supervise the provision of area control service with the use of radar, within the control area or portion thereof, for which the licence holder is rated.
- g) *clearance delivery rating*: to provide assistant services and clearance delivery services at the air traffic service unit for which the rating is validated and use such equipment to provide such assistant services and clearance delivery services as appropriate.

4.5.3.2 Before exercising the privileges indicated in 4.5.3.1, the licence holder shall be familiar with all pertinent and current information.

4.5.3.3 A CAD having issued an air traffic controller licence shall not permit the holder thereof to carry out instruction in an operational environment unless such holder has received proper authorization.

#### 4.5.3.4 *Validity of ratings*

A rating shall become invalid when an air traffic controller has ceased to exercise the privileges of the rating for a period of three months. A rating shall remain invalid until the controller's ability to exercise the privileges of the rating has been re-established.

## 4.6 Flight operations officer/flight dispatcher licence

4.6.1 Requirements for the issue of the licence

### 4.6.1.1 *Age*

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

### 4.6.1.2 *Knowledge*

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

#### *Air law*

- a) rules and regulations relevant to the holder of a flight operations officer licence; appropriate air traffic services practices and procedures;

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*Aircraft general knowledge*

- b) principles of operation of aeroplane powerplants, systems and instruments;
- c) operating limitations of aeroplanes and powerplants;
- d) minimum equipment list;

*Flight performance calculation and planning procedures*

- e) effects of loading and mass distribution on aircraft performance and flight characteristics; mass and balance calculations;
- f) operational flight planning; fuel consumption and endurance calculations; alternate airport selection procedures; en-route cruise control; extended range operation;
- g) preparation and filing of air traffic services flight plans;
- h) basic principles of computer-assisted planning systems;

*Meteorology*

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

*Navigation*

- k) principles of air navigation with particular reference to instrument flight;

*Operational procedures*

- l) use of aeronautical documentation;
- m) operational procedures for the carriage of freight and dangerous goods;
- n) procedures relating to aircraft accidents and incidents; emergency flight procedures;
- o) procedures relating to unlawful interference and sabotage of aircraft;

*Principles of flight*

- p) principles of flight relating to the appropriate category of aircraft; and

*Radiocommunication*

- q) procedures for communicating with aircraft and relevant ground stations.

4.6.1.3 *Experience*

4.6.1.3.1 The applicant shall have gained the following experience:

- a) a total of two years' service in any one or in any combination of the capacities specified in 1) to 3) inclusive, provided that in any combination of experience the period serviced in any capacity shall be at least one year:
  - 1) a flight crew member in air transportation; or
  - 2) a meteorologist in an organization dispatching aircraft in air transportation; or
  - 3) an air traffic controller; or a technical supervisor of flight operations officers or air transportation flight operations systems;

*or*
- b) at least one year as an assistant in the dispatching of air transport;

*or*

- c) have satisfactorily completed a course of approved training.

4.6.1.3.2 The applicant shall have served under the supervision of a flight operations officer for at least 90 working days within the six months immediately preceding the application.

4.6.1.4 *Skill*

The applicant shall have demonstrated the ability to:

- a) make an accurate and operationally acceptable weather analysis from a series of daily weather maps and weather reports; provide an operationally valid briefing on weather conditions prevailing in the general neighbourhood of a specific air route; forecast weather trends pertinent to air transportation with particular reference to destination and alternates;
- b) determine the optimum flight path for a given segment, and create accurate manual and/or computer generated flight plans; and
- c) provide operating supervision and all other assistance to a flight in actual or simulated adverse weather conditions, as appropriate to the duties of the holder of a flight operations officer licence.

4.6.2 Privileges of the holder of the licence and the conditions to be observed in exercising such privileges

Subject to compliance with the requirements specified in 1.2.5, the privileges of the holder of a flight operations officer licence shall be to serve in that capacity with responsibility for each area for which the applicant meets the requirements specified in Annex 6.



**CHAPTER 5. SPECIFICATIONS FOR PERSONNEL LICENCES**

5.1 Personnel licences issued by a CAD in accordance with the relevant provisions of this Annex shall conform to the following specifications:

5.1.1 Detail

The following details shall appear on the licence:

- I) Name of State (in bold type);
- II) Title of licence (in very bold type);
- III) Serial number of the licence, in arabic numerals , given by the authority issuing the licence;
- IV) Name of holder in full (in roman alphabet);
- V) Address of holder;
- VI) Nationality of holder;
- VII) Signature of holder;
- VIII) Authority and, where necessary, conditions under which the licence is issued;
- IX) Certification concerning validity and authorization for holder to exercise privileges appropriate to licence;
- X) Signature of officer issuing the licence and the date of such issue;
- XI) Seal or stamp of authority issuing the licence;
- XII) Ratings, e.g., category, class, type of aircraft, airframe, aerodrome control, etc.;
- XIII) Remarks, i.e., special endorsements relating to limitations and endorsements for privileges;
- XIV) Any other details desired by the State issuing the licence.

5.1.2 Material

First quality paper or other suitable material shall be used and the items mentioned in 5.1.1 shown clearly thereon.

5.1.3 Colour

5.1.3.1 Where the same coloured material is used for all licences issued by a CAD , that colour shall be white.

5.1.3.2 Where licences issued by a CAD carry a distinguishing colour marking, the colours shall be as follows:

- a) private pilot - aeroplane light brown
- b) commercial pilot - aeroplane light blue
- c) airline transport pilot - aeroplane dark green
- d) private pilot - helicopter light grey
- e) commercial pilot - helicopter dark grey
- f) airline transport pilot - helicopter two or more dark grey stripes on white background
- g) flight engineer brown
- h) aircraft maintenance (technician/engineer/mechanic) Category A & C maroon
- i) aircraft maintenance (technician/engineer/mechanic) Category B maroon
- j) air traffic controller yellow
- k) flight operations officer light green

5.1.4 Language

Licences shall be issued in English.

5.1.5 Arrangement of items

Item headings on the licence shall be uniformly numbered in roman numerals as indicated in 5.1.1, so that on any licence the number will, under any arrangement, refer to the same item heading.

## CHAPTER 6. MEDICAL PROVISIONS FOR LICENSING

*Note 1.- The Medical Provisions established in this Chapter cannot, on their own, be sufficiently detailed to cover all possible individual situations. Of necessity many decisions relating to the evaluation of medical fitness must be left to the judgement and discretion of the individual designated medical examiner. The evaluation must, therefore, be based on a medical examination conducted throughout in accordance with the high standards of medical practice. Due regard must be given to the privileges granted by the licence applied for or held by the applicant for the Medical Assessment, and the conditions under which the licence holder is going to exercise those privileges in carrying out assigned duties.*

Note 2.- Attention is called to the administrative clause in 1.2.4.8 dealing with accredited medical conclusion.

## 6.1 Medical Assessments - General

### 6.1.1 Classes of Medical Assessment

Three classes of Medical Assessment shall be established as follows:

a) Class 1 Medical Assessment; applies to applicants for, and holders of:

commercial pilot licences - aeroplane and helicopter  
airline transport pilot licences - aeroplane and helicopter  
flight navigator licences  
flight engineer licences

b) Class 2 Medical Assessment; applies to applicants for, and holders of:

private pilot licences - aeroplane and helicopter  
glider pilot licences  
free balloon pilot licences

c) Class 3 Medical Assessment; applies to applicants for, and holders of:

air traffic controller licences.

6.1.2 The applicant for a Medical Assessment shall provide the medical examiner with a personally certified statement of 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 statement shall be dealt with in accordance with 1.2.4.5.1.

6.1.3 The medical examiner shall report to the CAD 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 licence being applied for, or held, is not likely to jeopardize flight safety (1.2.4.8).

6.1.4 The requirements to be met for the renewal of a Medical Assessment are the same as those for the initial assessment except where otherwise specifically stated.

Note.- The intervals between routine medical examinations for the purpose of renewing Medical Assessments are specified in 1.2.5.2.

## 6.2 Requirements for Medical Assessments

### 6.2.1 General

An applicant for a Medical Assessment issued in accordance with the terms of 1.2.4.1 shall undergo a medical examination based on the following requirements:

- 
- a) physical and mental;
  - b) visual and colour perception; and
  - c) hearing.

#### 6.2.2 Physical and mental requirements

An applicant for any class of Medical Assessment shall be required to be free from:

- a) any abnormality, congenital or acquired, or
- b) any active, latent, acute or chronic disability, or
- c) any wound, injury or sequelae from operation,

such as would entail a degree of functional incapacity which is likely to interfere with the safe operation of an aircraft or with the safe performance of duties.

#### 6.2.3 Visual requirements

The methods in use for the measurement of visual acuity are likely to lead to differing evaluations. To achieve uniformity, therefore, CAD will ensure that equivalence in the evaluation of methods be obtained.

##### 6.2.3.1 *The following should be adopted for tests of visual acuity:*

- a) 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 metre should be adopted. The light level of the room should be approximately one-fifth of the test illumination level.
- b) For a visual acuity 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 metre should be adopted.
- c) Visual acuity should be measured by means of a series of optotypes of Landolt, or similar optotypes, placed at a distance of 6 m from the candidate, or 5 m as appropriate to the method of testing adopted.

#### 6.2.4 Colour perception requirements

CAD will use such methods of examination as will guarantee reliable testing of colour perception.

6.2.4.1 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 duties.

6.2.4.2 The applicant shall be tested for the ability to correctly identify a series of pseudoisochromatic 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

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the International Commission on Illumination (ICI).

- 6.2.4.2.1 An applicant obtaining a satisfactory score as prescribed by the CAD should be assessed as fit. An applicant failing to obtain a satisfactory score in such a test may nevertheless be assessed as fit provided the applicant is able to readily and correctly identify aviation coloured lights displayed by means of a recognized colour perception lantern.

### 6.2.5 Hearing requirements

Hearing requirements are established in addition to the ear examinations conducted during the medical examination for the physical and mental requirements.

- 6.2.5.1 The applicant shall be required to be free from any hearing defect which would interfere with the safe performance of duties in exercising the privileges of the licence.

*Note 1. The reference zero for calibration of pure-tone audiometers used for applying 6.3.4.1 and 6.5.4.1 is that of the International Organization for Standardization (ISO) Recommendation R389, 1964.*

*Note 2. The frequency composition of the background noise referred to in 6.3.4.1 a) and 6.5.4.1 a) is defined only to the extent that the frequency range 600 to 4 800 Hz is adequately represented.*

*Note 3. In the choice of speech material, aviation-type material is not to be used exclusively for the above tests. Lists of phonetically-balanced words in use by a number of CAD will have given satisfactory results.*

*Note 4. A quiet room for the purposes of testing the hearing requirements is a room in which the intensity of the background noise is less than 50 dB when measured on "slow" response of an "A"-weighted sound level meter.*

*Note 5. For the purposes of hearing requirements the sound level of an average conversational voice at point of output ranges from 85 to 95 dB.*

## 6.3 Class 1 Medical Assessment

### 6.3.1 Assessment issue and renewal

- 6.3.1.1 An applicant for a commercial pilot licence - aeroplane or helicopter, an airline transport pilot licence - aeroplane or helicopter, a flight engineer licence or a flight navigator licence, shall undergo an initial medical examination for the issue of a Class 1 Medical Assessment.

- 6.3.1.2 Except where otherwise stated in this section, holders of commercial pilot licences - aeroplane or helicopter, airline transport pilot licences - aeroplane or helicopter, flight engineer licences or flight navigator licences, shall have their Class 1 Medical Assessments renewed at intervals not exceeding those specified in 1.2.5.2.

6.3.1.3 When the CAD is satisfied that the requirements of this section and the general provisions of 6.1 and 6.2 have been met, a Class 1 Medical Assessment shall be issued to the applicant.

### 6.3.2 Physical and mental requirements

The medical examination shall be based on the following requirements.

6.3.2.1 The applicant shall not suffer from any disease or disability which could render that applicant likely to become suddenly unable either to operate an aircraft safely or to perform assigned duties safely.

6.3.2.2 The applicant shall have no established medical history or clinical diagnosis of:

- a) a psychosis;
- b) alcoholism;
- c) drug dependence;
- d) any personality disorder, particularly if severe enough to have repeatedly resulted in overt acts;
- e) a mental abnormality, or neurosis of a significant degree;

such as might render the applicant unable to safely exercise the privileges of the licence applied for or held, unless accredited medical conclusion indicates that in special circumstances, the applicant's failure to meet the requirement is such that exercise of the privileges of the licence applied for is not likely to jeopardize flight safety.

6.3.2.2.1 The applicant should 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 licence or rating applied for or held.

Note.- A history of acute toxic psychosis need not be regarded as disqualifying, provided that the applicant has suffered no permanent impairment.

6.3.2.3 The applicant shall have no established medical history or clinical diagnosis of any of the following:

- a) 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 exercise of the applicant's licence and rating privileges;
- b) epilepsy;
- c) any disturbance of consciousness without satisfactory medical explanation of cause.

- 6.3.2.4 Cases of head injury, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe exercise of the applicant's licence and rating privileges shall be assessed as unfit.
- 6.3.2.5 The applicant shall not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe exercise of the applicant's licence and rating privileges. A history of proven myocardial infarction shall be disqualifying.
- Note. 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.
- 6.3.2.5.1 Electrocardiography shall form part of the heart examination for the first issue of a licence and shall be included in re-examinations of applicants between the ages of 30 and 40 no less frequently than every two years, and thereafter no less frequently than annually.
- Note 1. The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify disqualification without further thorough cardiovascular investigation.*
- Note 2. Guidance on resting and exercise electrocardiography is published in the Manual of Civil Aviation Medicine.*
- 6.3.2.6 The systolic and diastolic blood pressures shall be within normal limits.
- Note 1. 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 licence and rating privileges.*
- Note 2. Extensive guidance on the subject is published in the Manual of Civil Aviation Medicine.*
- 6.3.2.7 There shall be no significant functional nor structural abnormality of the circulatory tree.
- 6.3.2.8 There shall be no acute disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleura. Radiography shall form a part of the medical examination in all doubtful clinical cases.
- 6.3.2.8.1 *Radiography should form a part of the initial chest examination and should be repeated if required.*
- 6.3.2.9 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.
- 6.3.2.10 Cases of pulmonary emphysema should be assessed as unfit if the condition is causing symptoms.
- 6.3.2.11 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.

*Note 1. Guidance material on assessment of respiratory diseases is published in the Manual of Civil Aviation Medicine.*

*Note 2. Guidance material on hazards of medications is published in the Manual of Civil Aviation Medicine.*

- 6.3.2.12 Cases of disabling disease with important impairment of function of the gastrointestinal tract or its adnexae shall be assessed as unfit.
- 6.3.2.13 The applicant shall be required to be completely free from those hernias that might give rise to incapacitating symptoms.
- 6.3.2.14 Any sequelae of disease or surgical intervention on any part of the digestive tract or its adnexae, likely to cause incapacity in flight, in particular any obstructions due to stricture or compression shall be assessed as unfit.
- 6.3.2.14. 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 should be assessed as unfit until such time as the medical authority designated for the purpose by the CAD will and having access to the details of the operation concerned considers that the effects of the operation are not likely to cause incapacity in the air.
- 6.3.2.15 Cases of metabolic, nutritional or endocrine disorders likely to interfere with the safe exercise of the applicant's licence and rating privileges shall be assessed as unfit.
- 6.3.2.16 Proven cases of diabetes mellitus shown to be satisfactorily controlled without the use of any anti-diabetic drug, may be assessed as fit.
- 6.3.2.17 Cases of severe and moderate enlargement of the spleen persistently below the costal margin shall be assessed as unfit.
- 6.3.2.18 Cases of significant localized and generalized enlargement of the lymphatic glands and of diseases of the blood shall be assessed as unfit, except in cases where accredited medical conclusion indicates that the condition is not likely to affect the safe exercise of the applicant's licence and rating privileges.
- 6.3.2.18.1 Possession of the sickle cell trait should not be a reason for disqualification unless there is positive medical evidence to the contrary.
- 6.3.2.18.2 Cases in 6.3.2.18 due to a transient condition should be assessed as only temporarily unfit.
- 6.3.2.19 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 of pathological significance. 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.



- 6.3.2.20 Any sequelae of disease or surgical procedures on the kidneys and the urinary tract likely to cause 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.
- 6.3.2.20.1 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 should be assessed as unfit until such time as the medical authority designated for the purpose by the CAD will and having access to the details of the operation concerned considers that the effects of the operation are not likely to cause incapacity in the air.
- 6.3.2.21 An applicant for the first issue of a licence who has a personal history of syphilis shall be required to furnish evidence, satisfactory to the medical examiner, that the applicant has undergone adequate treatment.
- 6.3.2.22 Applicants who have a history of severe menstrual disturbances that have proved unamenable to treatment and that are likely to interfere with the safe exercise of the applicant's licence and rating privileges shall be assessed as unfit.
- 6.3.2.22.1 Applicants who have undergone gynaecological operations should be considered individually.
- 6.3.2.23 Pregnancy shall be a cause of temporary unfitness.
- 6.3.2.23.1 In the absence of significant abnormalities, accredited medical conclusion may indicate fitness during the middle months of pregnancy.
- 6.3.2.24 Following confinement or termination of pregnancy, the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-examination and has been assessed as fit.
- 6.3.2.25 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 exercise of the applicant's licence and rating privileges may be assessed as fit.
- 6.3.2.26 There shall be:
- a) no active pathological process, acute or chronic, of the internal ear or of the middle ear;
  - b) no unhealed (unclosed) perforation of the tympanic membranes. A single dry perforation need not render the applicant unfit. Licences shall not be issued or renewed in these circumstances unless the appropriate hearing requirements in 6.3.4 are complied with;
  - c) no permanent obstruction of the Eustachian tubes;
  - d) no permanent disturbances of the vestibular apparatus. Transient conditions may be assessed as temporarily unfit.

Note.- The details of the hearing requirements are set out in 6.3.4.

6.3.2.27 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.

### 6.3.3 Visual requirements

The medical examination shall be based on the following requirements.

6.3.3.1 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 interfere with the safe exercise of the applicant's licence and rating privileges.

6.3.3.2 The applicant shall be required to have normal fields of vision.

6.3.3.3 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) the applicant possesses a visual acuity without correction in each eye separately, not less than 6/60 (20/200, 0.1) or the refractive error falls within the range of "3 dioptries (equivalent spherical error);
- b) such correcting lenses are worn when exercising the privileges of the licence or rating applied for or held; and
- c) a spare set of suitable correcting lenses shall be readily available when exercising the privileges of the applicant's licence.

*Note 1. 6.3.3.3 c) is the subject of Standards in Annex 6, Part I.*

*Note 2. An applicant accepted as meeting those provisions of 6.3.3.3 a) which refer to refractive error 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 CAD. The uncorrected visual acuity is measured and recorded at each re-examination. Conditions which indicate a need to redetermine 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.*

6.3.3.4 The applicant shall have the ability to read the N5 chart or its equivalent at a distance selected by that applicant in the range of 30 to 50 cm and the ability to read the N14 chart or its equivalent at a distance of 100 cm. 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 licence. No more than one pair of correcting lenses shall be used in demonstrating compliance with this visual requirement. Single-vision near correction shall not be acceptable.

*Note 1. N5 and N14 refer to "Times Roman" type-face.*

*Note 2. An applicant who needs correction to meet this requirement will require*

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*"lookover", bifocal or perhaps trifocal lenses in order to read the instruments and a chart or manual held in the hand, and also to make use of distant vision through the windscreen without removing the 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 the applicant is likely to function.*

6.3.3.4.1 An applicant should have a near point of accommodation of 30 cm while wearing the correcting lenses, if any, required by 6.3.3.3. An applicant who does not meet this provision may nevertheless be assessed as fit if able to produce evidence, satisfactory to the CAD, of having been fitted with correction for near and intermediate-range vision, or of not requiring such correction at present. Such an applicant should be required to wear the correction needed for near and intermediate-range vision, in addition to any correction required by 6.3.3.3, while exercising the privileges of the licence.

#### 6.3.4 Hearing requirements

The medical examination shall be based on the following requirements.

6.3.4.1 The applicant, tested on a pure-tone audiometer at first issue of licence, not less than once every five years up to the age of 40 years, and thereafter not less than once every three years, shall not have a hearing loss, in either ear separately, of more than 35 dB at any of the frequencies 500, 1 000 or 2 000 Hz, or more than 50 dB at 3 000 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 the ability to hear an average conversational voice in a quiet room, using both ears, at a distance of 2 m from the examiner, with the back turned to the examiner.

6.3.4.1.1 Alternatively, other methods providing equivalent results to those specified in 6.3.4.1 shall be used.

## 6.4 Class 2 Medical Assessment

### 6.4.1 Assessment issue and renewal

6.4.1.1 An applicant for a private pilot licence - aeroplane or helicopter, a glider pilot licence or a free balloon pilot licence shall undergo an initial medical examination for the issue of a Class 2 Medical Assessment.

6.4.1.2 Except where otherwise stated in this section, holders of private pilot licences C aeroplane or helicopter, glider pilot licences or free balloon pilot licences, shall have their Class 2 Medical Assessments renewed at intervals not exceeding those specified in 1.2.5.2.

6.4.1.3 When the CAD is satisfied that the requirements of this section and the general provisions of 6.1 and 6.2 have been met, a Class 2 Medical Assessment shall be issued to the applicant.

#### 6.4.2 Physical and mental requirements

The medical examination shall be based on the following requirements.

6.4.2.1 The applicant shall not suffer from any disease or disability which could render that applicant likely to become suddenly unable either to operate an aircraft safely or to perform assigned duties safely.

6.4.2.2 The applicant shall have no established medical history or clinical diagnosis of:

- a) a psychosis;
- b) alcoholism;
- c) drug dependence;
- d) any personality disorder, particularly if severe enough to have repeatedly resulted in overt acts;
- e) a mental abnormality, or neurosis of a significant degree;

such as might render the applicant unable to safely exercise the privileges of the licence applied for or held, unless accredited medical conclusion indicates that in special circumstances, the applicant's failure to meet the requirement is such that exercise of the privileges of the licence applied for is not likely to jeopardize flight safety.

6.4.2.2. The applicant should 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 licence or rating applied for or held.

*Note. A history of acute toxic psychosis need not be regarded as disqualifying, provided that the applicant has suffered no permanent impairment.*

6.4.2.3 The applicant shall have no established medical history or clinical diagnosis of any of the following:

- a) 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 exercise of the applicant's licence and rating privileges;
- b) epilepsy;
- c) any disturbance of consciousness without satisfactory medical explanation of cause.

6.4.2.4 Cases of head injury, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe exercise of the applicant's licence and rating privileges shall be assessed as unfit.

6.4.2.5 The applicant shall not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe exercise of the applicant's licence and rating privileges. A history of proven myocardial infarction shall be disqualifying.

Note. 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.

6.4.2.5.1 Electrocardiography to form part of the heart examination for the first issue of a licence, at the first re-examination after the age of 40 and thereafter no less frequently than every five years, and in re-examinations in all doubtful cases.

*Note 1. The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify disqualification without further thorough cardiovascular investigation.*

*Note 2. Guidance on resting and exercise electrocardiography is published in the Manual of Civil Aviation Medicine.*

6.4.2.6 The systolic and diastolic blood pressures shall be within normal limits.

*Note 1.- 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 licence and rating privileges.*

*Note 2.- Extensive guidance on the subject is published in the Manual of Civil Aviation Medicine.*

6.4.2.7 There shall be no significant functional nor structural abnormality of the circulatory tree. The presence of varicosities does not necessarily entail unfitness.

6.4.2.8 There shall be no acute disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleura. Radiography shall form a part of the medical examination in all doubtful clinical cases.

6.4.2.8.1 Radiography should form a part of the initial chest examination and should be repeated if required.

6.4.2.9 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.

6.4.2.10 Cases of pulmonary emphysema should be assessed as unfit only if the condition is causing symptoms.

6.4.2.11 Cases of active pulmonary tuberculosis, duly diagnosed, shall be assessed as unfit. Cases of quiescent or healed lesions which are known to be

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tuberculous, or are presumably tuberculous in origin, may be assessed as fit.

*Note 1. Guidance material on assessment of respiratory diseases is published in the Manual of Civil Aviation Medicine.*

*Note 2. Guidance material on hazards of medications is published in the Manual of Civil Aviation Medicine.*

- 6.4.2.12 Cases of disabling disease with important impairment of function of the gastrointestinal tract or its adnexae shall be assessed as unfit.
- 6.4.2.13 The applicant shall be required to be completely free from those hernias that might give rise to incapacitating symptoms.
- 6.4.2.14 Any sequelae of disease or surgical intervention on any part of the digestive tract or its adnexae, likely to cause incapacity in flight, in particular any obstructions due to stricture or compression shall be assessed as unfit.
- 6.4.2.14.1 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 should be assessed as unfit until such time as the medical authority designated for the purpose by the CAD will and having access to the details of the operation concerned considers that the effects of the operation are not likely to cause incapacity in the air.
- 6.4.2.15 Cases of metabolic, nutritional or endocrine disorders likely to interfere with the safe exercise of the applicant's licence and rating privileges shall be assessed as unfit.
- 6.4.2.16 Proven cases of diabetes mellitus shown to be satisfactorily controlled without the use of any anti-diabetic drug, may be assessed as fit. The use of anti-diabetic drugs for the control of diabetes mellitus is disqualifying except for those oral drugs administered under conditions permitting appropriate medical supervision and control and which, according to accredited medical conclusion, are compatible with the safe exercise of the applicant's licence and rating privileges.
- 6.4.2.17 Cases of significant localized and generalized enlargement of the lymphatic glands and of diseases of the blood shall be assessed as unfit, except in cases where accredited medical conclusion indicates that the condition is not likely to affect the safe exercise of the applicant's licence and rating privileges.
- 6.4.2.17. Possession of the sickle cell trait should not be a reason for disqualification unless there is positive medical evidence to the contrary.
- 6.4.2.17.2 Cases in 6.4.2.17 due to a transient condition should be assessed as only temporarily unfit.
- 6.4.2.18 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 of pathological significance. 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.

- 6.4.2.19 Any sequelae of disease or surgical procedures on the kidneys and the urinary tract likely to cause 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.
- 6.4.2.19.1 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 should be assessed as unfit until such time as the medical authority designated for the purpose by the CAD and having access to the details of the operation concerned considers that the effects of the operation are not likely to cause incapacity in the air.
- 6.4.2.20 An applicant for the first issue of a licence who has a personal history of syphilis shall be required to furnish evidence, satisfactory to the medical examiner, that the applicant has undergone adequate treatment.
- 6.4.2.21 Applicants who have a history of severe menstrual disturbances that have proved unamenable to treatment and that are likely to interfere with the safe exercise of the applicant's licence and rating privileges shall be assessed as unfit.
- 6.4.2.21.1 Applicants who have undergone gynaecological operations should be considered individually.
- 6.4.2.22 Pregnancy shall be a cause of temporary unfitness.
- 6.4.2.22.1 In the absence of any significant abnormalities, accredited medical conclusion may indicate fitness during the middle months of pregnancy.
- 6.4.2.23 Following confinement or termination of pregnancy, the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-examination and has been assessed as fit.
- 6.4.2.24 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 exercise of the applicant's licence and rating privileges may be assessed as fit.
- 6.4.2.25 There shall be:
- a) no active pathological process, acute or chronic, of the internal ear or of the middle ear;
  - b) no permanent disturbances of the vestibular apparatus. Transient conditions may be assessed as temporarily unfit.
- Note. The details of the hearing requirements are set out in 6.4.4.
- 6.4.2.26 There shall be no serious malformation nor serious, acute or chronic affection of the buccal cavity or upper respiratory tract.

## 6.4.3 Visual requirements

The medical examination shall be based on the following requirements.

6.4.3.1 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 interfere with the safe exercise of the applicant's licence and rating privileges.

6.4.3.2 The applicant shall be required to have normal fields of vision.

6.4.3.3 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 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 licence or rating applied for or held; and
- b) a spare set of suitable correcting lenses shall be readily available when exercising the privileges of the applicant's licence.

6.4.3.3. If the visual acuity required by 6.4.3.3 is obtained only 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 dioptres (equivalent spherical error) may be assessed as fit. Applicants whose refractive error in either eye falls outside the range of "5 dioptres (equivalent spherical error) may however be accepted as fit according to accredited medical conclusion.

*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 CAD. The uncorrected visual acuity is measured and recorded at each re-examination. Conditions which indicate a need to redetermine 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.*

6.4.3.4 The applicant shall have the ability to read the N5 chart or its equivalent at a distance selected by that applicant in the range of 30 to 50 cm. 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 licence. No more than one pair of correcting lenses shall be used in demonstrating compliance with this visual requirement. 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 the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.*



#### 6.4.4 Hearing requirements

The medical examination shall be based on the following requirements.

- 6.4.4.1 The applicant shall be able to hear an average conversational voice in a quiet room, using both ears, at a distance of 2 m from the examiner, with the back turned to the examiner.

### 6.5 Class 3 Medical Assessment

#### 6.5.1 Assessment issue and renewal

- 6.5.1.1 An applicant for an air traffic controller licence shall undergo an initial medical examination for the issue of a Class 3 Medical Assessment.

- 6.5.1.2 Except where otherwise stated in this section, holders of air traffic controller licences shall have their Class 3 Medical Assessments renewed at intervals not exceeding those specified in 1.2.5.2.

- 6.5.1.3 When the CAD is satisfied that the requirements of this section and the general provisions of 6.1 and 6.2 have been met, a Class 3 Medical Assessment shall be issued to the applicant.

#### 6.5.2 Physical and mental requirements

The medical examination shall be based on the following requirements.

- 6.5.2.1 The applicant shall not suffer from any disease or disability which could render that applicant likely to become suddenly unable to perform duties safely.

- 6.5.2.2 The applicant shall have no established medical history or clinical diagnosis of:

- a) a psychosis;
- b) alcoholism;
- c) drug dependence;
- d) any personality disorder, particularly if severe enough to have repeatedly resulted in overt acts;
- e) a mental abnormality, or neurosis of a significant degree;

such as might render the applicant unable to safely exercise the privileges of the licence applied for or held, unless accredited medical conclusion indicates that in special circumstances, the applicant's failure to meet the requirement is such that exercise of the privileges of the licence applied for is not likely to jeopardize flight safety.

- 6.5.2.2. The applicant should 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 licence or rating applied for or held.

*Note. A history of acute toxic psychosis need not be regarded as disqualifying, provided that the applicant has suffered no permanent impairment.*

- 6.5.2.3 The applicant shall have no established medical history or clinical diagnosis of any of the following:
- a) 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 exercise of the applicant's licence and rating privileges;
  - b) epilepsy;
  - c) any disturbance of consciousness without satisfactory medical explanation of cause.

- 6.5.2.4 Cases of head injury, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe exercise of the applicant's licence privileges shall be assessed as unfit.

- 6.5.2.5 The applicant shall not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe exercise of the applicant's licence privileges. An applicant indicated by accredited medical conclusion to have made a satisfactory recovery from myocardial infarction may be assessed as fit.

*Note. 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.*

- 6.5.2.5. Electrocardiography will form part of the heart examination for the first issue of a licence, at the first re-examination after the age of 40 and thereafter no less frequently than every five years, and in re-examinations in all doubtful cases.

*Note 1. The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify disqualification without further thorough cardiovascular investigation.*

*Note 2. Guidance on resting and exercise electrocardiography is published in the Manual of Civil Aviation Medicine.*

6.5.2.6 The systolic and diastolic blood pressures shall be within normal limits.

*Note 1. 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 licence privileges.*

*Note 2. Extensive guidance on the subject is published in the Manual of Civil Aviation Medicine.*

6.5.2.7 There shall be no significant functional nor structural abnormality of the circulatory tree. The presence of varicosities does not necessarily entail unfitness.

6.5.2.8 There shall be no acute disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleura. Radiography shall form a part of the medical examination in all doubtful clinical cases.

6.5.2.8.1 Radiography will form a part of the initial chest examination and should be repeated if required.

6.5.2.9 Cases of pulmonary emphysema should be assessed as unfit only if the condition is causing symptoms.

6.5.2.10 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.

*Note 1. Guidance material on assessment of respiratory diseases is published in the Manual of Civil Aviation Medicine.*

*Note 2. Guidance material on hazards of medications is published in the Manual of Civil Aviation Medicine.*

6.5.2.11 Cases of disabling disease with important impairment of function of the gastrointestinal tract or its adnexae shall be assessed as unfit.

6.5.2.12 The applicant shall be required to be completely free from those hernias that might give rise to incapacitating symptoms.

6.5.2.13 Any sequelae of disease or surgical intervention on any part of the digestive tract or its adnexae, liable to cause incapacity, in particular any obstructions due to stricture or compression shall be assessed as unfit.

6.5.2.14 Cases of metabolic, nutritional or endocrine disorders likely to interfere with the safe exercise of the applicant's licence privileges shall be assessed as unfit.

6.5.2.15 Proven cases of diabetes mellitus shown to be satisfactorily controlled without the use of any anti-diabetic drug, may be assessed as fit. The use of anti-diabetic drugs for the control of diabetes mellitus is disqualifying except for those oral drugs administered under conditions permitting appropriate medical supervision and control and which, according to accredited medical conclusion, are compatible with the safe exercise of the applicant's licence privileges.

6.5.2.16 Cases of significant localized and generalized enlargement of the lymphatic

glands and of diseases of the blood shall be assessed as unfit, except in cases where accredited medical conclusion indicates that the condition is not likely to affect the safe exercise of the applicant's licence privileges.

- 6.5.2.16. Cases in 6.5.2.16 due to a transient condition should be assessed as only temporarily unfit.
- 6.5.2.17 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 of pathological significance. 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.
- 6.5.2.18 Any sequelae of disease or surgical procedures on the kidneys and the urinary tract liable to cause 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.
- 6.5.2.19 An applicant for the first issue of a licence who has a personal history of syphilis shall be required to furnish evidence, satisfactory to the medical examiner, that the applicant has undergone adequate treatment.
- 6.5.2.20 Applicants who have a history of severe menstrual disturbances that have proved unamenable to treatment and that are likely to interfere with the safe exercise of the applicant's licence privileges shall be assessed as unfit.
- 6.5.2.21 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 exercise of the applicant's licence privileges may be assessed as fit.
- 6.5.2.22 There shall be:
- a) no active pathological process, acute or chronic, of the internal ear or of the middle ear;
  - b) no permanent disturbances of the vestibular apparatus. Transient conditions may be assessed as temporarily unfit.

Note.- The details of the hearing requirements are set out in 6.5.4.

- 6.5.2.23 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.

### 6.5.3 Visual requirements

The medical examination shall be based on the following requirements.

- 6.5.3.1 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 interfere with the safe exercise of the applicant's licence privileges.

6.5.3.2 The applicant shall be required to have normal fields of vision.

6.5.3.3 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) the applicant possesses a visual acuity without correction in each eye separately, not less than 6/60 (20/200, 0.1) or the refractive error falls within the range of "3 dioptries (equivalent spherical error);
- b) such correcting lenses are worn when exercising the privileges of the licence or rating applied for or held; and
- c) a spare set of suitable correcting lenses shall be readily available when exercising the privileges of the applicant's licence.

Note. An applicant accepted as meeting those provisions of 6.5.3.3. a) which refer to refractive error 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 CAD. The uncorrected visual acuity is measured and recorded at each re-examination. Conditions which indicate a need to redetermine 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.

6.5.3.4 The applicant shall have the ability to read the N5 chart or its equivalent at a distance selected by that applicant in the range of 30 to 50 cm and the ability to read the N14 chart or its equivalent at a distance of 100 cm. 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 licence. No more than one pair of correcting lenses shall be used in demonstrating compliance with this visual requirement.

*Note 1. N5 and N14 refer to "Times Roman" type-face.*

*Note 2. Single-vision near correction may be acceptable for certain air traffic control duties. However, it should be realized that 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 air traffic duties the applicant is likely to perform.*

6.5.3.4. An applicant should have a near point of accommodation of 30 cm while wearing the correcting lenses, if any, required by 6.5.3.3. An applicant who does not meet this provision may nevertheless be assessed as fit if able to produce evidence, satisfactory to the CAD, of having been fitted with correction for near and intermediate-range vision, or of not requiring such correction at present. Such an applicant should be required to wear the correction needed for near and intermediate-range vision, in addition to any correction required

by 6.5.3.3, while exercising the privileges of the licence.

#### 6.5.4 Hearing requirements

The medical examination shall be based on the following requirements.

6.5.4.1 The applicant, tested on a pure-tone audiometer at first issue of licence, not less than once every five years up to the age of 40 years, and thereafter not less than once every three years, shall not have a hearing loss, in either ear separately, of more than 35 dB at any of the frequencies 500, 1 000 or 2 000 Hz, or more than 50 dB at 3 000 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 the ability to hear an average conversational voice in a quiet room, using both ears, at a distance of 2 m from the examiner, with the back turned to the examiner.

6.5.4.1.1 Alternatively, other methods providing equivalent results to those specified in 6.5.4.1 shall be used.

## 6.6 EFFECTIVITY

6.6.1 This circular shall become effective from 25th August 2003.



Mahmood Razee  
**DIRECTOR GENERAL OF CIVIL AVIATION**

