

**Civil Aviation Authority of Bangladesh**

**Gazette**

Dhaka, .....,1428/....., 2021

No, CAAB 30.31.0000.111.37.001.21 – In exercise of the power conferred by Section 47, read with Section 14 of the Civil Aviation Act, 2017 (Act No. 18 of 2017), hereinafter referred as the “Act”, the Chairman of the Civil Aviation Authority of Bangladesh is pleased to issue the following Air Navigation Order (ANO).

2. It shall come into force immediately.



**Air Vice Marshal M Mafidur Rahman**

BBP, BSP, BUP, ndu, afwc, psc

Chairman

Civil Aviation Authority of Bangladesh

## CHAPTER 1

### A. Short Title, Commencement and abbreviation

This Air Navigation Order (ANO) may be called the ANO on Personnel Licensing, issued in accordance with the Annex 1 (Thirteenth Edition, July 2020 , up to amendment 176) to the Chicago Convention and referred herein as the “ANO 1” Issue-1. This ANO shall be effective immediately upon published in this Official Gazette.

### ABBREVIATION

AFIS	Aerodrome flight information service
AMOC	Alternate means of compliance
CAAB	Civil Aviation Authority of Bangladesh
C2	Command and control
FSTD	Flight simulation training device
HIV	Human immunodeficiency virus
IFR	Instrument flight rules
RPA	Remotely piloted aircraft
RPAS	Remotely piloted aircraft system
RPS	Remote pilot station
SOP	Standard operating procedure
TEM	Threat and error management
VMC	Visual meteorological conditions

## 1.1 Definitions

When the following terms are used in the Standards and Recommended Practices for Personnel Licensing, they have the following meanings:

**“Air Navigation Order” or “ANO”** means any order issued under Civil Aviation Authority Act, 2017 (Article 32) for regulating aeronautical and non- aeronautical activities.

**Authority** means the Civil Aviation Authority established under section 3 of the Civil Aviation Authority Act, 2017 (Act No. III of 2017).

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

**Adapted competency model.** A group of competencies with their associated description and performance criteria adapted from an ICAO competency framework that an organization uses to develop competency-based training and assessment for a given role.

**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 State of Registry has determined, during the certification process, can be operated safely with a minimum crew of one pilot.

**Aircraft required to be operated with a co-pilot.** A type of aircraft that is required to be operated with a co-pilot, as specified in the flight manual or by the air operator certificate.

**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.

**Airmanship.** The consistent use of good judgement and well-developed knowledge, skills and attitudes to accomplish flight objectives.

**Airship.** A power-driven lighter-than-air aircraft.

**Appropriate airworthiness requirements.** The comprehensive and detailed airworthiness codes established, adopted or accepted by a Contracting State for the class of aircraft, engine or propeller under consideration.

**Approved maintenance organization.** An organization approved by a Contracting State, in accordance with the requirements of Annex 8, Part II, Chapter 6 — Maintenance Organization

Approval, to perform maintenance of aircraft, engine, propeller or parts thereof and operating under supervision approved by that State.

Note.— Nothing in this definition is intended to preclude that the organization and its supervision be approved by more than one State.

**Approved training.** Training conducted under special curricula and supervision approved by a Contracting State.

**Approved training organization.** An organization approved by and operating under the supervision of a Contracting State in accordance with the requirements of Annex 1 to perform approved training.

**ATS surveillance service.** A term used to indicate a service provided directly by means of an ATS surveillance system.

**ATS surveillance system.** A generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft.

Note.— A comparable ground-based system is one that has been demonstrated, by comparative assessment or other methodology, to have a level of safety and performance equal to or better than monopulse SSR.

**Balloon.** A non-power-driven lighter-than-air aircraft.

Note.— For the purposes of this Annex, this definition applies to free balloons.

**Chairman The Chairman of the Authority.**

**Certify as airworthy (to).** To certify that an aircraft or parts thereof comply with current airworthiness requirements after maintenance has been performed on the aircraft or parts thereof.

**Command and control (C2) link.** The data link between the remotely piloted aircraft and the remote pilot station for the purposes of managing the flight.

**Commercial air transport operation.** An aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.

**Competency.** A Dimension of human performance that is used to reliably predict successful performance on the job. A competency is manifested and observed through behaviours that mobilize the relevant knowledge, skills and attitudes to carry out activities or tasks under specified conditions.

**Competency-based training and assessment.** Training and assessment that are characterized by a performance orientation, emphasis on standards of performance and their measurement, and the development of training to the specified performance standards.

**Competency standard.** A level of performance that is defined as acceptable when assessing whether or not competency has been achieved.

**Conditions.** Anything that may qualify a specific environment in which performance will be demonstrated.

**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.

**Credit.** Recognition of alternative means or prior qualifications.

**Cross-country.** A flight between a point of departure and a point of arrival following a pre-planned route using standard navigation procedures.

**Detect and avoid.** The capability to see, sense or detect conflicting traffic or other hazards and take the appropriate action.

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

**Dual instruction time.**<sup>††††</sup> Flight time during which a person is receiving flight instruction from a properly authorized pilot on board the aircraft, or from a properly authorized remote pilot using the remote pilot station during a remotely piloted aircraft flight.

**Error.** An action or inaction by an operational person that leads to deviations from organizational or the operational person's intentions or expectations.

Note.— See Chapter 1 of Annex 19 — Safety Management for a definition of operational personnel.

**Error management.** The process of detecting errors and responding to them with countermeasures that reduce or eliminate the consequences of errors and mitigate the probability of further errors or undesired states.

Note.— See Chapter 6 of Part II, Section I of the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868) and Circular 314 — Threat and Error Management (TEM) in Air Traffic Control for a description of undesired states.

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

**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 Flight simulation training device.

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<sup>†††</sup> Applicable until 2 November 2022.  
<sup>††††</sup> Applicable as of 3 November 2022.

**Flight simulation training device (FSTD).**<sup>†††</sup> 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.

**Flight simulation training device (FSTD).**<sup>††††</sup> 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 or an accurate representation of the remotely piloted aircraft system (RPAS) 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 or realistic RPAS 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 or the RPAS environment in instrument flight conditions.

**Flight simulator.** See Flight simulation training device.

**Flight time — aeroplanes.** The total time from the moment an aeroplane first moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight.

Note.— Flight 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 aeroplane first moves for the purpose of taking off until it finally stops at the end of the flight.

**Flight time — helicopters.** The total time from the moment a helicopter’s rotor blades start turning until the moment the helicopter finally comes to rest at the end of the flight, and the rotor blades are stopped.

**Flight time — remotely piloted aircraft systems.** The total time from the moment a command and control (C2) link is established between the remote pilot station (RPS) and the remotely piloted aircraft (RPA) for the purpose of taking off or from the moment the remote pilot receives control following a handover until the moment the remote pilot completes a handover or the C2 link between the RPS and the RPA is terminated at the end of the flight.

**Glider.** A non-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.

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<sup>†††</sup> Applicable until 2 November 2022.

<sup>††††</sup> Applicable as of 3 November 2022

**Glider flight time.** The total time occupied in flight, whether being towed or not, from the moment the glider first moves for the purpose of taking off until the moment it comes to rest at the end of the flight.

**Handover.** The act of passing piloting control from one remote pilot station to another.

**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.

**Human performance.** Human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.

**ICAO competency framework.** A competency framework, developed by ICAO, is a selected group of competencies for a given aviation discipline. Each competency has an associated description and observable behaviours.

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

**Instrument flight time.**<sup>††††</sup> Time during which a pilot is piloting an aircraft, or a remote pilot is piloting a remotely piloted 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 flight simulation training device approved by the Licensing Authority.

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

**Licensing Authority.** Civil Aviation Authority of Bangladesh (CAAB) is responsible for the licensing of personnel.

Note.— In the provisions of this ANO, CAAB have been given the following responsibilities by the Government:

- a) assessment of an applicant's qualifications to hold a licence or rating;
- b) issue and endorsement of licences and ratings;
- c) designation and authorization of approved persons;
- d) approval of training courses;
- e) approval of the use of flight simulation training devices and authorization for their use in gaining the experience or in demonstrating the skill required for the issue of a licence or rating; and
- f) validation of licences issued by other Contracting States.

**Likely.** In the context of the medical provisions in Chapter 6, likely means with a probability of occurring that is unacceptable to the medical assessor.

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<sup>†††</sup> Applicable until 2 November 2022.

<sup>††††</sup> Applicable as of 3 November 2022.

**Maintenance.** The performance of tasks required to ensure the continuing airworthiness of an aircraft, including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair.

**Medical Assessment.** The evidence issued by licensing authority that the licence holder meets specific requirements of medical fitness.

**Medical assessor.** A physician, appointed by the Licensing Authority, qualified and experienced in the practice of aviation medicine and competent in evaluating and assessing medical conditions of flight safety significance.

Note 1.— Medical assessors evaluate medical reports submitted to the Licensing Authority by medical examiners.

Note 2.— Medical assessors are expected to maintain the currency of their professional knowledge.

**Medical examiner.** A physician with training in aviation medicine and practical knowledge and experience of the aviation environment, who is designated by the Licensing Authority to conduct medical examinations of fitness of applicants for licences or ratings for which medical requirements are prescribed.

**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.

**Monitoring.** A cognitive process to compare an actual to an expected state.

Note.— Monitoring is embedded in the competencies for a given role within an aviation discipline, which serve as countermeasures in the threat and error management model. It requires knowledge, skills and attitudes to create a mental model and to take appropriate action when deviations are recognized.

**Observable behaviour (OB).** A single role-related behaviour that can be observed and may or may not be measurable.

**Performance criteria.**—Statements used to assess whether the required levels of performance have been achieved for a competency. A performance criterion consists of an observable behaviour, condition(s) and a competency standard.

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

**Pilot-in-command.** The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.

**Pilot-in-command under supervision.** Co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command, in accordance with a method of supervision acceptable to the Licensing Authority.

**Pilot flying (PF).** The pilot whose primary task is to control and manage the flight path. The secondary tasks of the PF are to perform non-flight path related actions (radio communications, aircraft systems, other operational activities, etc.) and to monitor other crewmembers.

**Pilot monitoring (PM).** The pilot whose primary task is to monitor the flight path and its management by the PF. The secondary tasks of the PM are to perform non-flight path related actions (radio communications, aircraft systems, other operational activities, etc.) and to monitor other crewmembers.

**Powered-lift.** A heavier-than-air aircraft capable of vertical take-off, vertical landing, and low-speed flight, which depends principally on engine-driven lift devices or engine thrust for the lift during these flight regimes and on non-rotating aerofoil(s) for lift during horizontal flight.

**Problematic use of substances.** The use of one or more psychoactive substances by aviation personnel in a way that:

a) Constitutes a direct hazard to the user or endangers the lives, health or welfare of others;

and/or

b) Causes or worsens an occupational, social, mental or physical problem or disorder.

**Psychoactive substances.** Alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded.

**Quality system.** Documented organizational procedures and policies; internal audit of those policies and procedures; management review and recommendation for quality improvement.

**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.

**Remote co-pilot.** A licensed remote pilot serving in any piloting capacity other than as remote pilot-in-command but excluding a remote pilot who is in the remote pilot station for the sole purpose of receiving flight instruction.

**Remote flight crew member.** A licensed flight crew member charged with duties essential to the operation of a remotely piloted aircraft system during a flight duty period.

**Remote pilot.** A person charged by the operator with duties essential to the operation of a remotely piloted aircraft and who manipulates the flight controls, as appropriate, during flight time.

**Remote pilot-in-command.** The remote pilot designated by the operator as being in command and charged with the safe conduct of a flight.

**Remote pilot station (RPS).** The component of the remotely piloted aircraft system containing the equipment used to pilot the remotely piloted aircraft.

**Remotely piloted aircraft (RPA).** An unmanned aircraft which is piloted from a remote pilot station.

**Remotely piloted aircraft system (RPAS).** A remotely piloted aircraft, its associated remote pilot station(s), the required command and control links and any other components as specified in the type design.

**Rendering (a licence) valid.** The action taken by a Contracting State, 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.

**Rotorcraft.** A power-driven heavier-than-air aircraft supported in flight by the reactions of the air on one or more rotors.

**Sign a maintenance release (to).**<sup>†</sup> To certify that maintenance work has been completed satisfactorily in accordance with the applicable Standards of airworthiness, by issuing the maintenance release referred to in Annex 6.

**Sign a maintenance release (to).**<sup>††</sup> To certify that maintenance work has been completed satisfactorily in accordance with appropriate airworthiness requirements, by issuing the maintenance release referred to in Annex 6 (in the case of a release not issued by an approved maintenance organization) or Annex 8 (in the case of a release issued by an approved maintenance organization).

**Significant.** In the context of the medical provisions in Chapter 6, significant means to a degree or of a nature that is likely to jeopardize flight safety.

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

**Solo flight time — remotely piloted aircraft systems.** Flight time during which a student remote pilot is controlling the remotely piloted aircraft system, acting solo.

**State safety programme (SSP).** An integrated set of regulations and activities aimed at improving safety.

**Threat.** Events or errors that occur beyond the influence of an operational person, increase operational complexity and must be managed to maintain the margin of safety.

Note.— See Chapter 1 of Annex 19 — Safety Management for a definition of operational personnel.

**Threat management.** The process of detecting threats and responding to them with countermeasures that reduce or eliminate the consequences of threats and mitigate the probability of errors or undesired states.

Note.— See Chapter 6 of Part II, Section I of the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868) and Circular 314 — Threat and Error Management (TEM) in Air Traffic Control for a description of undesired states.

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<sup>†</sup> Applicable until 4 November 2020.

<sup>††</sup> Applicable as of 5 November 2020.

## **1.2 General rules concerning licences**

Civil Aviation Authority of Bangladesh has established regulation and procedure for licensing the following personnel:

a) Flight crew

- private pilot — aeroplane, airship, helicopter or powered-lift;
- commercial pilot — aeroplane, airship, helicopter or powered-lift;
- multi-crew pilot — aeroplane;
- airline transport pilot — aeroplane, helicopter or powered-lift;
- glider pilot;
- free balloon pilot;
- flight navigator;
- flight engineer; and
- as of 3 November 2022, remote pilot
- aeroplane, airship, glider, rotorcraft, powered-lift or free balloon.

b) Other personnel

- aircraft maintenance (technician/engineer/mechanic);
- air traffic controller;
- flight operations officer/flight dispatcher;
- aeronautical station operator.

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

1.2.1.1 Until 2 November 2022, 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 ANO and appropriate to the duties to be performed by that person. The licence shall be issued by CAAB or rendered valid by CAAB.

1.2.1.2 As of 3 November 2022, a person shall not act as a flight crew member of an aircraft or as a remote flight crew member of a RPAS unless a valid licence is held showing compliance with the specifications of this ANO and appropriate to the duties to be performed by that person.

1.2.1.3 As of 3 November 2022, the flight crew member licence shall be issued by the CAAB or rendered valid by CAAB.

1.2.1.3 As of 3 November 2022, the remote pilot licence shall be issued by CAAB or rendered valid by CAAB.

1.2.1.4 As of 3 November 2022, remote pilots shall carry their appropriate licence while engaged in international air operations.

Note. — Article 29 of the Convention on International Civil Aviation requires that the flight crew members carry their appropriate licences on board every aircraft engaged in international air navigation.

## **1.2.2 Method of rendering a licence valid**

1.2.2.1 When CAAB 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. When CAAB limits the authorization to specific privileges, the authorization shall specify the privileges of the licence which are to be accepted as its equivalent. The validity of the authorization shall not extend beyond the period of validity of the licence. The authorization ceases to be valid if the licence upon which it was issued is revoked or suspended.

Note.— This provision is not intended to preclude the State that issued the licence from extending, by a suitable notification, the period of validity of the licence without necessarily requiring either the physical return of the licence or the appearance of the licence holder before the Authorities of that State.

1.2.2.2 When an authorization under 1.2.2.1 is issued for use in commercial air transport operations, CAAB shall confirm the validity of the other Contracting State's licence before issuing the authorization

1.2.2.3 Rendering a licence valid pursuant to a formal agreement between CAAB and other Contracting States under common licensing regulations.

1.2.2.3.1 Notwithstanding the provisions in 1.2.2.1 and 1.2.2.2, CAAB may automatically render valid each other's licences, provided that the other States shall have:

- a) adopted common licensing regulations that are compliant with this ANO;
- b) entered into a formal agreement recognizing the automatic validation process;

\* As of 3 November 2022, section 1.2.1 will be titled Authority to act as a flight crew member or a remote flight crew member.

- c) established a surveillance system to ensure the continuing implementation of the common licensing regulations; and
- d) registered the agreement with ICAO pursuant to Article 83 of the Convention on International Civil Aviation.

Note 1.— The registry of agreements with their associated list of Contracting States can be found in ICAO's Database of Aeronautical Agreements and Arrangements.

Note 2.— Common licensing regulations refer to a common licensing regulatory framework that is legally binding and directly applicable to Contracting States party to the agreement, recognizing the automatic validation process. Common licensing regulations used by those States contain identical requirements for licence issuance, maintenance of competency and recent experience. A regional aviation safety body can develop and maintain these common regulations for its member States.

1.2.2.3.2 An endorsement shall appear on licences rendered valid under the process of 1.2.2.3.1 indicating that the licence is automatically validated under the agreement described in 1.2.2.3.1 and referencing the ICAO registration number of the agreement. The endorsement shall further include a list of all States that are party to the agreement. 1.2.2.3.2.1 provides a transition period for States that meet the requirements in 1.2.2.3.1 and have issued licences prior to the applicability of this Standard.

1.2.2.3.2.1 Until 31 December 2022, States that meet the requirements in 1.2.2.3.1 and have issued licences prior to 9 November 2017 may use other effective means, carried on board the aircraft or accessible, to indicate that the licences issued by the State are rendered valid in accordance with the agreement in 1.2.2.3.1.

Note.— Guidance on the format for the endorsement is contained in Attachment B. The guidance also includes how to make use of an attachment to the licence, as part of the endorsement, for information that may change over time, i.e. the ICAO registration number of the agreement and the list of all States that are party to the agreement.

1.2.2.4 A pilot licence issued by other Contracting State shall be rendered valid by CAAB for use in private flights.

Note.— If CAAB renders valid a licence issued by another Contracting State without formality for use in private flights, it will be notified in the Aeronautical Information Publications.

### **1.2.3 Privileges of the holder of a licence**

The holder of a licence shall not exercise the privileges other than those granted by that licence.

#### **1.2.4 Medical fitness**

Note 1.— Guidance material is published in the Manual of Civil Aviation Medicine (Doc 8984 and CPD 1-10).

Note 2.— To satisfy the licensing requirements of medical fitness for the issue of various types of licences, the applicant must meet certain appropriate medical requirements which are specified as three classes of Medical Assessment. Details are given in 6.2, 6.3, 6.4 and 6.5. To provide the necessary evidence to satisfy the requirements of 1.2.4.1, CAAB issues the licence holder with the appropriate Medical Assessment, Class 1, Class 2 or Class 3. This can be done in several ways such as a suitably titled separate certificate or a statement on the licence stipulating that the Medical Assessment is an integral part of the licence.

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 CAAB shall apply, as part of the State Safety Programme, basic safety management principles to the medical assessment process of licence holders that as a minimum include:

- a) routine analysis of in-flight incapacitation events and medical findings during medical assessments to identify areas of increased medical risk; and

- b) continuous re-evaluation of the medical assessment process to concentrate on identified areas of increased medical risk.

Note.— A framework for the implementation and maintenance of a State Safety Programme is contained in Attachment A to Annex 19. Guidance on State safety programmes and safety management principles is contained in the Safety Management Manual (SMM) (Doc 9859) and the Manual of Civil Aviation Medicine (Doc 8984).

1.2.4.3 CAAB shall implement appropriate aviation-related health promotion for licence holders subject to a Medical Assessment to reduce future medical risks to flight safety.

Note 1.— Standard 1.2.4.2 indicates how appropriate topics for health promotion activities may be determined.

Note 2.— Guidance on the subject of health promotion activities is contained in the Manual of Civil Aviation Medicine (Doc 8984) and CPD 1-10.

Note 3.— Guidance on the relationship between the CAAB and the implementation of a Medical Assessment for licence holders is contained in the Manual of Procedures for Establishment and Management of a State's Personnel Licensing System (Doc 9379).

1.2.4.4 The period of validity of a Medical Assessment shall begin on the day the medical examination is performed. The duration of the period of validity shall be in accordance with the provisions of 1.2.5.2.

1.2.4.4.1 The period of validity of a Medical Assessment may be extended, at the discretion of CAAB up to 45 days.

Note.— It is advisable to let the calendar day on which the Medical Assessment expires remain constant year after year by allowing the expiry date of the current Medical Assessment to be the beginning of the new validity period under the proviso that the medical examination takes place during the period of validity of the current Medical Assessment but no more than 45 days before it expires.

1.2.4.5 Until 2 November 2022, except as provided in 1.2.5.2.6, 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.

1.2.4.5 As of 3 November 2022, except as provided in 1.2.5.2.6, flight crew members, remote 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.

1.2.4.6 CAAB 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.

1.2.4.6.1 Medical examiners shall have received training in aviation medicine and shall receive refresher training at regular intervals. Before designation, medical examiners shall demonstrate adequate competency in aviation medicine.

1.2.4.6.2 Medical examiners shall have practical knowledge and experience of the conditions in which the holders of licences and ratings carry out their duties.

Note.— Examples of practical knowledge and experience are flight experience, simulator experience, on-site observation or any other hands-on experience deemed by the Licensing Authority to meet this requirement.

1.2.4.6.3 The competence of a medical examiner shall be evaluated periodically by the medical assessor.

1.2.4.7 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, the date, place and result of the last examination. They shall indicate to the examiner whether a Medical Assessment has previously been refused, revoked or suspended and, if so, the reason for such refusal, revocation or suspension.

1.2.4.7.1 Any false declaration to a medical examiner made by an applicant for a licence or rating shall be reported to the Licensing Division for such action as may be considered appropriate.

1.2.4.8 Having completed the medical examination of the applicant in accordance with Chapter 6, the medical examiner shall coordinate the results of the examination and submit a signed report, or equivalent, to the Licensing Division, in accordance with its requirements, detailing the results of the examination and evaluating the findings with regard to medical fitness.

1.2.4.8.1 If the medical report is submitted to the Licensing Division in electronic format, adequate identification of the examiner shall be established.

1.2.4.8.2 If the medical examination is carried out by two or more medical examiners, Chairman, CAAB shall appoint one of these to be responsible for coordinating the results of the examination, evaluating the findings with regard to medical fitness, and signing the report.

1.2.4.9 CAAB shall use the services of medical assessors to evaluate reports submitted to him by medical examiners.

1.2.4.9.1 The medical examiner shall be required to submit sufficient information to the Medical Assessor to enable to undertake Medical Assessment audits.

Note.— The purpose of such auditing is to ensure that medical examiners meet applicable standards for good medical practice and aeromedical risk assessment. Guidance on aeromedical risk assessment is contained in the Manual of Civil Aviation Medicine (Doc 8984).

1.2.4.10 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.

1.2.4.11 Medical confidentiality shall be respected at all times.

1.2.4.11.1 All medical reports and records shall be securely held with accessibility restricted to authorized personnel.

1.2.4.11.2 When justified by operational considerations, the medical assessor shall determine to what extent pertinent medical information is presented to relevant officials of the Licensing Authority.

## **1.2.5 Validity of licences**

1.2.5.1 CAAB, having issued a licence, shall ensure that the privileges granted by that licence, or by related ratings, are not exercised unless the holder maintains competency and meets the requirements for recent experience established by CAAB.

1.2.5.1.1 CAAB shall establish maintenance of competency and recent experience requirements for pilot licences and ratings based on a systematic approach to accident prevention and should include a risk assessment process and analysis of current operations, including accident and incident data appropriate of the State.

1.2.5.1.2 CAAB, having issued a licence, shall ensure that other Contracting States are enabled to be satisfied as to the validity of the licence.

Note 1.— Until 2 November 2022, the maintenance of competency of flight crew or remote 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 ANO 6.

Note 1.— As of 3 November 2022, 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 ANO Part 6.

Note 2.— Until 2 November 2022, 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 2.— As of 3 November 2022, maintenance of competency may be satisfactorily recorded in the operator's records, or in the flight crew or the remote flight crew member's personal log book or licence.

Note 3.— Until 2 November 2022, flight crew members may, to the extent deemed feasible by the Chairman CAAB, demonstrate their continuing competency in FSTDs approved by CAAB.

Note 3.— As of 3 November 2022, flight crew and remote flight crew members may, to the extent deemed feasible by the Licensing Authority demonstrate their continuing competency in FSTDs approved by the Licensing Authority.

Note 4. — See the Manual of Criteria for the Qualification of Flight Simulation Training Devices (Doc 9625).

Note 5.— See the Manual of Procedures for Establishment and Management of a State's Personnel Licensing System (Doc 9379) for guidance material on the development of a risk assessment process.

1.2.5.2 Except as provided in 1.2.5.2.1, 1.2.5.2.2, 1.2.5.2.3, 1.2.5.2.4, 1.2.5.2.5 and 1.2.5.2.6, a Medical Assessment issued in accordance with 1.2.4.7 and 1.2.4.8 shall be valid from the date of the medical examination for a period not greater than:

- 60 months for the private pilot licence — aeroplane, airship, helicopter and powered-lift;

- 12 months for the commercial pilot licence — aeroplane, airship, helicopter and powered-lift;
- 12 months for the multi-crew pilot licence — aeroplane;
- 12 months for the airline transport pilot licence — aeroplane, helicopter and powered-lift;
- 60 months for the glider pilot licence;
- 60 months for the free balloon pilot licence;
- 12 months for the flight navigator licence;
- 12 months for the flight engineer licence;
- 48 months for the air traffic controller licence; and
- as of 3 November 2022, 48 months for the remote pilot licence — aeroplane, airship, glider, rotorcraft, powered-lift or free balloon.

Note 1.— The periods of validity listed above may be extended by up to 45 days in accordance with 1.2.4.3.1.

Note 2.— When calculated in accordance with 1.2.5.2 and its sub-paragraphs, the period of validity will, for the last month counted, include the day that has the same calendar number as the date of the medical examination or, if that month has no day with that number, the last day of that month.

1.2.5.2.1 The period of validity of a Medical Assessment may be reduced when clinically indicated.

1.2.5.2.2 When the holders of airline transport pilot licences — aeroplane, helicopter and powered-lift, and commercial pilot licences — aeroplane, airship, helicopter and powered-lift, who are engaged in single-crew commercial air transport operations carrying passengers, have passed their 40th birthday, the period of validity specified in 1.2.5.2 shall be reduced to six months.

1.2.5.2.3 When the holders of airline transport pilot licences — aeroplane, helicopter and powered-lift, commercial pilot licences — aeroplane, airship, helicopter and powered-lift, and multi-crew pilot licences — aeroplane, who are engaged in commercial air transport operations, have passed their 60th birthday, the period of validity specified in 1.2.5.2 shall be reduced to six months.

1.2.5.2.4 Until 2 November 2022, when the holders of private pilot licences — aeroplane, airship, helicopter and powered-lift, free balloon pilot licences, glider pilot licences and air traffic controller licences have passed their 40th birthday, the period of validity specified in 1.2.5.2 shall be reduced to 24 months.

1.2.5.2.4 As of 3 November 2022, when the holders of private pilot licences — aeroplane, airship, helicopter and powered-lift, remote pilot licences — aeroplane, airship, glider, rotorcraft, powered-lift or free balloon, free balloon pilot licences, glider pilot licences and air traffic controller licences have passed their 40th birthday, the period of validity specified in 1.2.5.2 shall be reduced to 24 months.

1.2.5.2.5 Until 2 November 2022, when the holders of private pilot licences — aeroplane, airship, helicopter and powered-lift, free balloon pilot licences, glider pilot licences and air traffic controller licences have passed their 50th birthday, the period of validity specified in 1.2.5.2 shall be further reduced to 12 months.

1.2.5.2.5 As of 3 November 2022, when the holders of private pilot licences — aeroplane, airship, helicopter and powered-lift, remote pilot licences — aeroplane, airship, glider, rotorcraft, powered-lift or free balloon, free balloon pilot licences, glider pilot licences and air traffic controller licences have passed their 50th birthday, the period of validity specified in 1.2.5.2 shall be further reduced to 12 months.

Note.— The periods of validity listed above are based on the age of the applicant at the time of undergoing the medical examination.

1.2.5.2.6 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 CAAB, 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 CAAB;
- 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 Licensing Authority of the Contracting State in which the applicant is temporarily located. A report of the medical examination shall be sent to the Licensing Authority where the licence was issued; and
- d) as of 3 November 2022, two consecutive periods each of three months in the case of a remote flight crew member.

## **1.2.6 Decrease in medical fitness**

1.2.6.1 Holders of licences provided for in this ANO 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 and properly exercise these privileges.

1.2.6.1.1 CAAB shall ensure that licence holders are provided with clear guidelines on medical conditions that may be relevant to flight safety and when to seek clarification or guidance from a medical examiner or Licensing Authority.

Note.— Guidance on physical and mental conditions and treatments that are relevant to flight safety about which information may need to be forwarded to the Licensing Authority is contained in the Manual of Civil Aviation Medicine (Doc 8984).

1.2.6.1.2 CAAB shall, as far as practicable, ensure that licence holders do not exercise the privileges of their licences and related ratings during any period in which their medical fitness has, from any cause, decreased to an extent that would have prevented the issue or renewal of their Medical Assessment.

## **1.2.7 Use of psychoactive substances**

1.2.7.1 Holders of licences provided for in this ANO shall not exercise the privileges of their licences and related ratings while under the influence of any psychoactive substance which might render them unable to safely and properly exercise these privileges.

1.2.7.2 Holders of licences provided for in this ANO shall not engage in any problematic use of substances.

1.2.7.3 CAAB shall ensure, as far as practicable, that all licence holders who engage in any kind of problematic use of substances are identified and removed from their safety-critical functions. Return to the safety-critical functions may be considered after successful treatment or, in cases where no treatment is necessary, after cessation of the problematic use of substances and upon determination that the person's continued performance of the function is unlikely to jeopardize safety.

Note.— Guidance on suitable methods of identification (which may include biochemical testing on such occasions as pre-employment, upon reasonable suspicion, after accidents/incidents, at intervals, and at random) and on other prevention topics is contained in the Manual on Prevention of Problematic Use of Substances in the Aviation Workplace (Doc 9654).

## **1.2.8 Approved training and approved training organization**

Note.— The qualifications required for the issue of personnel licences can be more readily and speedily acquired by applicants who undergo closely supervised, systematic and continuous courses of training, conforming to a planned syllabus or curriculum. Provision has accordingly been made for some reduction in the experience requirements for the issue of certain licences and ratings prescribed in these Standards, in respect of an applicant who has satisfactorily completed a course of approved training.

1.2.8.1 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.

1.2.8.2 The approval of a training organization by CAAB shall be dependent upon the applicant demonstrating compliance with the requirements of Appendix 2 of this ANO and the relevant provisions contained in Annex-19.

Note 1.— Annex 19 includes safety management provisions for an approved training organization that is exposed to safety risks related to aircraft operations during the provision of its services. Further guidance is contained in the Safety Management Manual (SMM) (Doc 9859).

Note 2.— Guidance on approval of a training organization can be found in the Manual on the Approval of Training Organizations (Doc 9841).

1.2.8.3 Approved training for flight crew and air traffic controllers shall be conducted within an approved training organization.

Note.— The approved training considered in 1.2.8.3 relates primarily to approved training for the issuance of a licence or rating. It is not intended to include approved training for the maintenance of competence or for an operational qualification after the initial issuance of a licence or rating, as may be required for air traffic controllers or for flight crew, such as the approved training under ANO 6 — Operation of Aircraft, Part I — International Commercial Air Transport — Aeroplanes, 9.3, or Part III — International Operations — Helicopters, Section II, 7.3.

1.2.8.4 Until 2 November 2022, competency-based approved training for aircraft maintenance personnel shall be conducted within an approved training organization.

Note.— The Manual on Training of Aircraft Maintenance Personnel (Doc 10098) contains guidance material on the design and development of an aircraft maintenance personnel training programme.

1.2.8.4 As of 3 November 2022, competency-based approved training for aircraft and RPAS maintenance personnel shall be conducted within an approved training organization.

Note.1— A comprehensive training scheme for the aircraft maintenance (technician/engineer/mechanic) licence, including the various levels of competency, is contained in the Procedures for Air Navigation Services — Training (Doc 9868, PANS-TRG).

Note 2.— The Manual on Training of Aircraft Maintenance Personnel (Doc 10098) contains guidance material on the design and development of an aircraft maintenance personnel training programme.

1.2.8.5 As of 3 November 2022, competency-based approved training for remote flight crew shall be conducted within an approved training organization.

1.2.8.6 Competency-based approved training for flight operations officer/flight dispatcher personnel shall be conducted within an approved training organization.

Note.— Procedures supporting the development of competency-based training and assessment for aeroplane flight crew, air traffic controllers, aircraft maintenance personnel, remote flight crew and flight operations officers/flight dispatchers, including ICAO competency frameworks, are contained in the Procedures for Air Navigation Services — Training (Doc 9868, PANS-TRG).

## **1.2.9 Language proficiency**

1.2.9.1 Until 2 November 2022, aeroplane, airship, helicopter and powered-lift pilots, air traffic controllers and aeronautical station operators shall demonstrate the ability to speak and understand the language used for radiotelephony communications to the level specified in the language proficiency requirements in Appendix 1.

1.2.9.1 As of 3 November 2022, aeroplane, airship, helicopter and powered-lift pilots; aeroplane, airship, glider, rotorcraft, powered-lift or free balloon remote pilots; air traffic controllers; and aeronautical station operators shall demonstrate the ability to speak and understand the language used for radiotelephony communications to the level specified in the language proficiency requirements in Appendix 1.

1.2.9.2 Flight engineers, and glider and free balloon pilots shall have the ability to speak and understand the language used for radiotelephony communications.

1.2.9.3 Flight navigators required to use the radiotelephone aboard an aircraft shall demonstrate the ability to speak and understand the language used for radiotelephony communications.

1.2.9.4 Flight navigators required to use the radiotelephone aboard an aircraft shall demonstrate the ability to speak and understand the language used for radiotelephony communications to the level specified in the language proficiency requirements in Appendix 1.

1.2.9.5 Until 2 November 2022, the language proficiency of aeroplane, airship, helicopter and powered-lift pilots, air traffic controllers and aeronautical station operators who demonstrate proficiency below the Expert Level (Level 6) shall be formally evaluated at intervals in accordance with an individual's demonstrated proficiency level.

1.2.9.5 As of 3 November 2022, the language proficiency of aeroplane, airship, helicopter and powered-lift pilots; aeroplane, airship, glider, rotorcraft, powered-lift or free balloon remote pilots; air traffic controllers; and aeronautical station operators who demonstrate proficiency below the Expert Level (Level 6) shall be formally evaluated at intervals in accordance with an individual's demonstrated proficiency level.

1.2.9.6 Until 2 November 2022, the language proficiency of aeroplane, airship, helicopter and powered-lift pilots, flight navigators required to use the radiotelephone aboard an aircraft, air traffic controllers and aeronautical station operators who demonstrate proficiency below the Expert Level (Level 6) shall be formally evaluated at intervals in accordance with an individual's demonstrated proficiency level, as follows:

- a) those demonstrating language proficiency at the Operational Level (Level 4) should be evaluated at least once every three years; and
- b) those demonstrating language proficiency at the Extended Level (Level 5) should be evaluated at least once every six years.

Note 1.— Formal evaluation is not required for applicants who demonstrate expert language proficiency, e.g. native and very proficient non-native speakers with a dialect or accent intelligible to the international aeronautical community.

Note 2.— The provisions of 1.2.9 refer to Annex 10, Volume II, Chapter 5, whereby the language used for radiotelephony communications may be the language normally used by the station on the ground or English. In practice, therefore, there will be situations whereby flight crew members will only need to speak the language normally used by the station on the ground.

1.2.9.6 As of 3 November 2022, the language proficiency of aeroplane, airship, helicopter and powered-lift pilots; aeroplane, airship, gliders, rotorcraft, powered-lift or free balloon remote pilots; flight navigators required to use the radiotelephone aboard an aircraft; air traffic controllers; and aeronautical station operators who demonstrate proficiency below the Expert Level (Level 6) shall be formally evaluated at intervals in accordance with an individual's demonstrated proficiency level, as follows:

- a) those demonstrating language proficiency at the Operational Level (Level 4) should be evaluated at least once every three years; and
- b) those demonstrating language proficiency at the Extended Level (Level 5) should be evaluated at least once every six years.

Note 1.— Formal evaluation is not required for applicants who demonstrate expert language proficiency, e.g. native and very proficient non-native speakers with a dialect or accent intelligible to the international aeronautical community.

Note 2.— The provisions of 1.2.9 refer to ANO 10, Volume II, Chapter 5, whereby the language used for radiotelephony communications may be the language normally used by the station on the ground or English. In practice, therefore, there will be situations whereby flight crew members and remote flight crew members will only need to speak the language normally used by the station on the ground.

## **CHAPTER 2. LICENCES AND RATINGS FOR PILOTS\***

### **A. LICENCES AND RATINGS FOR PILOTS**

## **2.1 General rules concerning pilot licences 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 by Chairman, CAAB in accordance with the provisions of this chapter:

- aeroplane
- airship of a volume of more than 4 600 cubic metres
- free balloon
- glider
- helicopter
- powered-lift.

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 Chairman 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 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 in this ANO 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 Chairman, such requirements for knowledge and skill as are specified for that licence or rating.

\* As of 3 November 2022, Chapter 2 will be titled Licences and Ratings for Pilots and Remote Pilots.

2.1.1.4 Transitional measures related to the powered-lift category:

Until 5 March 2025, CAAB may endorse a type rating for aircraft of the powered-lift category on an aeroplane or helicopter pilot licence. The endorsement of the rating on the licence shall indicate that the aircraft is part of the powered-lift category. The training for the type rating in the powered-lift category shall be completed during a course of approved training, shall take into account the previous experience of the applicant in an aeroplane or a helicopter as appropriate and incorporate all relevant aspects of operating an aircraft of the powered-lift category.

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I in Chapter 6, and in the Human Factors Training Manual (Doc 9683).

### **2.1.2 Category ratings**

2.1.2.1 Category ratings shall be for categories of aircraft listed in 2.1.1.1.

2.1.2.2 Category ratings shall not be endorsed on a licence when the category is included in the title of the licence itself.

2.1.2.3 Any additional category rating endorsed on a pilot licence shall indicate the level of licensing privileges at which the category rating is granted.

2.1.2.4 The holder of a pilot licence seeking additional category ratings shall meet the requirements of this ANO appropriate to the privileges for which the category rating is sought.

2.1.3 Class and type ratings

2.1.3.1 Class ratings are 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.

2.1.3.1.1 Helicopters certified for single-pilot operations and which have comparable handling, performance and other characteristics shall also comprise a class.

2.1.3.2 Type ratings shall be established for:

- a) aircraft certificated for operation with a minimum crew of at least two pilots;
- b) helicopters and powered-lifts certificated for single-pilot operation except where a class rating has been issued under 2.1.3.1.1; and
- c) any aircraft whenever considered necessary by the CAAB.

Note 1.— Where a common type rating is established, it will be only for aircraft with similar characteristics in terms of operating procedures, systems and handling.

Note 2.— Requirements for class and type ratings for gliders and free balloons have not been determined.

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 CAAB having issued a pilot licence shall not permit the holder of such licence to act either as pilot-in-command or as co-pilot of an aeroplane, an airship, a helicopter or a powered-lift 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, or limiting the privileges to act as pilot-in-command only during the cruise phase of the flight, 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 CAAB 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 engine, 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;
  - for the issue of an aeroplane category type rating, upset prevention and recovery training; and

Note 1.— Procedures for upset prevention and recovery training are contained in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868).

Note 2.— Guidance on upset prevention and recovery training is contained in the Manual on Aeroplane Upset Prevention and Recovery Training (Doc 10011).

Note 3.— The Manual of Criteria for the Qualification of Flight Simulation Training Devices (Doc 9625) provides guidance on the approval of FSTDs for upset prevention and recovery training.

Note 4.— The aeroplane upset prevention and recovery training may be integrated in the type rating programme or be conducted immediately after, as an additional module.

- procedures for crew incapacitation and crew coordination including allocation of pilot tasks; crew cooperation and use of checklists;

Note.— See 2.1.8.1 on the qualifications required for pilots giving flight training.

- 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 CAAB on the basis of the requirements specified in 2.6.1.2.

Note.— See the Manual of Procedures for Establishment and Management of a State's Personnel Licensing System (Doc 9379) for guidance of a general nature on cross-crew qualification and cross-credit.

#### 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 a FSTD for acquisition of experience and demonstration of skill**

The use of a FSTD for acquiring the experience or performing any manoeuvres required during the demonstration of skill for the issue of a licence or rating shall be approved by CAAB, which shall ensure that the FSTD used is appropriate to the task.

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

CAAB, having issued a pilot licence, shall not permit the holder thereof to act either as pilot-in-command or as co-pilot of an aircraft under IFR unless such holder has received proper authorization from CAAB. Proper authorization shall comprise an instrument rating appropriate to the aircraft category.

Note.— The instrument rating is included in the airline transport pilot licence-aeroplane or powered-lift category, multi-crew pilot licence, and commercial pilot licence-airship category. 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 instruction is required**

2.1.8.1 CAAB having issued a pilot licence, shall not permit the holder thereof to carry out flight instruction required for the issue of a pilot licence or rating, unless such holder has received proper authorization from CAAB. 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 CAAB to carry out flight instruction; or
- c) a specific authorization granted by the CAAB which issued the licence.

2.1.8.2 CAAB shall not permit a person to carry out instruction on a FSTD required for the issue of a pilot licence or rating unless such person holds or has held an appropriate licence or has appropriate flight training and flight experience and has received proper authorization from CAAB.

### **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 at a pilot station of an aircraft certificated for operation by a single pilot but required by CAAB 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. CAAB may authorize that flight time be credited in full towards the total flight time required if the aircraft is equipped to be operated by a co-pilot and the aircraft is operated in a multi-crew operation.

2.1.9.3 The holder of a pilot licence, when acting as co-pilot at a pilot station of an aircraft certificated to be operated with a co-pilot, 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.

2.1.9.4 The holder of a pilot licence, when acting as pilot-in-command under supervision, 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 Limitation of privileges of pilots who have attained their 60th birthday and curtailment of privileges of pilots who have attained their 65th birthday.

CAAB having issued pilot licences, shall not permit the holders thereof to act as pilot of an aircraft engaged in international commercial air transport operations if the licence holders have attained their 60th birthday or, in the case of operations with more than one pilot, their 65th birthday.

Note.— See 1.2.5.2.3 on the validity period of Medical Assessments for pilots over the age of 60 who are engaged in commercial air transport operations.

## **2.2 Student pilot**

2.2.1 A student pilot shall meet requirements prescribed by the CAAB. In prescribing such requirements, CAAB 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 CAAB and other Contracting States concerned.

### **2.2.3 Medical fitness**

CAAB 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**

2.3.1 General requirements for the issue of the licence appropriate to the aeroplane, airship, helicopter and powered-lift categories

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 and appropriate to the category of aircraft intended to be included in the licence, in at least the following subjects:

#### Air law

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

#### Aircraft general knowledge for aeroplanes, airships, helicopters and powered-lifts

- b) principles of operation and functioning of engines, systems and instruments;
- c) operating limitations of the relevant category of aircraft and engines; relevant operational information from the flight manual or other appropriate document;
- d) for helicopters and powered-lifts, transmission (power trains) where applicable;
- e) for airships, physical properties and practical application of gases;

#### Flight performance, planning and loading

- f) effects of loading and mass distribution on flight characteristics; 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 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

- i) human performance including principles of TEM;

Note.— Guidance material to design training programmes on human performance, including threat and error management (TEM), can be found in the Human Factors Training Manual (Doc 9683).

#### Meteorology

- j) application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry; hazardous weather conditions;

#### Navigation

- k) practical aspects of air navigation and dead-reckoning techniques; use of aeronautical charts;

## Operational procedures

- l) application of TEM to operational performance;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

- m) altimeter setting procedures;
- n) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
- o) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards;
- p) in the case of helicopters, and if applicable, powered-lifts, settling with power; ground resonance; retreating blade stall; dynamic rollover and other operating hazards; safety procedures, associated with flight in VMC;

## Principles of flight

- q) principles of flight;

## Radiotelephony

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

### 2.3.1.3 Skill

The applicant shall have demonstrated the ability to perform as pilot-in-command of an aircraft within the appropriate category of aircraft, the procedures and manoeuvres described in 2.3.3.2 or 2.3.4.2.1 or 2.3.5.2 or 2.3.6.2 with a degree of competency appropriate to the privileges granted to the holder of a private pilot licence, and to:

- a) recognize and manage threats and errors;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

- b) operate the aircraft within its limitations;
- c) complete all manoeuvres with smoothness and accuracy;
- d) exercise good judgement and airmanship;
- e) apply aeronautical knowledge; and

- f) maintain control of the aircraft at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

#### 2.3.1.4 Medical fitness

The applicant shall hold a current Class 2 Medical Assessment.

Note.— See 2.7.1.3 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, 1.2.7.1, 1.2.9 and 2.1, the privileges of the holder of a private pilot licence shall be to act, but not for remuneration, as pilot-in-command or co-pilot of aircraft within the appropriate aircraft category engaged in non-revenue flights.

2.3.2.2 Before exercising the privileges at night, the licence holder shall have received dual instruction in aircraft within the appropriate category of aircraft in night flying, including take-off, landing and navigation.

#### 2.3.3 Specific requirements for the issue of the aeroplane category rating.

##### 2.3.3.1 Experience

2.3.3.1.1 The applicant shall have completed not less than 40 hours of flight time, or 35 hours if completed during a course of approved training, as a pilot of aeroplanes appropriate to the class rating sought. CAAB shall determine whether experience as a pilot under instruction in a FSTD is acceptable as part of the total flight time of 40 hours or 35 hours, as the case may be. Credit for such experience shall be limited to a maximum of 5 hours.

2.3.3.1.1.1 When the applicant has flight time as a pilot of aircraft in other categories, CAAB shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.3.3.1.1 can be reduced accordingly.

2.3.3.1.2 The applicant shall have completed in aeroplanes not less than 10 hours of solo flight time appropriate to the class rating sought, under the supervision of an authorized flight instructor, including 5 hours of solo cross-country flight time with at least one cross-country flight totaling not less than 270 km (150 NM) in the course of which full-stop landings at two different aerodromes shall be made.

##### 2.3.3.2 Flight instruction

The applicant shall have received dual instruction in aeroplanes appropriate to the class rating sought, 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) recognize and manage threats and errors;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

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

Note.— The instrument experience specified in 2.3.3.2 i) and the night flying dual instruction in 2.3.2.2 do not entitle the holder of a private pilot licence to pilot aeroplanes under IFR.

#### 2.3.4 Specific requirements for the issue of the helicopter category rating.

##### 2.3.4.1 Experience

2.3.4.1.1 The applicant shall have completed not less than 40 hours of flight time, or 35 hours if completed during a course of approved training, as a pilot of helicopters. CAAB shall determine whether experience as a pilot under instruction in a FSTD is acceptable as part of the total flight time of 40 hours or 35 hours, as the case may be. Credit for such experience shall be limited to a maximum of 5 hours.

2.3.4.1.1.1 When the applicant has flight time as a pilot of aircraft in other categories, CAAB shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.3.4.1.1 can be reduced accordingly.

2.3.4.1.2 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 totaling not less than 180 km (100 NM) in the course of which landings at two different points shall be made.

#### 2.3.4.2 Flight instruction

2.3.4.2.1 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) recognize and manage threats and errors;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

- b) pre-flight operations, including mass and balance determination, helicopter inspection and servicing;
- c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- d) control of the helicopter by external visual reference;
- e) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm;
- f) ground manoeuvring and run-ups; hovering; take-offs and landings — normal, out of wind and sloping ground;
- g) take-offs and landings with minimum necessary power; maximum performance take-off and landing techniques; restricted site operations; quick stops;
- h) cross-country flying using visual reference, dead reckoning and, where available, radio navigation aids, including a flight of at least one hour;
- i) emergency operations, including simulated helicopter equipment malfunctions; autorotative approach;
- j) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures; and
- k) communication procedures and phraseology.

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

Note.— The instrument experience specified in 2.3.4.2.1.1 and the night flying dual instruction in 2.3.2.2 do not entitle the holder of a private pilot licence to pilot helicopters under IFR.

#### 2.3.5 Specific requirements for the issue of the powered-lift category rating

##### 2.3.5.1 Experience

2.3.5.1.1 The applicant shall have completed not less than 40 hours of flight time as a pilot of powered-lifts. CAAB shall determine whether experience as a pilot under instruction in a FSTD is acceptable as part of the total flight time of 40 hours.

2.3.5.1.2 When the applicant has flight time as a pilot of aircraft in other categories, CAAB shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.3.5.1.1 could be reduced accordingly.

2.3.5.1.3 The applicant shall complete in powered-lifts 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 totaling not less than 270 km (150 NM) in the course of which full-stop landings at two different aerodromes shall be made.

#### 2.3.5.2 Flight instruction

The applicant shall receive not less than 20 hours of dual instruction time in powered-lifts 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) recognize and manage threats and errors;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

- b) pre-flight operations, including mass and balance determination, powered-lift inspection and servicing;
- c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- d) control of the powered-lift by external visual reference;
- e) ground manoeuvring and run-ups; hover and rolling take-offs and climb-out; hover and rolling approach 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) flight by reference solely to instruments, including the completion of a level 180° turn;
- h) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal
- i) cross-country flying using visual reference, dead reckoning and, where available, radio navigation aids, including a flight of at least one hour;
- j) emergency operations, including simulated powered-lift equipment malfunctions; power of reconversion to autorotation and autorotative approach, where applicable; transmission and interconnect driveshaft failure, where applicable;

- k) operations to from and transiting controlled aerodromes, compliance with air traffic services procedures; and
- l) communication procedures and phraseology.

Note.— The instrument experience specified in 2.3.5.2 g) and the night flying dual instruction specified in 2.3.2.2 do not entitle the holder of a private pilot licence to pilot powered-lifts under IFR.

## 2.3.6 Specific requirements for the issue of the airship category rating

### 2.3.6.1 Experience

The applicant shall have completed not less than 25 hours of flight time as a pilot of airships, including at least:

- a) 3 hours of cross-country flight training in an airship with a cross-country flight totaling not less than 45 km (25 NM);
- b) 5 take-offs and 5 landings to a full stop at an aerodrome with each landing involving a flight in the traffic pattern at an aerodrome;
- c) 3 hours of instrument time; and
- d) 5 hours as pilot assuming the duties of the pilot-in-command under the supervision of the pilot-in-command.

### 2.3.6.2 Flight instruction

The applicant shall have received dual instruction in airships from an authorized flight instructor. The instructor shall ensure that the applicant has received instruction in at least the following areas:

- a) recognize and manage threats and errors;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

- b) pre-flight operations, including mass and balance determination, airship inspection and servicing;
- c) ground reference manoeuvres;
- d) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- e) techniques and procedures for the take-off, including appropriate limitations, emergency procedures and signals used;
- f) control of the airship by external visual reference;
- g) take-offs, landings and go-arounds;
- h) maximum performance (obstacle clearance) take-offs;

- i) flight by reference solely to instruments, including the completion of a level 180<sup>o</sup> turn;
- j) navigation, cross-country flying using visual reference, dead reckoning and radio navigation aids
- k) emergency operations (recognition of leaks), including simulated airship equipment malfunctions; and
- l) communication procedures and phraseology.

Note.— The instrument experience specified in 2.3.6.2 i) and the night flying dual instruction specified in 2.3.2.2 do not entitle the holder of a private pilot licence to pilot airships under IFR.

## **2.4 Commercial pilot licence**

2.4.1 General requirements for the issue of the licence appropriate to the aeroplane, airship, helicopter and powered-lift categories

### 2.4.1.1 Age

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

### 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 and appropriate to the category of aircraft intended to be included in the licence, in at least the following subjects:

Air law

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

Aircraft general knowledge for aeroplanes, airships, helicopters and powered-lifts

- b) principles of operation and functioning of engines, systems and instruments;
- c) operating limitations of the relevant category of aircraft and engines; relevant operational information from the flight manual or other appropriate document;
- d) use and serviceability checks of equipment and systems of appropriate aircraft;
- e) maintenance procedures for airframes, systems and engines of appropriate aircraft;
- f) for helicopters and powered-lifts, transmission (power trains) where applicable;
- g) for airships, physical properties and practical application of gases;

Flight performance, planning and loading

- h) effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;
- i) use and practical application of take-off, landing and other performance data;
- j) pre-flight and en-route flight planning appropriate to commercial operations under VFR; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; altimeter setting procedures;
- k) in the case of airships, helicopters and powered-lifts, effects of external loading on handling;

#### Human performance

- l) human performance including principles of TEM;

Note.— Guidance material to design training programmes on human performance, including threat and error management (TEM), can be found in the Human Factors Training Manual (Doc 9683).

#### Meteorology

- m) interpretation and application of aeronautical meteorological reports, charts and forecasts; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;
- n) 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;
- o) causes, recognition and effects of icing; frontal zone penetration procedures; hazardous weather avoidance;

#### Navigation

- p) 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;
- q) in the case of airships:
  - i) use, limitation and serviceability of avionics and instruments necessary for control and navigation;
  - ii) use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight, identification of radio navigation aids;
  - iii) principles and characteristics of self-contained and external referenced navigation systems, operation of airborne equipment;

#### Operational procedures

- r) application of TEM to operational performance;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

- s) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
- t) altimeter setting procedures;
- u) appropriate precautionary and emergency procedures;
- v) operational procedures for carriage of freight; potential hazards associated with dangerous goods;
- w) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aircraft;
- x) in the case of helicopters, and if applicable, powered-lifts, settling with power; ground resonance; retreating blade stall; dynamic rollover and other operating hazards; safety procedures, associated with flight in VMC;

#### Principles of flight

- y) principles of flight;

#### Radiotelephony

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

#### 2.4.1.3 Skill

The applicant shall have demonstrated the ability to perform as pilot-in-command of an aircraft within the appropriate category of aircraft, the procedures and manoeuvres described in 2.4.3.2.1 or 2.4.4.2 or 2.4.5.2 or 2.4.6.2 with a degree of competency appropriate to the privileges granted to the holder of a commercial pilot licence, and to:

- a) recognize and manage threats and errors;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

- b) operate the aircraft within its limitations;
- c) complete all manoeuvres with smoothness and accuracy;
- d) exercise good judgement and airmanship;
- e) apply aeronautical knowledge; and

- f) maintain control of the aircraft at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

#### 2.4.1.4 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, 1.2.7.1, 1.2.9 and 2.1, the privileges of the holder of a commercial pilot licence shall be:

- a) to exercise all the privileges of the holder of a private pilot licence in an aircraft within the appropriate aircraft category;
- b) to act as pilot-in-command of an aircraft within the appropriate aircraft category engaged in operations other than commercial air transportation;
- c) to act as pilot-in-command, in commercial air transportation, of an aircraft within the appropriate aircraft category and certificated for single-pilot operation;
- d) to act as co-pilot of an aircraft within the appropriate aircraft category required to be operated with a co-pilot; and
- e) for the airship category, to pilot an airship under IFR.

2.4.2.2 Before exercising the privileges at night, the licence holder shall have received dual instruction in aircraft within the appropriate category of aircraft in night flying, including take-off, landing and navigation.

Note.— Certain privileges of the licence are curtailed by 2.1.10 for licence holders when they attain their 60th and 65th birthdays.

#### 2.4.3 Specific requirements for the issue of the aeroplane category rating

##### 2.4.3.1 Experience

2.4.3.1.1 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 Chairman shall determine whether experience as a pilot under instruction in a FSTD 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 20 hours.

2.4.3.1.1.1 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 totaling 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.

2.4.3.1.2 When the applicant has flight time as a pilot of aircraft in other categories, CAAB shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.4.3.1.1 can be reduced accordingly.

#### 2.4.3.2 Flight instruction

2.4.3.2.1 The applicant shall have received dual instruction in aeroplanes appropriate to the class and/or type rating, sought 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) recognize and manage threats and errors;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

- b) pre-flight operations, including mass and balance determination, aeroplane inspection and servicing;
- c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- d) control of the aeroplane by external visual reference;
- e) flight at critically slow airspeeds; spin avoidance; recognition of, and recovery from, incipient and full stalls;
- f) flight with asymmetrical power for multi-engine class or type ratings;
- g) flight at critically high airspeeds; recognition of, and recovery from, spiral dives;
- h) normal and crosswind take-offs and landings;
- i) maximum performance (short field and obstacle clearance) take-offs; short-field landings;
- j) basic flight manoeuvres and recovery from unusual attitudes by reference solely to basic flight instruments;
- k) cross-country flying using visual reference, dead reckoning and radio navigation aids; diversion procedures;
- l) abnormal and emergency procedures and manoeuvres including simulated aeroplane equipment malfunctions;

- m) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures; and
- n) communication procedures and phraseology.

Note.— The instrument experience specified in 2.4.3.1.1.1 c) and 2.4.3.2.1 j) and the night flying experience and dual instruction specified in 2.4.3.1.1.1 d) and 2.4.2.2 do not entitle the holder of a commercial pilot licence to pilot aeroplanes under IFR.

2.4.3.2.2 The applicant shall receive, in actual flight, upset prevention and recovery training approved by CAAB.

Note 1.— Procedures for upset prevention and recovery training in actual flight are contained in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868).

Note 2.— Guidance on upset prevention and recovery training in actual flight is contained in the Manual on Aeroplane Upset Prevention and Recovery Training (Doc 10011).

#### 2.4.4 Specific requirements for the issue of the helicopter category rating

##### 2.4.4.1 Experience

2.4.4.1.1 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. Chairman shall determine whether experience as a pilot under instruction in a FSTD 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.

2.4.4.1.1.1 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.

2.4.4.1.2 When the applicant has flight time as a pilot of aircraft in other categories, CAAB shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.4.4.1.1 can be reduced accordingly.

##### 2.4.4.2 Flight instruction

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) recognize and manage threats and errors;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

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

Note.— The instrument experience specified in 2.4.4.1.1.1 c) and 2.4.4.2 i) and the night flying experience and dual instruction specified in 2.4.4.1.1.1 d) and 2.4.2.2 do not entitle the holder of a commercial pilot licence to pilot helicopters under IFR.

## 2.4.5 Specific requirements for the issue of the powered-lift category rating

### 2.4.5.1 Experience

2.4.5.1.1 The applicant shall complete not less than 200 hours of flight time in a powered-lift, or 150 hours if completed during a course of approved training, as a pilot of aircraft. CAAB shall

determine whether experience as a pilot under instruction in a FSTD is acceptable as part of the total flight time of 200 hours or 150 hours, as the case may be.

2.4.5.1.2 The applicant shall complete in a powered-lift not less than:

- a) 50 hours as pilot-in-command;
- b) 10 hours of cross-country flying as pilot-in-command including a cross-country flight totaling not less than 540 km (300 NM) in the course of which full-stop landings at two different aerodromes should be made;
- c) 10 hours of instrument instruction 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 landings as pilot-in-command.

2.4.5.1.3 When the applicant has flight time as a pilot of aircraft in other categories, CAAB shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.4.5.1.1 could be reduced accordingly.

2.4.5.2 Flight instruction

The applicant shall receive dual instruction time in a powered-lift 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) recognize and manage threats and errors;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

- b) pre-flight operations, including mass and balance determination, powered-lift inspection and servicing;
- c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- d) control of the powered-lift by external visual reference;
- e) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm;
- f) ground manoeuvring and run-ups; hover and rolling take-offs and climb-out; hover and rolling approach and landings — normal, out of wind and sloping ground; steep approaches;
- g) take-offs and landings with minimum necessary power; maximum performance take-off and landing techniques; restricted site operations; quick stops;
- h) hovering out of ground effect; operations with external load, if applicable; flight at high altitude;

- i) basic flight manoeuvres and recovery from unusual attitudes by reference solely to basic flight instruments;
- j) cross-country flying using visual reference, dead reckoning and, where available, radio navigation aids, including a flight of at least one hour;
- k) emergency operations, including simulated powered-lift equipment malfunctions; power of reconversion to autorotation and autorotative approach, where applicable; transmission and interconnect driveshaft failure, where applicable;
- l) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures; and
- m) communication procedures and phraseology.

Note.— The instrument experience specified in 2.4.5.1.2 c) and 2.4.5.2 i) and the night flying experience and dual instruction specified in 2.4.5.1.2 d) and 2.4.2.2 do not entitle the holder of a commercial pilot licence to pilot powered-lifts under IFR.

## 2.4.6 Specific requirements for the issue of the airship category rating

### 2.4.6.1 Experience

2.4.6.1.1 The applicant shall have completed not less than 200 hours of flight time as a pilot.

2.4.6.1.1.1 The applicant shall have completed not less than:

- a) 50 hours as a pilot of airships;
- b) 30 hours in airships as pilot-in-command or pilot-in-command under supervision, to include not less than:
  - 10 hours of cross-country flight time; and
  - 10 hours of night flight;
- c) 40 hours of instrument time, of which 20 hours shall be in flight and 10 hours in flight in airships; and
- d) 20 hours of flight training in airships in the areas of operation listed in 2.4.6.2.

### 2.4.6.2 Flight instruction

The applicant shall have received dual instruction in airships 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) recognize and manage threats and errors.

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

- b) pre-flight operations, including mass and balance determination, airship inspection and servicing;
- c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- d) techniques and procedures for the take-off, including appropriate limitations, emergency procedures and signals used;
- e) control of the airship by external visual reference;
- f) recognition of leaks;
- g) normal take-offs and landings;
- h) maximum performance (short field and obstacle clearance) take-offs; short-field landings;
- i) flight under IFR;
- j) cross-country flying using visual reference, dead reckoning and, where available, radio navigation aids;
- k) emergency operations, including simulated airship equipment malfunctions;
- l) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures; and
- m) communication procedures and phraseology.

## **2.5 Multi-Crew pilot licence (MPL) appropriate to the aeroplane category**

Note.— The holder of a multi-crew pilot licence is authorized by 2.5.2.1 to act as co-pilot of an aeroplane required to be operated with a co-pilot. Such holder will be eligible to obtain an airline transport pilot licence appropriate to the aeroplane category, after fulfilling the requirements for that licence, to be restricted to multi-crew operations unless the requirements of 2.5.2.1 a), 2.5.2.2 and 2.5.2.3, as appropriate, are met (2.6.2.2 refers).

### **2.5.1 General requirements for the issue of the licence**

#### **2.5.1.1 Age**

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

#### **2.5.1.2 Competencies**

The applicant shall satisfactorily demonstrate the competencies identified in an adapted competency model to perform as a co-pilot of a turbine-powered air transport aeroplane certificated for operation with a minimum crew of at least two pilots. The adapted competency model shall be approved by CAAB, using as a basis the ICAO aeroplane pilot competency framework contained in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868).

Note 1. — Knowledge, skills and attitudes underpin these competencies as described in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868). The knowledge and skills described in 2.5.1.2.1 and 2.5.1.2.2 provide minimum requirements for the issuance of the multi-crew pilot licence.

Note 2.— The competencies of the approved adapted competency model provide individual and team countermeasures for the application of threat and error management. Guidance on threat and error management is contained in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868).

#### 2.5.1.2.1 Knowledge

2.5.1.2.1.1 The applicant shall at least have met the requirements specified in 2.6.1.2 for the airline transport pilot licence appropriate to the aeroplane category in an approved training course as well as the additional requirements underpinning the approved adapted competency model

2.5.1.2.1.2 Training in the underpinning knowledge requirements shall be fully integrated with the training of the underpinning skill requirements

#### 2.5.1.2.2 Skills

The applicant shall have demonstrated the underpinning skills required for the competencies of the approved adapted competency model as pilot flying and pilot monitoring, to the level required to perform as a co-pilot of turbine-powered aeroplanes certificated for operation with a minimum crew of at least two pilots under VFR and IFR.

2.5.1.2.3 The competency standards to be achieved and the associated performance criteria for the multi-crew pilot licence applicant shall be publicly available.

#### 2.5.1.3 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

2.5.2.1 Subject to compliance with the requirements specified in 1.2.5, 1.2.6, 1.2.7.1, 1.2.9 and 2.1, the privileges of the holder of a multi-crew pilot licence shall be:

- a) to exercise all the privileges of the holder of a private pilot licence in the aeroplane category provided the requirements of paragraph 2.3.3 have been met;
- b) to exercise the privileges of the instrument rating in a multi-crew operation; and
- c) to act as co-pilot of an aeroplane required to be operated with a co-pilot.

2.5.2.2 Before exercising the privileges of the instrument rating in a single-pilot operation in aeroplanes, the licence holder shall have demonstrated an ability to act as pilot-in-command in a single-pilot operation exercised by reference solely to instruments and shall have met the skill requirement specified in 2.7.1.2 appropriate to the aeroplane category.

2.5.2.3 Before exercising the privileges of a commercial pilot licence in a single-pilot operation in aeroplanes, the licence holder shall have:

- a) completed in aeroplanes 70 hours, either as pilot-in-command, or made up of not less than 10 hours as pilot-in-command and the necessary additional flight time as pilot-in-command under supervision;
- b) completed 20 hours of cross-country flight time as pilot-in-command, or made up of not less than 10 hours as pilot-in-command and 10 hours as pilot-in-command under

supervision, 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; and

- c) met the requirements for the commercial pilot licence specified in 2.4.1.2, 2.4.1.3, 2.4.3.1.1 (with the exception of 2.4.3.1.1.1 a)) and 2.4.3.2 appropriate to the aeroplane category.

Note 1.— When a Contracting State grants single-pilot operation privileges to the holder of a multi-crew pilot licence, it can document the privileges through an endorsement of the multi-crew pilot licence or through the issuance of a commercial pilot licence in the aeroplane category.

Note 2.— Certain privileges of the licence are curtailed by 2.1.10 for licence holders when they attain their 65th birthday.

### 2.5.3 Experience

2.5.3.1 The applicant shall have completed an approved training course not less than 240 hours which includes actual and simulated flight as pilot flying and pilot monitoring.

2.5.3.2 Flight experience in actual flight shall include at least the experience requirements at 2.3.3.1, upset prevention and recovery training, night flying and flight by reference solely to instruments.

Note 1.— Procedures for upset prevention and recovery training in actual flight are contained in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868).

Note 2.— Guidance on upset prevention and recovery training in actual flight is contained in the Manual on Aeroplane Upset Prevention and Recovery Training (Doc 10011).

2.5.3.3 In addition to meeting the provisions of 2.5.3.2, the applicant shall have gained, in a turbine-powered aeroplane certificated for operation with a minimum crew of at least two pilots or in a flight simulation training device approved for that purpose by CAAB authority in accordance with Appendix 3, paragraph 3, the experience necessary to achieve the final competency standard of the approved adapted competency model

### 2.5.4 Flight instruction

2.5.4.1 The applicant shall have completed a course of approved training covering the experience requirements specified in 2.5.3.

2.5.4.2 The applicant shall have received dual flight instruction in order to achieve the final competency standard in all the competencies of the approved adapted competency model, for the issue of the multi-crew pilot licence

Note.- The competencies of the approved adapted competency model provide individual and team countermeasures for the application of threat and error management. Guidance on threat and error management is contained in the Procedures for Air Navigation Services-Training (PANS-TRG, Doc 9868).

## **2.6 Airline transport pilot licence**

2.6.1 General requirements for the issue of the licence appropriate to the aeroplane, helicopter and powered-lift categories

2.6.1.1 Age

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

#### 2.6.1.2 Knowledge

2.6.1.2.1 The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of an airline transport pilot licence and appropriate to the category of aircraft intended to be included in the licence, in at least the following subjects:

##### Air law

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

##### Aircraft general knowledge for aeroplanes, helicopters and powered-lifts

- b) general characteristics and limitations of electrical, hydraulic, pressurization and other aircraft systems; flight control systems, including autopilot and stability augmentation;
- c) principles of operation, handling procedures and operating limitations of aircraft engines; effects of atmospheric conditions on engine performance; relevant operational information from the flight manual or other appropriate document;
- d) operating procedures and limitations of the relevant category of aircraft; effects of atmospheric conditions on aircraft performance in accordance with the relevant operational information from the flight manual;
- e) use and serviceability checks of equipment and systems of appropriate aircraft;
- 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 and electronic display units;
- g) maintenance procedures for airframes, systems and engines of appropriate aircraft;
- h) for helicopters and powered-lifts, transmission (power trains) where applicable;

##### Flight performance, planning and loading

- i) effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;
- j) use and practical application of take-off, landing and other performance data, including procedures for cruise control;
- k) 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;
- l) in the case of helicopters and powered-lifts, effects of external loading on handling;

##### Human performance

- m) human performance including principles of TEM;

Note.— Guidance material to design training programmes on human performance, including threat and error management (TEM), can be found in the Human Factors Training Manual (Doc 9683).

#### Meteorology

- n) 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;
- o) 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;
- p) causes, recognition and effects of icing; frontal zone penetration procedures; hazardous weather avoidance;
- q) in the case of aeroplanes and powered-lifts, practical high altitude meteorology, including interpretation and use of weather reports, charts and forecasts; jetstreams;

#### Navigation

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

#### Operational procedures

- v) application of TEM to operational performance;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

- w) interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
- x) precautionary and emergency procedures; safety practices;
- y) operational procedures for carriage of freight and dangerous goods;
- z) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aircraft;

- aa) in the case of helicopters, and if applicable, powered-lifts, settling with power; ground resonance; retreating blade stall; dynamic rollover and other operating hazards; safety procedures, associated with flight in VMC;

#### Principles of flight

- bb) principles of flight;

#### Radiotelephony

- cc) communication procedures and phraseology; action to be taken in case of communication failure.

2.6.1.2.2 In addition to the above subjects, the applicant for an airline transport pilot licence applicable to the aeroplane or powered-lift category shall have met the knowledge requirements for the instrument rating at 2.7.1.1.

#### 2.6.1.3 Skill

2.6.1.3.1 The applicant shall have demonstrated the ability to perform, as pilot-in-command of an aircraft within the appropriate category 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 engine, systems and airframe;
- d) procedures for crew incapacitation and crew coordination, including allocation of pilot tasks, crew cooperation and use of checklists; and
- e) in the case of aeroplanes and powered-lifts, procedures and manoeuvres for instrument flight described in 2.7.4.1 a) to d), including simulated engine failure.

2.6.1.3.1.1 In the case of an aeroplane, the applicant shall have demonstrated the ability to perform the procedures and manoeuvres described in 2.6.1.3.1 as pilot-in-command of a multi-engined aeroplane.

2.6.1.3.1.2 The applicant shall have demonstrated the ability to perform the procedures and manoeuvres described in 2.6.1.3 with a degree of competency appropriate to the privileges granted to the holder of an airline transport pilot licence, and to:

- a) recognize and manage threats and errors;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

- b) smoothly and accurately, manually control the aircraft within its limitations at all times, such that the successful outcome of a procedure or manoeuvre is assured;
- c) operate the aircraft in the mode of automation appropriate to the phase of flight and to maintain awareness of the active mode of automation;

- d) perform, in an accurate manner, normal, abnormal and emergency procedures in all phases of flight;
- e) exercise good judgement and airmanship, to include structured decision making and the maintenance of situational awareness; and
- f) communicate effectively with other flight crew members and demonstrate the ability to effectively perform procedures for crew incapacitation, crew coordination, including allocation of pilot tasks, crew cooperation, adherence to SOPs and use of checklists.

#### 2.6.1.4 Medical fitness

The applicant shall hold a current Class 1 Medical Assessment.

#### 2.6.2 Privileges of the holder of the licence 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, 1.2.7.1, 1.2.9 and 2.1, the privileges of the holder of an airline transport pilot licence shall be:

- a) to exercise all the privileges of the holder of a private and commercial pilot licence in an aircraft within the appropriate aircraft category and, in the case of a licence for the aeroplane and powered-lift categories, of the instrument rating; and
- b) to act as pilot-in-command, in commercial air transportation, of an aircraft within the appropriate category and certificated for operation with more than one pilot.

2.6.2.2 When the holder of an airline transport pilot licence in the aeroplane category has previously held only a multi-crew pilot licence, the privileges of the licence shall be limited to multi-crew operations unless the holder has met the requirements established in 2.5.2.1 a), 2.5.2.2 and 2.5.2.3 as appropriate. Any limitation of privileges shall be endorsed on the licence.

Note.— Certain privileges of the licence are curtailed by 2.1.10 for licence holders when they attain their 60th and 65th birthdays.

#### 2.6.3 Specific requirements for the issue of the aeroplane category rating

##### 2.6.3.1 Experience

2.6.3.1.1 The applicant shall have completed not less than 1 500 hours of flight time as a pilot of aeroplanes. CAAB shall determine whether experience as a pilot under instruction in a FSTD 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.

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

- a) 500 hours as pilot-in-command under supervision or 250 hours, either as pilot-in-command, or made up by not less than 70 hours as pilot-in-command and the necessary additional flight time as pilot-in-command under supervision;
- b) 200 hours of cross-country flight time, of which not less than 100 hours shall be as pilot-in-command or as pilot-in-command under supervision;

- 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.

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

Note.— The extent to which flight time experience may be reduced by the CAAB can be dependent on the applicant having demonstrated the final competency standard of an approved competency-based type rating training programme in the aeroplane category

#### 2.6.3.2 Flight instruction

The applicant shall have received the dual flight instruction required at 2.4.3.2 for the issue of the commercial pilot licence and at 2.7.4 for the issue of the instrument rating or at 2.5.4 for the issue of the multi-crew pilot licence.

#### 2.6.4 Specific requirements for the issue of the helicopter category rating

##### 2.6.4.1 Experience

2.6.4.1.1 The applicant shall have completed not less than 1 000 hours of flight time as a pilot of helicopters. CAAB shall determine whether experience as a pilot under instruction in a FSTD 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.

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

- a) 250 hours, either as pilot-in-command, or made up of not less than 70 hours as pilot-in-command and the necessary additional flight time as pilot-in-command under supervision;
- b) 200 hours of cross-country flight time, of which not less than 100 hours shall be as pilot-in-command or as pilot-in-command under supervision;
- 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.

2.6.4.1.2 When the applicant has flight time as a pilot of aircraft in other categories, CAAB shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.6.4.1.1 can be reduced accordingly.

Note.— The extent to which flight time experience may be reduced by the Licensing Authority can be dependent on the applicant having demonstrated the final competency standard of an approved competency-based type rating training programme in the helicopter category.

##### 2.6.4.2 Flight instruction

The applicant shall have received the flight instruction required for the issue of the commercial pilot licence (2.4.4.2).

Note.— The instrument time specified in 2.6.4.1.1.1 c) and the night flying time specified in 2.6.4.1.1.1 d) do not entitle the holder of the airline transport pilot licence — helicopter to pilot helicopters under IFR.

## 2.6.5 Specific requirements for the issue of the powered-lift category rating

### 2.6.5.1 Experience

2.6.5.1.1 The applicant shall complete not less than 1 500 hours of flight time as a pilot of powered-lifts. CAAB shall determine whether experience as a pilot under instruction in a FSTD is acceptable as part of the total flight time of 1 500 hours.

2.6.5.1.2 The applicant shall complete in powered-lifts not less than:

- a) 250 hours, either as pilot-in-command, or made up of not less than 70 hours as pilot-in-command and the necessary additional flight time as pilot-in-command under supervision;
- b) 100 hours of cross-country flight time, of which not less than 50 hours should be as pilot-in-command or as pilot-in-command under supervision;
- c) 75 hours of instrument time, of which not more than 30 hours may be instrument ground time; and
- d) 25 hours of night flight as pilot-in-command or as co-pilot.

2.6.5.1.3 When the applicant has flight time as a pilot of aircraft in other categories, CAAB shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.6.5.1.1 could be reduced accordingly.

Note.— The extent to which flight time experience may be reduced by CAAB can be dependent on the applicant having demonstrated the final competency standard of an approved competency- based type rating training programme in the powered-lift category.

### 2.6.5.2 Flight instruction

The applicant shall receive the dual flight instruction required at 2.4.5.2 for the issue of the commercial pilot licence and at 2.7.4 for the issue of the instrument rating.

## 2.7 Instrument rating

2.7.1 Requirements for the issue of the rating for aeroplane, airship, helicopter and powered-lift categories

### 2.7.1.1 Knowledge

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of an instrument rating, 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 for the aircraft category being sought

- b) use, limitation and serviceability of avionics, electronic devices and instruments necessary for the control and navigation of aircraft under IFR and in instrument meteorological conditions; use and limitations of automation;
- 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 for the aircraft category being sought

- 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 for the aircraft category being sought

- f) human performance relevant to instrument flight in aircraft including principles of threat and error management (TEM);

Note.— Guidance material to design training programmes on human performance, including threat and error management (TEM), can be found in the Human Factors Training Manual (Doc 9683).

Meteorology for the aircraft category being sought

- 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 icing; frontal zone penetration procedures; hazardous weather avoidance;
- i) in the case of helicopters and powered-lifts, effects of rotor icing;

Navigation for the aircraft category being sought

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

Operational procedures for the aircraft category being sought

- l) application of TEM to operational performance;
- m) 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;

- n) precautionary and emergency procedures; safety practices associated with flight under IFR; obstacle clearance criteria;

Note.— Information for pilots and flight operations personnel on flight procedure parameters and operational procedures is contained in the Procedures for Air Navigation Services (PANS-OPS, Doc 8168), Volume I — Flight Procedures. Procedures used in certain States may differ from PANS-OPS, and knowledge of these differences is important for safety reasons.

#### Radiotelephony

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

#### 2.7.1.2 Skill

2.7.1.2.1 The applicant shall have demonstrated in an aircraft of the category for which the instrument rating is being sought the ability to perform the procedures and manoeuvres described in 2.7.4.1 with a degree of competency appropriate to the privileges granted to the holder of an instrument rating, and to:

- a) recognize and manage threats and errors;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).

- b) operate the aircraft for the category being sought, within its limitations;
- c) complete all manoeuvres with smoothness and accuracy;
- d) exercise good judgement and airmanship;
- e) apply aeronautical knowledge; and
- f) maintain control of the aircraft at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

2.7.1.2.1.1 The applicant shall have demonstrated the ability to operate multi-engined aircraft within the appropriate category by reference solely to instruments with one engine inoperative, or simulated inoperative, if the privileges of the instrument rating are to be exercised on such aircraft.

Note.— See 2.1.6 on the use of FSTDs for demonstrations of skill.

#### 2.7.1.3 Medical fitness

2.7.1.3.1 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.

2.7.1.3.2 The holder of a private pilot licence shall require to meet the physical and mental, and visual requirements set by CAAB for the issue of a Class 1 Medical Assessment

#### 2.7.2 Privileges of the holder of the rating 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 an instrument rating with a specific aircraft category shall be to pilot that category of aircraft under IFR.

2.7.2.2 Before exercising the privileges on multi-engined aircraft, the holder of the rating shall have complied with the requirements of 2.7.1.2.1.1.

Note.— Pilots may exercise joint category privileges of the instrument rating on more than one category of aircraft if they have completed the requirements in each category.

### 2.7.3 Experience

2.7.3.1 The applicant shall hold a pilot licence for the aircraft category being sought.

2.7.3.2 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 Chairman, of which not less than 10 hours shall be in the aircraft category being sought; and
- b) 40 hours of instrument time in aircraft 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.

### 2.7.4 Flight instruction

2.7.4.1 The applicant shall have gained not less than 10 hours of the instrument flight time required in 2.7.3.2 b) while receiving dual instrument flight instruction in the aircraft category being sought, 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.

2.7.4.2 If the privileges of the instrument rating are to be exercised on multi-engined aircraft, the applicant shall have received dual instrument flight instruction in a multi-engined aircraft within the appropriate category from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in the operation of the aircraft within the appropriate category by reference solely to instruments with one engine inoperative or simulated inoperative.

## **2.8 Flight instructor rating appropriate to aeroplanes, airships, helicopters and powered-lifts**

### 2.8.1 Requirements for the issue of the rating

#### 2.8.1.1 Knowledge

The applicant shall have met the knowledge requirements for the issue of a commercial pilot licence as appropriate to the category of aircraft included in the licence. 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, including FSTDs as appropriate;
- j) analysis and correction of student errors;
- k) human performance relevant to flight instruction including principles of threat and error management (TEM);

Note.— Guidance material to design training programmes on human performance, including threat and error management (TEM), can be found in the Human Factors Training Manual (Doc 9683).

- l) hazards involved in simulating system failures and malfunctions in the aircraft.

#### 2.8.1.2 Skill

The applicant shall have demonstrated, in the category and class 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.

### 2.8.1.3 Experience

The applicant shall have met the experience requirements for the issue of a commercial pilot licence as specified in 2.4.3.1, 2.4.4.1, 2.4.5.1 and 2.4.6.1 for each aircraft category, as appropriate.

### 2.8.1.4 Flight instruction

The applicant shall, under the supervision of a flight instructor accepted by CAAB 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 practiced instructional techniques in those flight maneuvers and procedures in which it is intended to provide flight instruction.

## 2.8.2 Privileges of the holder of the rating 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 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.

2.8.2.2 The applicant, in order to carry out instruction for the multi-crew pilot licence, shall have also met all the instructor qualification requirements.

Note.— Specific provisions for flight instructors carrying out instruction for the multi-crew pilot licence are found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868).

## 2.9 Glider pilot licence

### 2.9.1 Requirements for the issue of the licence

#### 2.9.1.1 Age

The applicant shall be not less than 16 years of age.

#### 2.9.1.2 Knowledge

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

## Air law

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

## Aircraft general knowledge

- b) principles of operation of glider systems and instruments;
- c) operating limitations of gliders; relevant operational information from the flight manual or other appropriate document;

## Flight performance, planning and loading

- d) effects of loading and mass distribution on flight characteristics; mass and balance considerations;
- e) use and practical application of launching, landing and other performance data;
- f) pre-flight and en-route flight planning appropriate to operations under VFR; appropriate air traffic services procedures; altimeter setting procedures; operations in areas of high-density traffic;

## Human performance

- g) human performance relevant to the glider pilot including principles of threat and error management (TEM);

Note.— Guidance material to design training programmes on human performance, including threat and error management (TEM), can be found in the Human Factors Training Manual (Doc 9683).

## 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) different launch methods and associated procedures;
- l) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards;

## Principles of flight

m) principles of flight relating to gliders.

2.9.1.2.2 The applicant shall demonstrate a level of knowledge appropriate to the privileges to be granted to the holder of a glider pilot licence, in communication procedures and phraseology as appropriate to VFR operations and on 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 six hours of flight time as a pilot of gliders including two hours of solo flight time during which not less than 20 launches and landings have been performed.

2.9.1.3.1.1 When the applicant has flight time as a pilot of aeroplanes, CAAB 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.

2.9.1.3.2 The applicant shall have gained, under appropriate supervision, operational experience in gliders in at least the following areas:

- a) pre-flight operations, including glider assembly and inspection;
- b) techniques and procedures for the launching method used, including appropriate airspeed limitations, emergency procedures and signals used;
- c) traffic pattern operations, collision avoidance precautions and procedures;
- d) control of the glider by external visual reference;
- e) flight throughout the flight envelope;
- f) recognition of, and recovery from, incipient and full stalls and spiral dives;
- g) normal and crosswind launches, approaches and landings;
- h) cross-country flying using visual reference and dead reckoning;
- i) emergency procedures.

### 2.9.1.4 Skill

The applicant shall have demonstrated the ability to perform as pilot-in-command of a glider, the procedures and maneuvers described in 2.9.1.3.2 with a degree of competency appropriate to the privileges granted to the holder of a glider pilot licence, and to:

- a) recognize and manage threats and errors;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, and in the Human Factors Training Manual (Doc 9683).

- b) operate the glider within its limitations;

- c) complete all manoeuvres with smoothness and accuracy;
- d) exercise good judgement and airmanship;
- e) apply aeronautical knowledge; and
- f) maintain control of the glider at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

#### 2.9.1.5 Medical fitness

The applicant shall hold a current Class 2 Medical Assessment.

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

2.9.2.1 Subject to compliance with the requirements specified in 1.2.5, 1.2.6, 1.2.7.1 and 2.1, the privileges of the holder of a glider pilot licence shall be to act as pilot-in-command of any glider provided the licence holder has operational experience in the launching method used.

2.9.2.2 If passengers are to be carried, the licence holder shall complete not less than 10 hours of flight time as a pilot of gliders.

### **2.10 Free balloon pilot licence**

Note.— The provisions of the free balloon pilot licence apply to free balloons using hot air or gas.

#### 2.10.1 Requirements for the issue of the licence

##### 2.10.1.1 Age

The applicant shall be not less than 16 years of age.

##### 2.10.1.2 Knowledge

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

##### Air law

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

##### Aircraft general knowledge

- b) principles of operation of free balloon systems and instruments;
- c) operating limitations of free balloons; relevant operational information from the flight manual or other appropriate document;
- d) physical properties and practical application of gases used in free balloons;

#### Flight performance, planning and loading

- e) effects of loading on flight characteristics; mass calculations;
- f) use and practical application of launching, landing and other performance data, including the effect of temperature;
- g) pre-flight and en-route flight planning appropriate to operations under VFR; appropriate air traffic services procedures; altimeter setting procedures; operations in areas of high-density traffic;

#### Human performance

- h) human performance relevant to the free balloon pilot including principles of threat and error management (TEM);

Note.— Guidance material to design training programmes on human performance, including threat and error management (TEM), can be found in the Human Factors Training Manual (Doc 9683).

#### Meteorology

- i) application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry;

#### Navigation

- j) practical aspects of air navigation and dead-reckoning techniques; use of aeronautical charts;

#### Operational procedures

- k) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
- l) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards;

#### Principles of flight

- m) principles of flight relating to free balloons.

2.10.1.2.2 The applicant shall demonstrate a level of knowledge appropriate to the privileges to be granted to the holder of a free balloon pilot licence, in communication procedures and phraseology as appropriate to VFR operations and on action to be taken in case of communication failure.

#### 2.10.1.3 Experience

2.10.1.3.1 The applicant shall have completed not less than 16 hours of flight time as a pilot of free balloons including at least eight launches and ascents of which one must be solo.

2.10.1.3.2 The applicant shall have gained, under appropriate supervision, operational experience in free balloons in at least the following areas:

- a) pre-flight operations, including balloon assembly, rigging, inflation, mooring and inspection;

- b) techniques and procedures for the launching and ascent, including appropriate limitations, emergency procedures and signals used;
- c) collision avoidance precautions;
- d) control of the free balloon by external visual reference;
- e) recognition of, and recovery from, rapid descents;
- f) cross-country flying using visual reference and dead reckoning;
- g) approaches and landings, including ground handling;
- h) emergency procedures.

2.10.1.3.3 If the privileges of the licence are to be exercised at night, the applicant shall have gained, under appropriate supervision, operational experience in free balloons in night flying.

2.10.1.3.4 If passengers are to be carried for remuneration or hire, the licence holder shall complete not less than 35 hours of flight time including 20 hours as a pilot of a free balloon.

#### 2.10.1.4 Skill

The applicant shall have demonstrated the ability to perform as pilot-in-command of a free balloon, the procedures and manoeuvres described in 2.10.1.3.2 with a degree of competency appropriate to the privileges granted to the holder of a free balloon pilot licence, and to:

- a) recognize and manage threats and errors;

Note.— Guidance material on the application of threat and error management (TEM) is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section I, Chapter 6, and in the Human Factors Training Manual (Doc 9683).

- b) operate the free balloon within its limitations;
- c) complete all manoeuvres with smoothness and accuracy;
- d) exercise good judgement and airmanship;
- e) apply aeronautical knowledge; and
- f) maintain control of the free balloon at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

#### 2.10.1.5 Medical fitness

The applicant shall hold a current Class 2 Medical Assessment.

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

2.10.2.1 Subject to compliance with the requirements specified in 1.2.5, 1.2.6, 1.2.7.1, 2.1 and 2.10.1.3.4, the privileges of the holder of a free balloon pilot licence shall be to act as pilot-in-command of any free balloon provided that the licence holder has operational experience in hot air or gas balloons as appropriate.

2.10.2.2 Before exercising the privileges at night, the licence holder shall have complied with the requirements specified in 2.10.1.3.3.

## **B. LICENCES AND RATINGS FOR REMOTE PILOTS**

Applicable as of 3 November 2022.

### **2.11 General rules concerning remote pilot licences and ratings**

Note.— The provisions of Chapter 2, Subsection B are for international IFR operations of RPAS.

#### 2.11.1 General licensing specifications

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

- aeroplane
- airship
- glider
- rotorcraft
- powered-lift
- free balloon.

2.11.1.2 The category of RPA shall be endorsed as a category rating on the remote pilot licence.

2.11.1.3 An applicant shall, before being issued with any remote pilot licence or rating, meet such requirements in respect of age, experience, flight instruction, competencies and medical fitness, as are specified for that remote pilot licence or rating.

2.11.1.4 An applicant for any remote pilot licence or rating shall demonstrate, in a manner determined by CAAB, such requirements for knowledge and skill as are specified for that remote pilot licence or rating.

#### 2.11.2 Category ratings

2.11.2.1 When established, category ratings shall be for categories of RPA listed in 2.11.1.1.

2.11.2.2 The holder of a remote pilot licence seeking additional category ratings to be added to the existing licence shall meet the requirements of this ANO regarding RPAS appropriate to the privileges for which the category rating is sought.

#### 2.11.3 Class and type ratings

2.11.3.1 A class rating shall be established for RPA and associated RPS certificated for single remote pilot operations which have comparable handling, performance and characteristics unless a type rating is considered necessary by the Chairman.

2.11.3.2 A type rating shall be established for RPA and associated RPS certificated for operation with a minimum crew of at least two remote pilots or when considered necessary by CAAB.

Note.— Where a common type rating is established, it will be only for RPA with similar characteristics in terms of operating procedures, systems and handling.

2.11.3.3 When an applicant demonstrates competencies for the initial issue of a remote pilot licence, the category and the ratings appropriate to the class or type of RPA and associated RPS used in the demonstration shall be entered on that remote pilot licence.

2.11.3.4 The levels of performance to be achieved to operate the class or type of RPA for which the ratings are issued shall be publicly available.

#### 2.11.4 Circumstances in which class and type ratings are required

2.11.4.1 CAAB having issued a remote pilot licence shall not permit the holder of such remote pilot licence to act either as remote pilot-in-command or as remote co-pilot of an RPA and associated RPS unless the holder has received authorization as follows:

- a) the appropriate class rating specified in 2.11.3.1; or
- b) a type rating when required in accordance with 2.11.3.2.

2.11.4.1.1 When a type rating is issued limiting the privileges to act as remote co-pilot, or limiting the privileges to act as remote pilot only during the cruise phase of the flight, such limitation shall be endorsed on the rating.

2.11.4.1.2 When a class rating is issued limiting the privileges to act as remote pilot only during the cruise phase of the flight, such limitation shall be endorsed on the rating.

2.11.4.2 For the purpose of training, testing, or specific special purpose non-revenue flights, special authorization may be provided in writing to the remote pilot licence holder by CAAB in place of issuing the class or type rating in accordance with 2.11.4.1. This authorization shall be limited in validity to the time needed to complete the specific flight.

#### 2.11.5 Requirements for the issue of class and type ratings

##### 2.11.5.1 Class rating

The applicant shall have demonstrated the competencies required for the safe operations of an RPA of the class for which the rating is sought.

##### 2.11.5.2 Type rating as required by 2.11.3.2

The applicant shall have:

- a) gained, under appropriate supervision, experience in the applicable type of RPA and associated RPS and/or FSTD 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 engine, C2 link, systems and airframe;

- instrument procedures, including instrument approach, missed approach and landing procedures under normal, abnormal and emergency conditions, including simulated engine failure; and
- for the issue of an aeroplane category type rating, upset prevention and recovery training.

Note 1.— Procedures for upset prevention and recovery training are contained in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868).

Note 2.— Guidance on upset prevention and recovery training is contained in the Manual on Aeroplane Upset Prevention and Recovery Training (Doc 10011).

Note 3.— Guidance on the approval of FSTDs for upset prevention and recovery training is contained in The Manual of Criteria for the Qualification of Flight Simulation Training Devices (Doc 9625).

Note 4.— The aeroplane upset prevention and recovery training may be integrated in the type rating programme or be conducted immediately after, as an additional module.

- procedures for crew incapacitation and crew coordination including allocation of remote pilot tasks; crew cooperation and use of checklists;

Note.— See 2.11.7.1 on the qualifications required for remote pilots giving RPAS training.

- b) demonstrated the competencies required for the safe operation of the applicable type of RPA and associated RPS and demonstrated C2 link management skills, relevant to the duties of a remote pilot-in-command or a remote co-pilot as applicable.

Note.— Guidance of a general nature on cross-crew qualification and cross credit is found in the Manual of Procedures for Establishment and Management of a State's Personnel Licensing System (Doc 9379).

#### 2.11.6 Use of a FSTD for acquisition of experience and demonstration of competencies

The use of a FSTD for acquiring the experience or performing any manoeuvre required during the demonstration of competencies for the issue of a remote pilot licence or rating shall be approved by CAAB, which shall ensure that the FSTD used is appropriate to the task.

The use of a FSTD for acquiring the experience or performing any manoeuvre required during the demonstration of competencies for the issue of a remote pilot licence or rating shall be approved by CAAB, which shall ensure that the FSTD used is appropriate to the task.

#### 2.11.7 Circumstances in which authorization to conduct remote pilot licence training is required

2.11.7.1 CAAB having issued a remote pilot licence, shall not permit the holder thereof to carry out remote pilot licence training required for the issue of a remote pilot licence or rating, unless such holder has received proper authorization from CAAB. Proper authorization shall comprise:

- a) an RPAS instructor rating on the holder's remote pilot licence; or
- b) the authority to act as an agent of an approved training organization authorized by CAAB to carry out remote pilot licence training; or

c) a specific authorization granted by the Contracting State which issued the remote pilot licence.

2.11.7.2 CAAB shall not permit a person to carry out remote pilot licence training on a FSTD required for the issue of a remote pilot licence or rating unless such person holds or has held an appropriate remote pilot licence or has appropriate RPAS training and flight experience and has received proper authorization from CAAB.

2.11.7.2 A CAAB shall not permit a person to carry out remote pilot licence training on a FSTD required for the issue of a remote pilot licence or rating unless such person holds or has held an appropriate remote pilot licence or has appropriate RPAS training and flight experience and has received proper authorization from CAAB.

#### 2.11.8 Crediting of RPAS flight time

2.11.8.1 A student remote pilot shall be entitled to be credited in full with all solo and dual instruction RPAS flight time towards the total flight time required for the initial issue of a remote pilot licence.

2.11.8.2 The holder of a remote pilot licence shall be entitled to be credited in full with all dual instruction RPAS flight time towards the total RPAS flight time required for a remote pilot-in-command upgrade.

2.11.8.3 The holder of a remote pilot licence shall be entitled to be credited in full with all solo or dual instruction RPAS flight time, in a new category of RPA or for obtaining a new rating, towards the total RPAS flight time required for that rating.

2.11.8.4 The holder of a remote pilot licence, when acting as remote co-pilot of an RPA certificated for operation by a single remote pilot but required by CAAB to be operated with a remote co-pilot, shall be entitled to be credited with not more than 50 per cent of the remote co-pilot RPAS flight time towards the total RPAS flight time required for a remote pilot-in-command upgrade. CAAB may authorize that RPAS flight time be credited in full towards the total RPAS flight time required if the RPAS is equipped to be operated by a remote co-pilot and is operated in a multi-crew operation.

2.11.8.5 The holder of a remote pilot licence, when acting as remote co-pilot of an RPA certificated to be operated with a remote co-pilot, shall be entitled to be credited in full with this RPAS flight time towards the total RPAS flight time required for a remote pilot-in-command upgrade.

2.11.8.6 The holder of a remote pilot licence, when acting as remote pilot-in-command under supervision, shall be entitled to be credited in full with this RPAS flight time towards the total RPAS flight time required for a remote pilot-in-command upgrade.

2.11.8.7 When applying for a new rating, the holder of a remote pilot licence shall be entitled to be credited with RPAS flight time experience as a remote pilot of RPA. CAAB shall determine whether such experience is acceptable and, if so, the extent to which the experience requirements for the issue of a rating can be reduced accordingly.

Note.— The total RPAS flight time required is derived from the approved competency-based training programme.

2.11.9 Limitation of privileges of remote pilots who attain their 60th birthday and curtailment of privileges of remote pilots who attain their 65th birthday

CAAB, having issued remote pilot licences, shall not permit the holders thereof to act as pilot of an RPAS engaged in international commercial air transport operations if the licence holders have attained their 60th birthday or, in the case of operations with more than one pilot, their 65th birthday

## **2.12 Student remote pilot**

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

2.12.2 A student remote pilot shall not fly an RPA solo unless under the supervision of, or with the authority of, an authorized RPAS instructor.

2.12.2.1 A student remote pilot shall not fly an RPA solo on international RPAS operations unless by special or general arrangement between CAAB and other Contracting States concerned.

2.12.3 Medical fitness

CAAB shall not permit a student remote pilot to fly an RPA solo unless he/she holds a current Class 3 or a current Class 1 Medical Assessment.

Note.— A Class 1 medical assessment may be essential for a particular individual based on their work environment and responsibilities in the context of a specific RPAS application.

## 2.13 Remote pilot licence

Note.— The provisions of Chapter 2, subsection B are for international IFR operations of RPAS.

2.13.1 General requirements for the issue of the remote pilot licence

2.13.1.1 Age

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

2.13.1.2 Knowledge

The applicant shall demonstrate a level of knowledge appropriate to the privileges granted to the holder of a remote pilot licence and appropriate to the category of RPA and associated RPS intended to be included in the remote pilot licence, in at least the following subjects:

Air law

- a) rules and regulations relevant to the holder of a remote pilot licence; rules of the air; appropriate air traffic services practices and procedures;
- b) rules and regulations relevant to flight under IFR; related air traffic services practices and procedures;

General RPAS knowledge

- c) principles of operation and the functioning of engines, systems and instruments;

- d) operating limitations of the relevant category of RPA and engines; relevant operational information from the flight manual or other appropriate document;
- e) use and serviceability checks of equipment and systems of appropriate RPA;
- f) maintenance procedures for airframes, systems and engines of appropriate RPA;
- g) for rotorcraft and powered-lifts, transmission (power trains) where applicable;
- h) use, limitation and serviceability of avionics, electronic devices and instruments necessary for the control and navigation of an RPA under IFR and in instrument meteorological conditions;
- i) flight instruments; gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments;
- j) for airships, physical properties and practical application of gases;
- k) RPS general knowledge:
  - 1) principles of operation and function of systems and instruments;
  - 2) use and serviceability checks of equipment and systems of appropriate RPS;
  - 3) procedures in the event of malfunctions;
- l) C2 link general knowledge:
  - 1) different types of C2 links and their operating characteristics and limitations;
  - 2) use and serviceability checks of C2 link systems;
  - 3) procedures in the event of C2 link malfunction;
- m) detect and avoid capabilities for RPAS;

#### Flight performance, planning and loading

- n) effects of loading and mass distribution on RPA handling, flight characteristics and performance; mass and balance calculations;
- o) use and practical application of take-off, landing and other performance data;
- p) pre-flight and en-route flight planning appropriate to RPAS operations under IFR; preparation and submission of air traffic services flight plans under IFR; appropriate air traffic services procedures; altimeter setting procedures;
- q) in the case of airships, rotorcraft and powered-lifts, effects of external loading on handling;

#### Human performance

- r) human performance relevant to RPAS and instrument flight, including principles of TEM;

Note.— Guidance material to design training programmes on human performance, including TEM, can be found in the Human Factors Training Manual (Doc 9683).

## Meteorology

- s) interpretation and application of aeronautical meteorological reports, charts and forecasts; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;
- t) aeronautical meteorology; climatology of relevant areas with respect to the elements having an effect on 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;
- u) causes, recognition and effects of icing; frontal zone penetration procedures; hazardous weather avoidance;
- v) in the case of rotorcraft and powered-lifts, effects of rotor icing;
- w) in the case of high altitude operations, practical high altitude meteorology, including interpretation and use of weathers reports, charts and forecasts; jetstreams;

## Navigation

- x) 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 RPAS equipment;
- y) use, limitation and serviceability of avionics and instruments necessary for control and navigation;
- z) use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids;
- aa) principles and characteristics of self-contained and external-referenced navigation systems; operation of RPAS equipment;

## Operational procedures

- bb) application of threat and error management (TEM) to operational performance;

Note.— Guidance material on the application of TEM is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868) and in the Human Factors Training Manual (Doc 9683).

- cc) 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;
- dd) altimeter setting procedures;
- ee) appropriate precautionary and emergency procedures; safety practices associated with flight under IFR; obstacle clearance criteria;
- ff) operational procedures for carriage of freight; potential hazards associated with dangerous goods and their management;

- gg) requirements and practices for safety briefings to remote flight crew members
- hh) in the case of rotorcraft, and if applicable, powered-lifts, settling with power; ground resonance; retreating blade stall; dynamic rollover and other operating hazards; safety procedures, associated with flight in VMC;
- ii) operational procedures for handovers and coordination;
- jj) operational procedures for normal and abnormal C2 link operations;

#### Principles of flight

- kk) principles of flight; and

#### Radiotelephony

- ll) communication procedures and phraseology; action to be taken in case of communication failure.

#### 2.13.1.3 Skill

2.13.1.3.1 The applicant shall have demonstrated all the competencies of the adapted competency model approved by CAAB at the level required, to act as remote pilot in command of an RPAS operation within the appropriate category of RPA and associated RPS.

Note.— Guidance material on the ICAO competency framework and on the methodology to adapt the ICAO competency framework for remote pilots and develop the related competency-based training programme is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868).

2.13.1.3.2 If the privileges of the remote pilot are to be exercised on a multi-engined RPA, the applicant shall have demonstrated the ability to operate under IFR with degraded propulsion capabilities.

#### 2.13.1.4 Medical fitness

The applicant shall hold a current Class 3 Medical Assessment or a current Class 1 Medical Assessment.

Note.— A Class 1 Medical Assessment may be essential for a particular individual based on their work environment and responsibilities in the context of a specific RPAS application.

#### 2.13.2 Privileges of the holder of the remote pilot licence and the conditions to be observed in exercising such privileges

2.13.2.1 Subject to compliance with the requirements specified in 1.2.5, 1.2.6, 1.2.7.1, 1.2.9 and 2.11, the privileges of the holder of a remote pilot licence shall be:

- a) to act as remote pilot-in-command of an RPA and associated RPS, certificated for remote single-pilot operation;

- b) to act as remote co-pilot of an RPA and associated RPS, required to be operated with a remote co-pilot;
- c) to act as a remote pilot-in-command of an RPA and the associated RPS, required to be operated with a remote co-pilot; and
- d) to act either as remote pilot-in-command or as remote co-pilot of an RPAS under IFR.

2.13.2.2 Before exercising the privileges at night, the remote pilot licence holder shall have received dual instruction in an RPA and associated RPS in night flying, including take-off, landing and navigation.

Note.— Certain privileges of the remote pilot licence are curtailed by 2.11.9 for remote pilot licence holders when they attain their 60th and 65th birthdays.

### 2.13.3 Specific requirements for the issue of remote pilot licence

#### 2.13.3.1 Experience

The applicant shall have gained experience during training in operating the RPA and associated RPS to successfully demonstrate the competencies required in 2.13.1.3.

#### 2.13.3.2 Remote pilot licence training

2.13.3.2.1 In order to meet the requirements of the remote pilot licence, the applicant shall have completed an approved training course. The training shall be competency-based and, if applicable, conducted in a multi-crew operational environment.

2.13.3.2.2 During the training, the applicant shall have acquired the competencies and underpinning skills required for performing as a remote pilot of an RPA certificated for operation under IFR.

2.13.3.2.3 The applicant shall have received dual remote pilot licence training in an RPA and associated RPS, sought from an authorized RPAS instructor. The RPAS instructor shall ensure that the applicant has operational experience in all phases of flight and the entire operating envelope of an RPAS, including abnormal and emergency conditions, upset prevention and recovery training for the categories concerned, as well as IFR operations.

2.13.3.2.4 If the privileges of the remote pilot are to be exercised on a multi-engined RPA, the applicant shall have received dual instrument remote pilot licence training in a multi-engined RPA within the appropriate category from an authorized RPAS instructor. The RPAS instructor shall ensure that the applicant has operational experience in the operation of the RPA within the appropriate category with engines inoperative or simulated inoperative.

## **2.14 RPAS instructor rating**

### 2.14.1 Requirements for the issue of the rating

#### 2.14.1.1 Knowledge

2.14.1.1.1 The applicant shall demonstrate the ability to effectively assess trainees against the adapted competency model used in the approved training programme.

2.14.1.1.2 The applicant shall successfully complete the training and meet the qualifications of an approved training organization appropriate to the delivery of competency-based training programmes.

2.14.1.1.3 The RPAS instructor training programme shall focus on the development of competence in the following specific areas:

- a) the adapted competency model of the remote pilot training programme according to the defined grading system used by the RPAS operator or approved training organization;
- b) in accordance with the assessment and grading system of the RPAS operator or approved training organization, making assessments by observing behaviours; gathering objective evidence regarding the observable behaviours of the adapted competency model used;
- c) recognizing and highlighting performance that meets competency standards;
- d) determining root causes for deviations below the expected standards of performance; and
- e) identifying situations that could result in unacceptable reductions in safety margins.

2.14.1.1.4 The applicant shall have met the competency requirements for the issue of a remote pilot licence as appropriate to the category of RPA and associated RPS.

2.14.1.1.5 In addition, the applicant shall have demonstrated a level of competency appropriate to the privileges granted to the holder of an RPAS 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) competency-based training principles, including student assessments;
- f) evaluation of the training programme effectiveness;
- g) lesson planning;
- h) classroom instructional techniques;
- i) use of training aids, including FSTDs as appropriate;
- j) analysis and correction of student errors;
- k) human performance relevant to RPAS, instrument flight and remote pilot licence training, including principles of threat and error management (TEM); and

Note.— Guidance material to design training programmes on human performance, including threat and error management TEM, can be found in the Human Factors Training Manual (Doc 9683).

- l) hazards involved in simulating system failures and malfunctions in the aircraft.

2.14.1.2 Skill

2.14.1.2.1 The applicant shall have successfully performed a formal competency assessment, prior to conducting instruction and assessment within a competency-based training programme.

2.14.1.2.2 The competency assessment shall be conducted during a practical training session in the category of RPA and associated RPS for which RPAS instructor privileges are sought, including pre-flight, post-flight and ground instruction as appropriate.

2.14.1.2.3 The competency assessment shall be conducted by a person authorized by CAAB.

### 2.14.1.3 Experience

2.14.1.3.1 The applicant shall have met the requirements for the issue of a remote pilot licence, shall maintain competencies and meet the recent experience requirements for the licence.

2.14.1.3.2 The applicant shall have sufficient training and experience to attain the required level of proficiency in all of the required tasks, manoeuvres, operations and principles, and methods of instruction relevant to 2.13.3.2.

### 2.14.1.4 Remote pilot licence training.

The applicant shall, under the supervision of an RPAS instructor authorized by CAAB for that purpose:

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

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

2.14.2.1 Subject to compliance with the requirements specified in 1.2.5 and 2.11, the privileges of the holder of an RPAS instructor rating shall be:

- a) to supervise solo flights by student remote pilots; and
- b) to carry out remote pilot licence training for the issue of a remote pilot licence and an RPAS instructor rating provided that the RPAS instructor:
  - 1) holds at least the remote pilot licence and rating for which instruction is being given, in the appropriate RPA category and associated RPS;
  - 2) holds the remote pilot licence and rating necessary to act as the remote pilot-in-command of the RPA category and associated RPS on which the instruction is given; and
  - 3) has the RPAS instructor privileges granted endorsed on the remote pilot licence.

2.14.2.2 The applicant, in order to carry out remote pilot licence training in a multi crew operational environment, shall have also met all the instructor qualification requirements.

## **CHAPTER 3. LICENCES FOR FLIGHT CREW MEMBERS OTHER THAN LICENCES FOR PILOTS**

### **3.1 General rules concerning flight navigator and flight engineer licences**

3.1.1 An applicant shall, before being issued with a flight navigator licence or 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 navigator licence or a flight engineer licence shall demonstrate such requirements for knowledge and skill as are specified for those licences, in a manner determined by CAAB.

### **3.2 Flight navigator 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 navigator licence, in at least the following subjects:

Air law

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

Flight performance, planning and loading

- b) effects of loading and mass distribution on aircraft performance;
- c) use of take-off, landing and other performance data including procedures for cruise control;
- d) pre-flight and en-route operational flight planning; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; altimeter setting procedures;

Human performance

- e) human performance relevant to the flight navigator including principles of TEM;

Note.— Guidance material to design training programmes on human performance, including TEM, can be found in the Human Factors Training Manual (Doc 9683).

## Meteorology

- f) interpretation and practical application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;
- g) aeronautical meteorology; climatology of relevant areas in respect of the elements having an effect upon aviation; the movement of pressure systems; the structure of fronts, and the origin and characteristics of significant weather phenomena which affect take-off, en-route and landing conditions;

## Navigation

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

## Operational procedures

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

## Principles of flight

- o) principles of flight;

## Radiotelephony

- p) communication procedures and phraseology.

### 3.2.1.3 Experience

3.2.1.3.1 The applicant shall have completed in the performance of the duties of a flight navigator, not less than 200 hours of flight time acceptable to CAAB, in aircraft engaged in cross-country flights, including not less than 30 hours by night.

3.2.1.3.1.1 When the applicant has flight time as a pilot, CAAB shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 3.2.1.3.1 can be reduced accordingly.

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

- a) by night — not less than 25 times by celestial observations; and
- b) by day — not less than 25 times by celestial observations in conjunction with self-contained or external-referenced navigation systems.

#### 3.2.1.4 Skill

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

- a) recognize and manage threats and errors;

Note.— Guidance material on the application of TEM is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section-1 in Chapter 6, and in the Human Factors Training Manual (Doc 9683).

- b) exercise good judgement and airmanship;
- c) apply aeronautical knowledge;
- d) perform all duties as part of an integrated crew; and
- e) communicate effectively with the other flight crew members.

#### 3.2.1.5 Medical fitness

The applicant shall hold a current Class 2 Medical Assessment.

### 3.2.2 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 1.2.7.1, the privileges of the holder of a flight navigator licence shall be to act as flight navigator of any aircraft. If the privileges include radiotelephony communication, the licence holder shall comply with the requirements specified in 1.2.9.2.

## 3.3 Flight engineer licence

### 3.3.1 Requirements for the issue of the licence

#### 3.3.1.1 Age

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

#### 3.3.1.2 Knowledge

3.3.1.2.1 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 engines, 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 engines; 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, autopilots, 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, planning and loading

- 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

- o) human performance relevant to the flight engineer including principles of TEM;

Note.— Guidance material to design training programmes on human performance, including TEM, can be found in the Human Factors Training Manual (Doc 9683).

## Operational procedures

- p) principles of maintenance, procedures for the maintenance of airworthiness, defect reporting, pre-flight inspections, precautionary procedures for fueling and use of external power; installed equipment and cabin systems;
- 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) communication procedures and phraseology.

3.3.1.2.2 The applicant shall demonstrate 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.

### 3.3.1.3 Experience

3.3.1.3.1 The applicant shall have completed, under the supervision of a person accepted by CAAB for that purpose, not less than 100 hours of flight time in the performance of the duties of a flight engineer. CAAB 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.

3.3.1.3.1.1 When the applicant has flight time as a pilot, CAAB 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.

3.3.1.3.2 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 CAAB for that purpose, in at least the following areas:

- a) Normal procedures
  - pre-flight inspections
  - fueling procedures, fuel management
  - inspection of maintenance documents
  - normal flight deck procedures during all phases of flight
  - crew coordination 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.

#### 3.3.1.4 Skill

3.3.1.4.1 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) recognize and manage threats and errors;  
Note.— Guidance material on the application of TEM is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Part II, Section-1 in Chapter 6 and in the Human Factors Training Manual (Doc 9683).
- b) use aircraft systems within the aircraft's capabilities and limitations;
- c) exercise good judgement and airmanship;
- d) apply aeronautical knowledge;
- e) perform all the duties as part of an integrated crew with the successful outcome assured; and
- f) communicate effectively with the other flight crew members.

3.3.1.4.2 The use of a FSTD for performing any of the procedures required during the demonstration of skill described in 3.3.1.4.1 shall be approved by CAAB, which shall ensure that the FSTD is appropriate to the task.

#### 3.3.1.5 Medical fitness

The applicant shall hold a current Class 2 Medical Assessment.

3.3.2 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, 1.2.6 and 1.2.7.1, 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 CAAB 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 CAAB.

### **3.4 Flight radiotelephone operator**

Note 1.— Where the knowledge and skill of an applicant have been established as satisfactory in respect of the certification requirements for the radiotelephone operator's restricted certificate specified in the general radio regulations annexed to the International Telecommunication Convention and the applicant has met the requirements that are pertinent to the operation of the radiotelephone on board an aircraft, a CAAB may endorse a licence already held by the applicant (as provided for in 5.1.1.2 XIII) or issue a separate licence as appropriate.

Note 2.— Skill and knowledge requirements on radiotelephony procedures and phraseology have been developed as an integral part of all aeroplane, airship, helicopter and powered-lift pilot licences.

## **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 CAAB such requirements in respect of knowledge and skill as are specified for that licence or rating.

### **4.2 Aircraft maintenance engineer**

#### **4.2.1 Requirements for the issue of the licence**

Requirements for the issue of the licence of Age, Knowledge, Experience, Training and Skill shall be the requirements mentioned in CAAB ANO(AW) Part 66.

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

Privileges of the holder of the licence and the conditions to be observed in exercising such privileges shall be the Privileges of the holder of the licence and the conditions to be observed in exercising such privileges mentioned in ANO (AW) Part-66..

### **4.3 Student air traffic controller**

4.3.1 CAAB shall take the appropriate measures to ensure that student air traffic controllers do not constitute a hazard to air navigation.

#### **4.3.2 Medical fitness**

CAAB shall not permit a student air traffic controller to receive instruction in an operational environment unless that student air traffic controller holds a current Class 3 Medical Assessment.

### **4.4 Air traffic controller licence**

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

Before issuing an air traffic controller licence 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 21 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) until 2 November 2022, principles of flight; principles of operation and functioning of aircraft, engines and systems; aircraft performance relevant to air traffic control operations;
- c) as of 3 November 2022, principles of flight; principles of operation and functioning of aircraft and RPAS, engines and systems; aircraft performance relevant to air traffic control operations;

##### Human performance

- d) human performance including principles of TEM;

Note.— Guidance material to design training programmes on human performance, including TEM, can be found in the Human Factors Training Manual (Doc 9683).

##### Meteorology

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

##### Navigation

- f) 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

4.4.1.3.1 The applicant shall have completed an approved training course and demonstrated the required competence, having accomplished not less than three months of satisfactory service engaged in the actual control of air traffic under the supervision of an air traffic control (ATC) on-the-job training instructor (OJTI). The experience requirements specified for air traffic controller ratings in 4.5 may be credited as part of the experience specified in this paragraph.

4.4.1.3.2 An air traffic controller acting as an air traffic control on-the-job training instructor shall hold an appropriate rating and be qualified as an air traffic control on-the-job training instructor.

Note.— The Procedures for Air Navigation Services — Training (Doc 9868) contains guidance on the qualification of air traffic control on-the-job training instructors and on competency-based training and assessment for air traffic controllers. The Manual on Air Traffic Controller Competency-based Training and Assessment and the Manual on Air Traffic Control On-the-Job Training Instructor Competency-based Training and Assessment (Doc 10056, Volumes I and II) provide additional guidance to support stakeholders in the successful implementation of competency-based training and assessment for air traffic controllers.

4.4.1.4 Medical fitness

The applicant shall hold a current Class 3 Medical Assessment.

## **4.5 Air traffic controller ratings**

4.5.1 Categories of air traffic controller ratings

Air traffic controller ratings shall comprise the following categories:

- a) aerodrome control rating;
- b) approach control procedural rating;
- c) approach control surveillance rating;
- d) approach precision radar control rating;
- e) area control procedural rating; and
- f) area control surveillance 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 procedural and area control procedural 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 control surveillance, approach precision radar control and area control surveillance 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 applicable ATS surveillance systems and associated equipment; and
  - 2) procedures for the provision of ATS surveillance service, as appropriate, including procedures to ensure appropriate terrain clearance.

#### 4.5.2.2 Experience

##### 4.5.2.2.1 The applicant shall have:

- a) satisfactorily completed an approved training course;
- b) demonstrated the required competence while providing, under the supervision of an air traffic control (ATC) on-the-job training instructor (OJTI), one or more of the following:
  - 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 control procedural, approach control surveillance, area control procedural or area control surveillance 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 CAAB. 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

4.5.2.2.2 The application for a rating shall be made within six months from the completion of experience specified in 4.5.2.2.1.b.

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, CAAB 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, including the recognition and management of threats and errors.

Note.— Guidance material on the application of TEM is found in the Procedures for Air Navigation Services — Training (Doc 9868, PANS-TRG), Part II, Section-1 in Chapter 6, and in the Human Factors Training Manual (Doc 9683).

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

When two air traffic controller ratings are sought concurrently, CAAB 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, 1.2.6, 1.2.7.1 and 1.2.9, 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 procedural 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 control surveillance rating: to provide and/or supervise the provision of approach control service with the use of applicable ATS 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 procedural 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 control surveillance rating: to provide and/or supervise the provision of area control service with the use of an ATS surveillance system, within the control area or portion thereof, for which the licence holder is rated.

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 CAAB 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 from CAAB.

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 determined by the CAAB. That period shall not exceed six 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 for operational control and to the holder of a flight operations officer licence; appropriate air traffic services practices and procedures;

Aircraft general knowledge

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

Flight performance calculation, planning procedures and loading

- 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 aerodrome selection procedures; en-route cruise control; extended range operation;
- g) take off performance including field length, climb and obstacle criteria and limitation;
- h) cruise performance including minimum altitudes, decompression/engine out/gear down scenario planning;
- i) landing performance including approach climb and field length criteria and limitations;

#### Meteorology

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

#### Human performance

- l) human performance relevant to operational control duties, including principles of TEM;

Note.— Guidance material to design training programmes on human performance, including TEM, can be found in the Human Factors Training Manual (Doc 9683).

#### Navigation

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

#### Operational procedures

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

#### Principles of flight

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

#### Radio communication

- s) 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 of 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 providing operational control to 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) identify and to retrieve aeronautical data and other information relevant for the analysis of operational situations and risks;
- b) identify and evaluate the risk factors and the possible consequences for flight operations;
- c) identify and evaluate actions considering risk, the effect on flight safety and regularity of the operation;
- d) determine an appropriate course of action based on the responsibilities and policies described in the operation manuals;
- e) apply appropriate standard and non-standard procedures from the operations manual for the initiation, planning, continuation, diversion or termination of flights in the interest of safety of the aircraft and regularity and efficiency of the operation;
- f) make an accurate and operationally acceptable weather analysis provide an operationally valid briefing on weather conditions of a specific air route; forecast weather trends pertinent to air transportation with particular reference to destination and alternates;
- g) identify and apply operational limitations and minimums in relation to the weather, aircraft status and appropriate navigation procedures;

Note.— Guidance material on the application of TEM is found in the Procedures for Air Navigation Services — Training (Doc 9868, PANS-TRG), Part II, Section-1 in Chapter 6, and in the Human Factors Training Manual (Doc 9683).

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.

#### **4.7 Aeronautical station operator licence**

Note.— This licence is not intended for personnel providing AFIS. Guidance on the qualifications to be met by these personnel can be found in Circular 211, Aerodrome Flight Information Service (AFIS).

##### 4.7.1 Requirements for the issue of the licence

4.7.1.1 Before issuing an aeronautical station operator licence, CAAB shall require the applicant to meet the requirements of 4.7.1. Unlicensed individuals may operate as aeronautical station operators on the condition that the State from which they operate ensures that they meet the same requirements.

##### 4.7.1.2 Age

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

##### 4.7.1.3 Knowledge

The applicant shall have demonstrated a level of knowledge appropriate to the holder of an aeronautical station operator, in at least the following subjects:

General knowledge

- a) air traffic services provided within the State;

Operational procedures

- b) radiotelephony procedures; phraseology; telecommunication network;

Rules and regulations

- c) rules and regulations applicable to the aeronautical station operator; and

Telecommunication equipment

- d) principles, use and limitations of telecommunication equipment in an aeronautical station.

##### 4.7.1.4 Experience

The applicant shall have:

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

#### 4.7.1.5 Skill

The applicant shall demonstrate, or have demonstrated, competency in:

- a) operating the telecommunication equipment in use; and
- b) transmitting and receiving radiotelephony messages with efficiency and accuracy.

#### 4.7.2 Privileges of the aeronautical station operator and the conditions to be observed in exercising such privileges

Subject to compliance with the requirements specified in 1.2.5 and 1.2.9, the privileges of the holder of an aeronautical station operator licence shall be to act as an operator in an aeronautical station. Before exercising the privileges of the licence, the holder shall be familiar with all pertinent and current information regarding the types of equipment and operating procedures used at that aeronautical station.

### **4.8 Aeronautical meteorological personnel**

Note. — The requirements for qualifications, competencies, education and training for all aeronautical meteorological personnel are the responsibility of the World Meteorological Organization (WMO) in accordance with the Working Arrangements between the International Civil Aviation Organization and the World Meteorological Organization (Doc 7475). The requirements can be found in the Technical Regulations (WMO-No. 49), Volume I — General Meteorological Standards and Recommended Practices, Part V — Qualifications and Competencies of Personnel Involved in the Provision of Meteorological (Weather and Climate) and Hydrological Services, Part VI — Education and Training of Meteorological Personnel, and Appendix A — Basic Instruction Packages.

## **CHAPTER 5. SPECIFICATIONS FOR PERSONNEL LICENCES**

5.1 Personnel licences issued by CAAB in accordance with the relevant provisions of this ANO shall conform to the following specifications:

### 5.1.1 Detail

5.1.1.1 CAAB having issued a licence shall ensure that other States are able to easily determine the licence privileges and validity of ratings.

Note.— Operator records or a flight crew member's personal log book, in which maintenance of competency and recent experience may be satisfactorily recorded, are not normally carried on international flights.

5.1.1.2 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 also if script of national language is other than Roman); IVa) Date of birth;
- V) Address of holder if desired by the State;
- 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, including an endorsement of language proficiency, and other information required in pursuance to Article 39 of the Chicago Convention; and
- XIV) Any other details desired by the State issuing the licence.

#### 5.1.2 Material

First quality paper or other suitable material, including plastic cards, shall be used and the items mentioned in 5.1.1.2 shown clearly thereon.

#### 5.1.3 Language

Licences shall be issued in English.

#### 5.1.4 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.

Note.— Item headings may be arranged in such order as may best suit the convenience of the CAAB.

## CHAPTER 6. MEDICAL PROVISIONS FOR LICENSING

Note 1.— Procedures 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 of the individual medical examiner. The evaluation must, therefore, be based on a medical examination conducted throughout in accordance with the highest standards of medical practice.

Note 2.— Predisposing factors for disease, such as obesity and smoking, may be important for determining whether further evaluation or investigation is necessary in an individual case.

Note 3.— In cases where the applicant does not fully meet the medical requirements and in complicated and unusual cases, the evaluation may have to be deferred and the case submitted to the medical assessor of the Licensing Authority for final evaluation. In such cases 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 4.— See the administrative clause in 1.2.4.10 dealing with accredited medical conclusion.

Note 5.— Guidance material to assist Licensing Authorities and medical examiners is published separately in the Manual of Civil Aviation Medicine (Doc 8984). This guidance material also contains a discussion of the terms “likely” and “significant” as used in the context of the medical provisions in Chapter 6.

Note 6.— Basic safety management principles, when applied to the medical assessment process, can help ensure that aeromedical resources are utilized effectively.

### 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, airship, helicopter and powered-lift
- multi-crew pilot licences — aeroplane
- airline transport pilot licences — aeroplane, helicopter and powered-lift

b) Class 2 Medical Assessment;

applies to applicants for, and holders of:

- flight navigator licences
- flight engineer licences

- private pilot licences — aeroplane, airship, helicopter and powered-lift
  - glider pilot licences
  - free balloon pilot licences
- c) Class 3 Medical Assessment;
- applies to applicants for, and holders of:
- air traffic controller licences
  - as of 3 November 2022, remote pilot 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 1.2.4.7.1.

6.1.3 The medical examiner shall report to CAAB 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 (1.2.4.10).

6.1.4 The level of medical fitness to be met for the renewal of a Medical Assessment shall be the same as that 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; or
- d) any effect or side-effect of any prescribed or non-prescribed therapeutic, diagnostic or preventive medication taken;

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.

Note.— Use of herbal medication and alternative treatment modalities requires particular attention to possible side-effects.

### 6.2.3 Visual acuity test requirements

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

6.2.3.2 The following shall be adopted for tests of visual acuity:

- a) Visual acuity tests shall be conducted in an environment with a level of illumination that corresponds to ordinary office illumination (30-60 cd/m<sup>2</sup>).
- b) Visual acuity shall be measured by means of a series of Landolt rings or similar optotypes, placed at a distance from the applicant appropriate to the method of testing adopted.

### 6.2.4 Colour perception requirements

6.2.4.1 CAAB shall use such methods of examination as will guarantee reliable testing of colour perception.

6.2.4.2 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.

6.2.4.3 The applicant shall be tested for the ability to correctly identify a series of pseudoisochromatic plates in daylight or in artificial light of the same colour temperature such as that provided by CIE standard illuminants C or D65 as specified by the International Commission on Illumination (CIE).

6.2.4.4 An applicant obtaining a satisfactory result as prescribed by CAAB shall be assessed as fit. An applicant failing to obtain a satisfactory result in such a test shall be assessed as unfit unless able to readily distinguish the colours used in air navigation and correctly identify aviation coloured lights. Applicants who fail to meet these criteria shall be assessed as unfit except for Class 2 assessment with the following restriction: valid daytime only.

Note.— Guidance on suitable methods of assessing colour vision is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.2.4.4.1 Sunglasses worn during the exercise of the privileges of the licence or rating held shall be non-polarizing and of a neutral grey tint.

## 6.2.5 Hearing test requirements

6.2.5.1 CAAB shall use such methods of examination as will guarantee reliable testing of hearing.

6.2.5.2 Applicants shall be required to demonstrate a hearing performance sufficient for the safe exercise of their licence and rating privileges.

6.2.5.3 Applicants for Class 1 Medical Assessments shall be tested by pure-tone audiometry at first issue of the Assessment, not less than once every five years up to the age of 40 years, and thereafter not less than once every two years.

6.2.5.3.1 Alternatively, other methods providing equivalent results may be used.

6.2.5.4 Applicants for Class 3 Medical Assessments shall be tested by pure-tone audiometry at first issue of the Assessment, not less than once every four years up to the age of 40 years, and thereafter not less than once every two years.

6.2.5.4.1 Alternatively, other methods providing equivalent results may be used.

6.2.5.5 Applicants for Class 2 Medical Assessment shall be tested by pure-tone audiometry at first issue of the Assessment and, after the age of 50 years, not less than once every two years.

6.2.5.6 At medical examinations, other than those mentioned in 6.2.5.3, 6.2.5.4 and 6.2.5.5, where audiometry is not performed, applicants shall be tested in a quiet room by whispered and spoken voice tests.

Note 1.— The reference zero for calibration of pure-tone audiometers is that of the pertinent Standards of the current edition of the Audiometric Test Methods, published by the International Organization for Standardization (ISO).

Note 2.— For the purpose of testing hearing in accordance with the requirements, a quiet room is a room in which the intensity of the background noise is less than 35 dB(A).

Note 3.— For the purpose of testing hearing in accordance with the requirements, the sound level of an average conversational voice at 1 m from the point of output (lower lip of the speaker) is c. 60 dB(A) and that of a whispered voice c. 45dB(A). At 2 m from the speaker, the sound level is 6 dB(A) lower.

Note 4.— Guidance on assessment of applicants who use hearing aids is contained in the Manual of Civil Aviation Medicine (Doc 8984).

Note 5.— See 2.7.1.3.1 on requirements for the issue of instrument rating to applicants who hold a private pilot licence.

## 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, airship, helicopter or powered-lift, a multi-crew pilot licence — aeroplane, or an airline transport pilot licence — aeroplane, helicopter or powered-lift 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, airship, helicopter or powered-lift, multi-crew pilot licences — aeroplane, or airline transport pilot licences — aeroplane, helicopter or powered-lift shall have their Class 1 Medical Assessments renewed at intervals not exceeding those specified in 1.2.5.2.

6.3.1.3 When CAAB 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

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) an organic mental disorder;
- b) a mental or behavioural disorder due to use of psychoactive substances; this includes dependence syndrome induced by alcohol or other psychoactive substances;
- c) schizophrenia or a schizotypal or delusional disorder;
- d) a mood (affective) disorder;
- e) a neurotic, stress-related or somatoform disorder;
- f) a behavioural syndrome associated with physiological disturbances or physical factors;
- g) a disorder of adult personality or behaviour, particularly if manifested by repeated overt acts;
- h) mental retardation;
- i) a disorder of psychological development;
- j) a behavioural or emotional disorder, with onset in childhood or adolescence; or
- k) a mental disorder not otherwise specified;

such as might render the applicant unable to safely exercise the privileges of the licence applied for or held.

6.3.2.2.1 An applicant with depression, being treated with antidepressant medication, shall be assessed as unfit unless the medical assessor, having access to the details of the case concerned, considers the applicant's condition as unlikely to interfere with the safe exercise of the applicant's licence and rating privileges.

Note 1.— Guidance on assessment of applicants treated with antidepressant medication is contained in the Manual of Civil Aviation Medicine (Doc 8984).

Note 2.— Mental and behavioural disorders are defined in accordance with the clinical descriptions and diagnostic guidelines of the World Health Organization as given in the International Statistical Classification of Diseases and Related Health Problems, 10th Edition — Classification of Mental and Behavioural Disorders, WHO 1992. This document contains detailed descriptions of the diagnostic requirements, which may be useful for their application to medical assessment.

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 are likely to interfere with the safe exercise of the applicant's licence and rating privileges;
- b) epilepsy; or
- c) any disturbance of consciousness without satisfactory medical explanation of cause.

6.3.2.4 The applicant shall not have suffered any head injury, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges.

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.

6.3.2.5.1 An applicant who has undergone coronary bypass grafting or angioplasty (with or without stenting) or other cardiac intervention or who has a history of myocardial infarction or who suffers from any other potentially incapacitating cardiac condition shall be assessed as unfit unless the applicant's cardiac condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

6.3.2.5.2 An applicant with an abnormal cardiac rhythm shall be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

Note.— Guidance on cardiovascular evaluation is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.3.2.6 Electrocardiography shall form part of the heart examination for the first issue of a Medical Assessment.

6.3.2.6.1 Electrocardiography shall be included in re-examinations of applicants over the age of 50 no less frequently than annually.

6.3.2.6.2 Electrocardiography shall be included in re-examinations of applicants between the ages of 30 and 50 no less frequently than every two years.

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 electro-cardiography is contained in the Manual of Civil Aviation Medicine (Doc 8984).

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

6.3.2.7.1 The use of drugs for control of high blood pressure shall be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges.

Note.— Guidance on the subject of blood pressure is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.3.2.8 There shall be no significant functional nor structural abnormality of the circulatory system.

6.3.2.9 There shall be no acute disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleurae likely to result in incapacitating symptoms during normal or emergency operations.

6.3.2.9.1 Chest radiography shall form part of the initial examination.

Note.— Periodic chest radiography is usually not necessary but may be a necessity in situations where asymptomatic pulmonary disease can be expected.

6.3.2.10 Applicants with chronic obstructive pulmonary disease shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

6.3.2.11 Applicants with asthma causing significant symptoms or likely to cause incapacitating symptoms during normal or emergency operations shall be assessed as unfit.

6.3.2.11.1 The use of drugs for control of asthma shall be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges.

Note.— Guidance on hazards of medication and drugs is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.3.2.12 Applicants with active pulmonary tuberculosis shall be assessed as unfit.

6.3.2.12.1 Applicants with quiescent or healed lesions which are known to be tuberculous, or are presumably tuberculous in origin, may be assessed as fit.

Note 1.— Guidance on assessment of respiratory diseases is contained in the Manual of Civil Aviation Medicine (Doc 8984).

Note 2.— Guidance on hazards of medications and drugs is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.3.2.13 Applicants with significant impairment of function of the gastrointestinal tract or its adnexa shall be assessed as unfit.

6.3.2.13.1 Applicants shall be completely free from those hernias that might give rise to incapacitating symptoms.

6.3.2.14 Applicants with sequelae of disease of, or surgical intervention on, any part of the digestive tract or its adnexa, likely to cause incapacitation in flight, in particular any obstruction due to stricture or compression, shall be assessed as unfit.

6.3.2.14.1 An applicant who has undergone a major surgical operation on the biliary passages or the digestive tract or its adnexa with a total or partial excision or a diversion of any of these organs shall be assessed as unfit until such time as the medical assessor, having access to the details of the operation concerned, considers that the effects of the operation are not likely to cause incapacitation in flight.

6.3.2.15 Applicants with metabolic, nutritional or endocrine disorders that are likely to interfere with the safe exercise of their licence and rating privileges shall be assessed as unfit.

6.3.2.16 Applicants with insulin-treated diabetes mellitus shall be assessed as unfit.

Note.— Guidance on assessment of Type 2 insulin-treated diabetic applicants under the provisions of 1.2.4.10 is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.3.2.16.1 Applicants with non-insulin-treated diabetes mellitus shall be assessed as unfit unless the condition is shown to be satisfactorily controlled by diet alone or by diet combined with oral anti-diabetic medication, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges.

Note.— Guidance on assessment of diabetic applicants is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.3.2.17 Applicants with diseases of the blood and/or the lymphatic system shall be assessed as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

Note.— Sickle cell trait or other haemoglobinopathic traits are usually compatible with a fit assessment.

6.3.2.18 Applicants with renal or genito-urinary disease shall be assessed as unfit, unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

6.3.2.18.1 Urine examination shall form part of the medical examination and abnormalities shall be adequately investigated.

Note.— Guidance on urine examination and evaluation of abnormalities is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.3.2.19 Applicants with sequelae of disease of or surgical procedures on the kidneys or the genito-urinary tract, in particular obstructions due to stricture or compression, shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

6.3.2.19.1 Applicants who have undergone nephrectomy shall be assessed as unfit unless the condition is well compensated.

6.3.2.20 Applicants who are seropositive for HIV shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed as not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

Note 1.— Early diagnosis and active management of HIV disease with antiretroviral therapy reduces morbidity and improves prognosis and thus increases the likelihood of a fit assessment.

Note 2.— Guidance on the assessment of applicants who are seropositive for HIV is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.3.2.21 Applicants who are pregnant shall be assessed as unfit unless obstetrical evaluation and continued medical supervision indicate a low-risk uncomplicated pregnancy.

6.3.2.21.1 For applicants with a low-risk uncomplicated pregnancy, evaluated and supervised in accordance with 6.3.2.21, the fit assessment shall be limited to the period from the end of the 12th week until the end of the 26th week of gestation.

6.3.2.22 Following confinement or termination of pregnancy, the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-evaluation in accordance with best medical practice and it has been determined that she is able to safely exercise the privileges of her licence and ratings.

6.3.2.23 The applicant shall not possess any abnormality of the bones, joints, muscles, tendons or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

Note.— Any sequelae after lesions affecting the bones, joints, muscles or tendons, and certain anatomical defects will normally require functional assessment to determine fitness.

6.3.2.24 The applicant shall not possess any abnormality or disease of the ear or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

6.3.2.25 There shall be:

- a) no disturbance of vestibular function;
- b) no significant dysfunction of the Eustachian tubes; and
- c) no unhealed perforation of the tympanic membranes.

6.3.2.25.1 A single dry perforation of the tympanic membrane need not render the applicant unfit.

Note.— Guidance on testing of the vestibular function is contained in Manual of Civil Aviation Medicine (Doc 8984).

6.3.2.26 There shall be:

- a) no nasal obstruction; and
- b) no malformation nor any disease of the buccal cavity or upper respiratory tract

which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

6.3.2.27 Applicants with stuttering or other speech defects sufficiently severe to cause impairment of speech communication 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 adnexa shall be normal. There shall be no active pathological condition, acute or chronic, nor any sequelae of surgery or trauma of the eyes or their adnexa likely to reduce proper visual function to an extent that would interfere with the safe exercise of the applicant's licence and rating privileges.

6.3.3.2 Distant visual acuity with or without correction shall be 6/9 or better in each eye separately, and binocular visual acuity shall be 6/6 or better. No limits apply to uncorrected visual acuity. 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 during the exercise of the privileges of the licence or rating applied for or held; and
- b) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's licence.

Note 1.— 6.3.3.2 b) is the subject of Standards in ANO 6-I.

Note 2.— An applicant accepted as meeting these provisions is deemed to continue to do so unless there is reason to suspect otherwise, in which case an ophthalmic report is required at the discretion of CAAB. Both uncorrected and corrected visual acuity are normally measured and recorded at each re-examination. Conditions which indicate a need to obtain an ophthalmic report include: a substantial decrease in the uncorrected visual acuity, any decrease in best corrected visual acuity, and the occurrence of eye disease, eye injury or eye surgery.

6.3.3.2.1 Applicants may use contact lenses to meet this requirement provided that:

- a) the lenses are monofocal and non-tinted;
- b) the lenses are well tolerated; and
- c) a pair of suitable correcting spectacles is kept readily available during the exercise of the licence privileges.

Note.— Applicants who use contact lenses may not need to have their uncorrected visual acuity measured at each re-examination provided the history of their contact lens prescription is known.

6.3.3.2.2 Applicants with a large refractive error shall use contact lenses or high-index spectacle lenses.

Note.— If spectacles are used, high-index lenses are needed to minimize peripheral field distortion.

6.3.3.2.3 Applicants whose uncorrected distant visual acuity in either eye is worse than 6/60 shall be required to provide a full ophthalmic report prior to initial Medical Assessment and every five years thereafter.

Note 1.— The purpose of the required ophthalmic examination is (1) to ascertain normal visual performance, and (2) to identify any significant pathology.

Note 2.— Guidance on the assessment of monocular applicants under the provisions of 1.2.4.10 is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.3.3.3 Applicants who have undergone surgery affecting the refractive status of the eye shall be assessed as unfit unless they are free from those sequelae which are likely to interfere with the safe exercise of their licence and rating privileges.

6.3.3.4 The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by 6.3.3.2, 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 near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correction already prescribed in accordance with 6.3.3.2; if no such correction is prescribed, a pair of spectacles for near use shall be kept readily available during the exercise of the privileges of the licence. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

Note 1.— N5 and N14 refer to the size of typeface used. For further details, see the Manual of Civil Aviation Medicine (Doc 8984).

Note 2.— An applicant who needs near correction to meet this requirement will require “look-over”, bifocal or perhaps multifocal 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 for reading) significantly reduces distant visual acuity and is therefore not acceptable.

Note 3.— 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 When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.

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

6.3.3.6 The applicant shall be required to have normal binocular function.

6.3.3.6.1 Reduced stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia need not be disqualifying.

6.3.4 Hearing requirements

6.3.4.1 The applicant, when tested on a pure-tone audiometer, 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.

6.3.4.1.1 An applicant with a hearing loss greater than the above may be declared fit provided that the applicant has normal hearing performance against a background noise that reproduces or simulates the masking properties of flight deck noise upon speech and beacon signals.

Note 1.— It is important that the background noise be representative of the noise in the cockpit of the type of aircraft for which the applicant's licence and ratings are valid.

Note 2.— In the speech material for discrimination testing, both aviation-relevant phrases and phonetically balanced words are normally used.

6.3.4.1.2 Alternatively, a practical hearing test conducted in flight in the cockpit of an aircraft of the type for which the applicant's licence and ratings are valid may 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, airship, helicopter or powered-lift, a glider pilot licence, a free balloon pilot licence, a flight engineer licence or a flight navigator 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 — aeroplane, airship, helicopter or powered-lift, glider pilot licences, free balloon pilot licences, flight engineer licences or flight navigator 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 CAAB 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) an organic mental disorder;
- b) a mental or behavioural disorder due to psychoactive substance use; this includes dependence syndrome induced by alcohol or other psychoactive substances;
- c) schizophrenia or a schizotypal or delusional disorder;
- d) a mood (affective) disorder;
- e) a neurotic, stress-related or somatoform disorder;
- f) a behavioural syndrome associated with physiological disturbances or physical factors;
- g) a disorder of adult personality or behaviour, particularly if manifested by repeated overt acts;
- h) mental retardation;
- i) a disorder of psychological development;
- j) a behavioural or emotional disorder, with onset in childhood or adolescence; or
- k) a mental disorder not otherwise specified; such as might render the applicant unable to safely exercise the privileges of the licence applied for or held.

6.4.2.2.1 An applicant with depression, being treated with antidepressant medication, shall be assessed as unfit unless the medical assessor, having access to the details of the case concerned, considers the applicant's condition as unlikely to interfere with the safe exercise of the applicant's licence and rating privileges.

Note 1.— Guidance on assessment of applicants treated with antidepressant medication is contained in the Manual of Civil Aviation Medicine (Doc 8984).

Note 2.— Mental and behavioural disorders are defined in accordance with the clinical descriptions and diagnostic guidelines of the World Health Organization as given in the International Statistical Classification of Diseases and Related Health Problems, 10th Edition — Classification of Mental and Behavioural Disorders, WHO 1992. This document contains detailed descriptions of the diagnostic requirements, which may be useful for their application to medical assessment.

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 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 The applicant shall not have suffered any head injury, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges.

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.

6.4.2.5.1 An applicant who has undergone coronary bypass grafting or angioplasty (with or without stenting) or other cardiac intervention or who has a history of myocardial infarction or who suffers from any other potentially incapacitating cardiac condition shall be assessed as unfit unless the applicant's cardiac condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

6.4.2.5.2 An applicant with an abnormal cardiac rhythm shall be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

Note.— Guidance on cardiovascular evaluation is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.4.2.6 Electrocardiography shall form part of the heart examination for the first issue of a Medical Assessment after the age of 40.

6.4.2.6.1 Electrocardiography shall be included in re-examinations of applicants after the age of 50 no less than every two years.

6.4.2.6.2 Electrocardiography shall form part of the heart examination for the first issue of a Medical Assessment.

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 contained in the Manual of Civil Aviation Medicine (Doc 8984).

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

6.4.2.7.1 The use of drugs for control of high blood pressure shall be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges.

Note.— Guidance on the subject is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.4.2.8 There shall be no significant functional nor structural abnormality of the circulatory system.

6.4.2.9 There shall be no disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleura likely to result in incapacitating symptoms during normal or emergency operations.

6.4.2.9.1 Chest radiography shall form part of the initial and periodic examinations in cases where asymptomatic pulmonary disease can be expected.

6.4.2.10 Applicants with chronic obstructive pulmonary disease shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

6.4.2.11 Applicants with asthma causing significant symptoms or likely to cause incapacitating symptoms during normal or emergency operations shall be assessed as unfit.

6.4.2.11.1 The use of drugs for control of asthma shall be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges.

Note.— Guidance on hazards of medication and drugs is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.4.2.12 Applicants with active pulmonary tuberculosis shall be assessed as unfit.

6.4.2.12.1 Applicants with quiescent or healed lesions, known to be tuberculous or presumably tuberculous in origin, may be assessed as fit.

Note 1.— Guidance on assessment of respiratory diseases is contained in the Manual of Civil Aviation Medicine (Doc 8984).

Note 2.— Guidance on hazards of medication and drugs is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.4.2.13 Applicants shall be completely free from those hernias that might give rise to incapacitating symptoms.

6.4.2.13.1 Applicants with significant impairment of the function of the gastrointestinal tract or its adnexa shall be assessed as unfit.

6.4.2.14 Applicants with sequelae of disease of or surgical intervention on any part of the digestive tract or its adnexa, likely to cause incapacitation in flight, in particular any obstruction 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 adnexa with a total or partial excision or a diversion of any of these organs shall be assessed as unfit until such time as the medical assessor, having access to the details of the operation concerned, considers that the effects of the operation are not likely to cause incapacitation in flight.

6.4.2.15 Applicants with metabolic, nutritional or endocrine disorders that are likely to interfere with the safe exercise of their licence and rating privileges shall be assessed as unfit.

6.4.2.16 Applicants with insulin-treated diabetes mellitus shall be assessed as unfit.

Note.— Guidance on assessment of Type 2 insulin-treated diabetic applicants under the provisions of 1.2.4.10 is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.4.2.16.1 Applicants with non-insulin-treated diabetes mellitus shall be assessed as unfit unless the condition is shown to be satisfactorily controlled by diet alone or by diet combined with oral anti-diabetic medication, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges.

Note.— Guidance on assessment of diabetic applicants is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.4.2.17 Applicants with diseases of the blood and/or the lymphatic system shall be assessed as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

Note.— Sickle cell trait and other haemoglobinopathic traits are usually compatible with fit assessment.

6.4.2.18 Applicants with renal or genitourinary disease shall be assessed as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

6.4.2.18.1 Urine examination shall form part of the medical examination and abnormalities shall be adequately investigated.

Note.— Guidance on urine examination and evaluation of abnormalities is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.4.2.19 Applicants with sequelae of disease of, or surgical procedures on, the kidneys or the genitourinary tract, in particular obstructions due to stricture or compression, shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

6.4.2.19.1 Applicants who have undergone nephrectomy shall be assessed as unfit unless the condition is well compensated.

6.4.2.20 Applicants who are seropositive for HIV shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed as not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

Note 1.— Early diagnosis and active management of HIV disease with antiretroviral therapy reduces morbidity and improves prognosis and thus increases the likelihood of a fit assessment.

Note 2.— Guidance on the assessment of applicants who are seropositive for HIV is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.4.2.21 Applicants who are pregnant shall be assessed as unfit unless obstetrical evaluation and continued medical supervision indicate a low-risk uncomplicated pregnancy.

6.4.2.21.1 For applicants with a low-risk uncomplicated pregnancy, evaluated and supervised in accordance with 6.4.2.21, the fit assessment shall be limited to the period from the end of the 12th week until the end of the 26th week of gestation.

6.4.2.22 Following confinement or termination of pregnancy, the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-evaluation in accordance with best medical practice and it has been determined that she is able to safely exercise the privileges of her licence and ratings.

6.4.2.23 The applicant shall not possess any abnormality of the bones, joints, muscles, tendons or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

Note.— Any sequelae after lesions affecting the bones, joints, muscles or tendons, and certain anatomical defects will normally require functional assessment to determine fitness.

6.4.2.24 The applicant shall not possess any abnormality or disease of the ear or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

6.4.2.25 There shall be:

- a) no disturbance of the vestibular function;
- b) no significant dysfunction of the Eustachian tubes; and
- c) no unhealed perforation of the tympanic membranes.

6.4.2.25.1 A single dry perforation of the tympanic membrane need not render the applicant unfit.

Note.—Guidance on testing of the vestibular function is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.4.2.26 There shall be:

- a) no nasal obstruction; and
- b) no malformation nor any disease of the buccal cavity or upper respiratory tract

which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

6.4.2.27 Applicants with stuttering and other speech defects sufficiently severe to cause impairment of speech communication shall be assessed as unfit.

### 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 adnexa shall be normal. There shall be no active pathological condition, acute or chronic, nor any sequelae of surgery or trauma of the eyes or their adnexa likely to reduce proper visual function to an extent that would interfere with the safe exercise of the applicant's licence and rating privileges.

6.4.3.2 Distant visual acuity with or without correction shall be 6/12 or better in each eye separately, and binocular visual acuity shall be 6/9 or better. No limits apply to uncorrected visual acuity. 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 during the exercise of the privileges of the licence or rating applied for or held; and
- b) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's licence.

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 an ophthalmic report is required at the discretion CAAB. Both uncorrected and corrected visual acuity are normally measured and recorded at each re-examination. Conditions which indicate a need to obtain an ophthalmic report include: a substantial decrease in the uncorrected visual acuity, any decrease in best corrected visual acuity, and the occurrence of eye disease, eye injury or eye surgery.

6.4.3.2.1 Applicants may use contact lenses to meet this requirement provided that:

- a) the lenses are monofocal and non-tinted;
- b) the lenses are well tolerated; and
- c) a pair of suitable correcting spectacles is kept readily available during the exercise of the licence privileges.

Note.— Applicants who use contact lenses may not need to have their uncorrected visual acuity measured at each reexamination provided the history of their contact lens prescription is known.

6.4.3.2.2 Applicants with a large refractive error shall use contact lenses or high-index spectacle lenses.

Note.— If spectacles are used, high-index lenses are needed to minimize peripheral field distortion.

6.4.3.2.3 Applicants whose uncorrected distant visual acuity in either eye is worse than 6/60 shall be required to provide a full ophthalmic report prior to initial Medical Assessment and every five years thereafter.

Note 1.— The purpose of the required ophthalmic examination is (1) to ascertain normal visual performance, and (2) to identify any significant pathology.

Note 2.— Guidance on the assessment of monocular applicants under the provisions of 1.2.4.10 is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.4.3.3 Applicants who have undergone surgery affecting the refractive status of the eye shall be assessed as unfit unless they are free from those sequelae which are likely to interfere with the safe exercise of their licence and rating privileges.

6.4.3.4 The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by 6.4.3.2, 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 near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correction already prescribed in accordance with 6.4.3.2; if no such correction is prescribed, a pair of spectacles for near use shall be kept readily available during the exercise of the privileges of the licence. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

Note 1.— N5 refers to the size of typeface used. For further details, see the Manual of Civil Aviation Medicine (Doc 8984).

Note 2.— An applicant who needs near correction to meet the requirement will require “look-over”, bifocal or perhaps multifocal 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 for reading) significantly reduces distant visual acuity and is therefore not acceptable.

Note 3.— Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of the reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.

6.4.3.4.1 When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.

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

6.4.3.6 The applicant shall be required to have normal binocular function.

6.4.3.6.1 Reduced stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia need not be disqualifying.

#### 6.4.4 Hearing requirements

Note.— See 2.7.1.3.1 on requirements for the issue of instrument rating to applicants who hold a private pilot licence.

6.4.4.1 Applicants who are unable to hear an average conversational voice in a quiet room, using both ears, at a distance of 2 m from the examiner and with the back turned to the examiner, shall be assessed as unfit.

6.4.4.2 When tested by pure-tone audiometry, an applicant with 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, shall be assessed as unfit.

6.4.4.3 An applicant who does not meet the requirements in 6.4.4.1 or 6.4.4.2 shall undergo further testing in accordance with 6.3.4.1.1.

## **6.5 Class 3 Medical Assessment**

### 6.5.1 Assessment issue and renewal

6.5.1.1 Until 2 November 2022, an applicant for an air traffic controller licence shall undergo an initial medical examination for the issue of a Class 3 Medical Assessment.

6.5.1.1 As of 3 November 2022, an applicant for an air traffic controller licence or remote pilot licence shall undergo an initial medical examination for the issue of a Class 3 Medical Assessment.

6.5.1.2 Until 2 November 2022, 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.

6.5.1.2 As of 3 November 2022, except where otherwise stated in this section, holders of air traffic controller licences or remote pilot 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 CAAB is satisfied that the requirements of this section and the general

### 6.5.2 Physical and mental 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) an organic mental disorder;
- b) a mental or behavioural disorder due to psychoactive substance use; this includes dependence syndrome induced by alcohol or other psychoactive substances;
- c) schizophrenia or a schizotypal or delusional disorder;
- d) a mood (affective) disorder;
- e) a neurotic, stress-related or somatoform disorder;
- f) a behavioural syndrome associated with physiological disturbances or physical factors;
- g) a disorder of adult personality or behaviour, particularly if manifested by repeated overt acts;
- h) mental retardation;
- i) a disorder of psychological development;
- j) a behavioural or emotional disorder, with onset in childhood or adolescence; or

- k) a mental disorder not otherwise specified; such as might render the applicant unable to safely exercise the privileges of the licence applied for or held

6.5.2.2.1 An applicant with depression, being treated with antidepressant medication, shall be assessed as unfit unless the medical assessor, having access to the details of the case concerned, considers the applicant's condition as unlikely to interfere with the safe exercise of the applicant's licence and rating privileges.

Note 1.— Guidance on assessment of applicants treated with antidepressant medication is contained in the Manual of Civil Aviation Medicine (Doc 8984).

Note 2.— Mental and behavioural disorders are defined in accordance with the clinical descriptions and diagnostic guidelines of the World Health Organization as given in the International Statistical Classification of Diseases and Related Health Problems, 10th Edition — Classification of Mental and Behavioural Disorders, WHO 1992. This document contains detailed descriptions of the diagnostic requirements which may be useful for their application to medical assessment.

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 are likely to interfere with the safe exercise of the applicant's licence and rating privileges;
- b) epilepsy; or
- c) any disturbance of consciousness without satisfactory medical explanation of cause.

6.5.2.4 The applicant shall not have suffered any head injury, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges.

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 and rating privileges.

6.5.2.5.1 An applicant who has undergone coronary bypass grafting or angioplasty (with or without stenting) or other cardiac intervention or who has a history of myocardial infarction or who suffers from any other potentially incapacitating cardiac condition shall be assessed as unfit unless the applicant's cardiac condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence and rating privileges.

6.5.2.5.2 An applicant with an abnormal cardiac rhythm shall be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence and rating privileges.

Note.— Guidance on cardiovascular evaluation is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.5.2.6 Electrocardiography shall form part of the heart examination for the first issue of a Medical Assessment.

6.5.2.6.1 Electrocardiography shall be included in re-examinations of applicants after the age of 50 no less frequently than every two years.

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 contained in the Manual of Civil Aviation Medicine (Doc 8984).

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

6.5.2.7.1 The use of drugs for control of high blood pressure is disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant's licence privileges.

Note.— Guidance on this subject is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.5.2.8 There shall be no significant functional nor structural abnormality of the circulatory system.

6.5.2.9 There shall be no disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleurae likely to result in incapacitating symptoms.

Note.— Chest radiography is usually not necessary but may be indicated in cases where asymptomatic pulmonary disease can be expected.

6.5.2.10 Applicants with chronic obstructive pulmonary disease shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

6.5.2.11 Applicants with asthma causing significant symptoms or likely to cause incapacitating symptoms shall be assessed as unfit.

6.5.2.11.1 The use of drugs for control of asthma shall be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges.

Note.— Guidance on hazards of medications is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.5.2.12 Applicants with active pulmonary tuberculosis shall be assessed as unfit.

6.5.2.12.1 Applicants with quiescent or healed lesions, known to be tuberculous or presumably tuberculous in origin, may be assessed as fit.

Note 1.— Guidance on assessment of respiratory diseases is contained in the Manual of Civil Aviation Medicine (Doc 8984).

Note 2.— Guidance on hazards of medication and drugs is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.5.2.13 Applicants with significant impairment of the function of the gastrointestinal tract or its adnexae shall be assessed as unfit.

6.5.2.14 Applicants with sequelae of disease of or surgical intervention on any part of the digestive tract or its adnexa, likely to cause incapacitation, in particular any obstructions due to stricture or compression, shall be assessed as unfit.

6.5.2.14.1 An applicant who has undergone a major surgical operation on the biliary passages or the digestive tract or its adnexa, with a total or partial excision or a diversion of any of these organs shall be

assessed as unfit until such time as the medical assessor, having access to the details of the operation concerned, considers that the effects of the operation are not likely to cause incapacitation.

6.5.2.15 Applicants with metabolic, nutritional or endocrine disorders that are likely to interfere with the safe exercise of their licence and rating privileges shall be assessed as unfit.

6.5.2.16 Applicants with insulin-treated diabetes mellitus shall be assessed as unfit.

Note.— Guidance on assessment of Type 2 insulin-treated diabetic applicants under the provisions of 1.2.4.10 is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.5.2.16.1 Applicants with non-insulin-treated diabetes shall be assessed as unfit unless the condition is shown to be satisfactorily controlled by diet alone or by diet combined with oral anti-diabetic medication, the use of which is compatible with the safe exercise of the applicant's licence and rating privileges.

Note.— Guidance on assessment of diabetic applicants is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.5.2.17 Applicants with diseases of the blood and/or the lymphatic system shall be assessed as unfit, unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

6.5.2.18 Applicants with renal or genito-urinary disease shall be assessed as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

6.5.2.18.1 Urine examination shall form part of the medical examination and abnormalities shall be adequately investigated.

Note.— Guidance on urine examination and evaluation of abnormalities is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.5.2.19 Applicants with sequelae of disease of, or surgical procedures on the kidneys or the genito-urinary tract, in particular obstructions due to stricture or compression, shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

6.5.2.19.1 Applicants who have undergone nephrectomy shall be assessed as unfit unless the condition is well compensated.

6.5.2.20 Applicants who are seropositive for HIV shall be assessed as unfit unless the applicant's condition has been investigated and evaluated in accordance with best medical practice and is assessed as not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

Note 1.— Early diagnosis and active management of HIV disease with antiretroviral therapy reduces morbidity and improves prognosis and thus increases the likelihood of a fit assessment.

Note 2.— Guidance on the assessment of applicants who are seropositive for HIV is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.5.2.21 Applicants who are pregnant shall be assessed as unfit unless obstetrical evaluation and continued medical supervision indicate a low-risk uncomplicated pregnancy.

6.5.2.21.1 During the gestational period, precautions shall be taken for the timely relief of an air traffic controller in the event of early onset of labour or other complications.

6.5.2.21.2 For applicants with a low-risk uncomplicated pregnancy, evaluated and supervised in accordance with 6.5.2.21, the fit assessment shall be limited to the period until the end of the 34th week of gestation.

6.5.2.22 Following confinement or termination of pregnancy the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-evaluation in accordance with best medical practice and it has been determined that she is able to safely exercise the privileges of her licence and ratings.

6.5.2.23 The applicant shall not possess any abnormality of the bones, joints, muscles, tendons or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

Note.— Any sequelae after lesions affecting the bones, joints, muscles or tendons, and certain anatomical defects will normally require functional assessment to determine fitness.

6.5.2.24 The applicant shall not possess any abnormality or disease of the ear or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

6.5.2.25 There shall be no malformation nor any disease of the nose, buccal cavity or upper respiratory tract which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

6.5.2.26 Applicants with stuttering or other speech defects sufficiently severe to cause impairment of speech communication 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 adnexa shall be normal. There shall be no active pathological condition, acute or chronic, nor any sequelae of surgery or trauma of the eyes or their adnexa likely to reduce proper visual function to an extent that would interfere with the safe exercise of the applicant's licence and rating privileges.

6.5.3.2 Distant visual acuity with or without correction shall be 6/9 or better in each eye separately, and binocular visual acuity shall be 6/6 or better. No limits apply to uncorrected visual acuity. 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 during the exercise of the privileges of the licence or rating applied for or held; and
- b) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's licence.

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 an ophthalmic report is required at the discretion of

CAAB. Both uncorrected and corrected visual acuity are normally measured and recorded at each re-examination. Conditions which indicate a need to obtain an ophthalmic report include: a substantial decrease in the uncorrected visual acuity, any decrease in best corrected visual acuity, and the occurrence of eye disease, eye injury or eye surgery.

6.5.3.2.1 Applicants may use contact lenses to meet this requirement provided that:

- a) the lenses are monofocal and non-tinted;
- b) the lenses are well tolerated; and
- c) a pair of suitable correcting spectacles is kept readily available during the exercise of the licence privileges.

Note.— Applicants who use contact lenses may not need to have their uncorrected visual acuity measured at each re-examination provided the history of their contact lens prescription is known.

6.5.3.2.2 Applicants with a large refractive error shall use contact lenses or high-index spectacle lenses.

Note.— If spectacles are used, high-index lenses are needed to minimize peripheral field distortion.

6.5.3.2.3 Applicants whose uncorrected distant visual acuity in either eye is worse than 6/60 shall be required to provide a full ophthalmic report prior to initial Medical Assessment and every five years thereafter.

Note 1.— The purpose of the required ophthalmic examination is (1) to ascertain normal vision performance, and (2) to identify any significant pathology.

Note 2.— Guidance on the assessment of monocular applicants under the provisions of 1.2.4.10 is contained in the Manual of Civil Aviation Medicine (Doc 8984).

6.5.3.3 Applicants who have undergone surgery affecting the refractive status of the eye shall be assessed as unfit unless they are free from those sequelae which are likely to interfere with the safe exercise of their licence and rating privileges.

6.5.3.4 The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by 6.5.3.2, 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 near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correction already prescribed in accordance with 6.5.3.2; if no such correction is prescribed, a pair of spectacles for near use shall be kept readily available during the exercise of the privileges of the licence. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

Note 1.— N5 and N14 refer to the size of typeface used. For further details, see the Manual of Civil Aviation Medicine (Doc 8984).

Note 2.— Until 2 November 2022, an applicant who needs near correction to meet the requirement will require “look-over”, bifocal or perhaps multi-focal lenses in order to read radar screens, visual displays and written or printed material and also to make use of distant vision, through the windows, without removing the lenses. Single-vision near correction (full lenses of one power only, appropriate for reading) may be acceptable for certain air traffic control duties. However, it should be realized that single-vision near correction significantly reduces distant visual acuity.

Note 2.— As of 3 November 2022, an applicant who needs near correction to meet the requirement will require “look-over”, bifocal or perhaps multi-focal lenses in order to read radar

screens, visual displays and written or printed material and also to make use of distant vision, through the windows, without removing the lenses. Single-vision near correction (full lenses of one power only, appropriate for reading) may be acceptable for certain air traffic control or remote pilot duties. However, it should be realized that single-vision near correction significantly reduces distant visual acuity.

Note 3.— Until 2 November 2022, 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 control duties the applicant is likely to perform.

Note 3.— As of 3 November 2022, 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 control or remote pilot duties the applicant is likely to perform.

6.5.3.4.1 When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.

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

6.5.3.6 The applicant shall be required to have normal binocular function.

6.5.3.6.1 Reduced stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia need not be disqualifying.

6.5.4 Hearing requirements

6.5.4.1 The applicant, when tested on a pure-tone audiometer 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.

6.5.4.1.1 Until 2 November 2022, an applicant with a hearing loss greater than the above may be declared fit provided that the applicant has normal hearing performance against a background noise that reproduces or simulates that experienced in a typical air traffic control working environment.

Note 1.— The frequency composition of the background noise is defined only to the extent that the frequency range 600 to 4800 Hz (speech frequency range) is adequately represented.

Note 2.— In the speech material for discrimination testing, both aviation-relevant phrases and phonetically balanced words are normally used.

6.5.4.1.1 As of 3 November 2022, an applicant with a hearing loss greater than the above may be declared fit provided that the applicant has normal hearing performance against a background noise that reproduces or simulates that experienced in a typical air traffic control or remote pilot working environment.

Note 1.— The frequency composition of the background noise is defined only to the extent that the frequency range 600 to 4800 Hz (speech frequency range) is adequately represented.

Note 2.— In the speech material for discrimination testing, both aviation-relevant phrases and phonetically balanced words are normally used.

6.5.4.1.2 Alternatively, a practical hearing test conducted in an air traffic control environment representative of the one for which the applicant's licence and ratings are valid may be used.

## **APPENDIX 1. REQUIREMENTS FOR PROFICIENCY IN LANGUAGES USED FOR RADIOTELEPHONY COMMUNICATIONS**

(Chapter 1, Section 1.2.9, refers)

### **1. General**

Note.— The ICAO language proficiency requirements include the holistic descriptors at Section 2 and the ICAO Operational Level (Level 4) of the ICAO Language Proficiency Rating Scale in Attachment A of Annex 1. The language proficiency requirements are applicable to the use of both phraseologies and plain language.

To meet the language proficiency requirements contained in Chapter 1, Section 1.2.9, an applicant for a licence or a licence holder shall demonstrate, in a manner acceptable to CAAB, compliance with the holistic descriptors at Section 2 and with the ICAO Operational Level (Level 4) of the ICAO Language Proficiency Rating Scale in Attachment A of Annex 1

### **2. Holistic descriptors**

Proficient speakers shall:

- a) communicate effectively in voice-only (telephone/radiotelephone) and in face-to-face situations;
- b) communicate on common, concrete and work-related topics with accuracy and clarity;
- c) use appropriate communicative strategies to exchange messages and to recognize and resolve misunderstandings (e.g. to check, confirm or clarify information) in a general or work-related context;
- d) handle successfully and with relative ease the linguistic challenges presented by a complication or unexpected turn of events that occurs within the context of a routine work situation or communicative task with which they are otherwise familiar; and
- e) use a dialect or accent which is intelligible to the aeronautical community

## **APPENDIX 2. APPROVED TRAINING ORGANIZATION**

(Chapter 1, 1.2.8.2 refers)

Note.— ANO 19 includes safety management provisions for an approved training organization that is exposed to safety risks related to aircraft operations during the provision of its services. Further guidance is contained in the Safety Management Manual (SMM) (Doc 9859).

### **1. Issue of approval**

1.1 The issuance of an approval for a training organization and the continued validity of the approval shall depend upon the training organization being in compliance with the requirements of this Appendix.

1.2 The approval document shall contain at least the following:

- a) organization's name and location;
- b) date of issue and period of validity (where appropriate);
- c) terms of approval.

### **2. Training and procedures manual**

2.1 The training organization shall provide a training and procedures manual for the use and guidance of personnel concerned. This manual may be issued in separate parts and shall contain at least the following information:

- a) a general description of the scope of training authorized under the organization's terms of approval;
- b) the content of the training programmes offered including the courseware and equipment to be used;
- c) a description of the organization's quality assurance system in accordance with 4;
- d) a description of the organization's facilities;
- e) the name, duties and qualification of the person designated as responsible for compliance with the requirements of the approval in 6.1;
- f) a description of the duties and qualification of the personnel designated as responsible for planning, performing and supervising the training in 6.2;
- g) a description of the procedures used to establish and maintain the competence of instructional personnel as required by 6.3;
- h) a description of the method used for the completion and retention of the training records required by 7;

- i) a description, when applicable, of additional training needed to comply with an operator's procedures and requirements; and
- j) when CAAB has authorized an approved training organization to conduct the testing required for the issuance of a licence or rating in accordance with 9, a description of the selection, role and duties of the authorized personnel, as well as the applicable requirements established by CAAB.

2.2 The training organization shall ensure that the training and procedures manual is amended as necessary to keep the information contained therein up to date.

2.3 Copies of all amendments to the training and procedures manual shall be furnished promptly to all organizations or persons to whom the manual has been issued.

### **3. Training programmes**

3.1 CAAB may approve a training programme for a private pilot licence, commercial pilot licence, an instrument rating or an aircraft maintenance engineer licence that allows an alternative means of compliance with the experience requirements established by ANO 1, provided that the approved training organization demonstrates to the satisfaction of CAAB that the training provides a level of competency at least equivalent to that provided by the minimum experience requirements for personnel not receiving such approved training.

Note 1.— Procedures supporting the development of competency-based training and assessment for aeroplane pilots and aircraft maintenance personnel, including ICAO competency frameworks, are contained in the Procedures for Air Navigation Services — Training (Doc 9868, PANS-TRG).

Note 2.— The Manual on Training of Aircraft Maintenance Personnel (Doc 10098) contains guidance material on the design and development of an aircraft maintenance personnel training programme.

3.2 When CAAB approves a training programme for a multi-crew pilot licence, the approved training organization shall demonstrate to the satisfaction of CAAB that the training provides a level of competency in multi-crew operations at least equal to that met by holders of a commercial pilot licence, instrument rating and type rating for an aeroplane certificated for operation with a minimum crew of at least two pilots.

Note.— Guidance on the approval of training programmes can be found in the Manual on the Approval of Training Organizations (Doc 9841).

### **4. Quality assurance system**

The training organization shall establish a quality assurance system, acceptable to the CAAB granting the approval, which ensures that training and instructional practices comply with all relevant requirements.

### **5. Facilities**

5.1 The facilities and working environment shall be appropriate for the task to be performed and be acceptable to CAAB.

5.2 The training organization shall have, or have access to, the necessary information, equipment, training devices and material to conduct the courses for which it is approved.

5.3 Synthetic training devices shall be qualified according to requirements established by the State and their use shall be approved by the CAAB to ensure that they are appropriate to the task.

Note.— The Manual of Criteria for the Qualification of Flight Simulation Training Devices (Doc 9625) provides guidance on the approval of FSTDs.

## **6. Personnel**

6.1 The training organization shall nominate a person responsible for ensuring that it is in compliance with the requirements for an approved organization.

6.2 The organization shall employ the necessary personnel to plan, perform and supervise the training to be conducted.

6.3 The competence of instructional personnel shall be in accordance with procedures and to a level acceptable to CAAB.

6.4 The training organization shall ensure that all instructional personnel receive initial and continuation training appropriate to their assigned tasks and responsibilities. The training programme established by the training organization shall include training in knowledge and skills related to human performance.

Note.— Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the Human Factors Training Manual (Doc 9683).

## **7. Records**

7.1 The training organization shall retain detailed student records to show that all requirements of the training course have been met as agreed by CAAB.

7.2 The training organization shall maintain a system for recording the qualifications and training of instructional and examining staff, where appropriate.

7.3 The records required by 7.1 shall be kept for a minimum period of two years after completion of the training. The records required by 7.2 shall be retained for a minimum period of two years after the instructor or examiner ceases to perform a function for the training organization.

## **8. Oversight**

CAAB shall maintain an effective oversight programme of the approved training organization to ensure continuing compliance with the approval requirements.

## **9. Evaluation and checking**

When CAAB has authorized an approved training organization to conduct the testing required for the issuance of a licence or rating, the testing shall be conducted by personnel authorized by CAAB or designated by the training organization in accordance with criteria approved by CAAB.

## **APPENDIX 3. REQUIREMENTS FOR THE ISSUE OF THE MULTI-CREW PILOT LICENCE — AEROPLANE (Chapter 2, Section 2.5, refers)**

### **1. Training**

1.1 In order to meet the requirements of the multi-crew pilot licence in the aeroplane category, the applicant shall complete an approved training course. The training shall be competency-based and conducted in a multi-crew operational environment.

1.2 During the training, the applicant shall acquire the knowledge, skills and attitudes underpinning the competencies required for performing as a co-pilot of a turbine-powered air transport aeroplane certificated for operation with a minimum crew of at least two pilots, under VFR and IFR, day and night flying.

### **2. Assessment level**

The applicant for the multi-crew pilot licence in the aeroplane category shall have achieved the final competency standard of the approved adapted competency model.

Note.— The training scheme for the multi-crew pilot licence in the aeroplane category, the ICAO aeroplane pilot competency framework and the methodology to adapt this framework for the multi-crew pilot licence are contained in the Procedures for Air Navigation Services —Training (PANS-TRG, Doc 9868).

### **3. Simulated flight**

Note.— The Manual of Criteria for the Qualification of Flight Simulation Training Devices (Doc 9625), Volume I — Aeroplanes, provides guidance on the qualification of flight simulation training devices used in training programmes. Types I to VII described in Doc 9625 are used below.

3.1 The FSTDs used to gain the experience specified in Chapter 2, 2.5.3.3, shall have been approved by CAAB.

3.2 FSTDs suitable for each multi-crew pilot licence training phase shall be categorized as follows:

Note 1.— The training scheme for the multi-crew pilot licence describes four phases for the training (core flying skills, basic, intermediate and advanced) and is contained in the Procedures for Air Navigation Services —Training (PANS-TRG, Doc 9868).

Note 2.— The European Aviation Safety Agency (EASA) device levels and the United States Federal Aviation Administration (FAA) device levels specified below are considered based on the closest qualified device that provides the required level of fidelity to support the training phase. It is not the intent here to establish any equivalency between the various ICAO, FAA and EASA devices. Furthermore, in each phase a mix of devices that meet the minimum fidelity level may be used.

Note 3.— In each of the four phases, other devices which meet the fidelity requirements may also be used to meet the training requirement.

- a) Core flying skills phase. E-training and part tasking devices approved by CAAB that have the following characteristics:

- involve accessories beyond those normally associated with desktop computers, such as functional replicas of a throttle quadrant, a sidestick controller, or an FMS keypad; and
- involve psychomotor activity with appropriate application of force and timing of responses; and
- otherwise meet, at a minimum, the following qualification:

- Type I or Type III of Doc 9625

Note 1.— Type II of Doc 9625 may be used for certain basic instrument flight training tasks.

Note 2.— The EASA flight and navigation procedures trainer I (FNPT I) and the FAA flight training device FTD Level 4 meet the minimum qualifications of a Type I, II and III device.

- b) Basic phase. A flight simulation training device that represents a generic turbine-powered aeroplane and has the following characteristics:

- is equipped with a daylight visual system; and
- otherwise meets, at a minimum, the following qualification:

- Type IV or Type V of Doc 9625

Note.— The EASA flight and navigation procedures trainer II-multi-crew cooperation (FNPT II-MCC) and the FAA flight training device FTD Level 5 meet the minimum qualifications of a Type IV device.

- c) Intermediate phase. A flight simulation training device that represents a multi-engined turbine-powered aeroplane certificated for a crew of two pilots and has the following characteristics:

- is equipped with an enhanced daylight visual system;
- is equipped with an autopilot; and
- otherwise meets, at a minimum, the following qualification:

- Type VI of Doc 9625

Note 1.— The EASA full flight simulator FFS Level B and the FAA full flight simulator FFS Level B meet the minimum qualifications of a Type VI device.

Note 2.— During the intermediate phase, some or all training tasks could be conducted in a device used in the advanced phase, if suitable for the training task. Guidance to assess the suitability of the device for a training task is contained in Doc 9625, Part I, Appendix C.

- d) Advanced phase. A flight simulation training device that represents a multi-engined turbine-powered aeroplane certificated for a crew of two pilots and has the following characteristics:

- is equipped with an enhanced daylight visual system;
- is equipped with an autopilot; and

— otherwise meets, at a minimum, the following qualification:

- Type VII of Doc 9625

Note 1.— The EASA full flight simulator FFS Level C or D and the FAA full flight simulator FFS Level C or D meet the minimum qualifications of a Type VII device.

Note 2.— During the advanced phase, some training tasks could be conducted in a device used in the intermediate phase, if this device represents the aeroplane used in the advanced phase and is suitable for the training task. Guidance to assess the suitability of the device for a training task is contained in Doc 9625, Part I, Appendix C.

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