

**SINGAPORE AIR SAFETY PUBLICATION  
PART 9**

**MEDICAL REQUIREMENTS  
FOR THE GRANT OR RENEWAL OF  
FLIGHT CREW LICENCES  
AND  
AIR TRAFFIC CONTROLLER LICENCE**

**Issue 0**

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## FOREWORD

This Singapore Air Safety Publication (SASP) contains the medical requirements referred to in the Fourteenth Schedule of the Singapore Air Navigation Order (ANO) for the grant and renewal of flight crew licences and air traffic controller licences under paragraph 20 and paragraph 62A respectively of the ANO. Any person applying for or holding a licence granted or renewed under the ANO shall comply with these requirements as amended from time to time.

2 Failure to comply with any of these requirements may result in suspension or the revocation of the licence or the penalties as provided for under the Thirteenth Schedule of the ANO.

3 Amendments to the SASP, may be notified through Aeronautical Information Circulars (AIC) and shall take effect from the date stipulated in the AICs.

4 Queries on medical requirements contained in this publication should be referred to:

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Civil Aviation Authority of Singapore  
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Singapore 539945  
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## CHAPTER 1 MEDICAL EXAMINATIONS AND REQUIREMENTS

### 1 CLASSES OF MEDICAL REQUIREMENTS

1 Under the Fourteenth Schedule of the ANO, the medical examination and medical fitness requirements applicable to the various classes of licence granted or renewed under paragraph 20 (1) (a) to (m) and paragraph 62A of the ANO are as follows:

a) Class 1 Medical Requirements —

- (i) Commercial Pilot's Licence (Aeroplanes);
- (ii) Commercial Pilot's Licence (Helicopters and Gyroplanes);
- (iii) Airline Transport Pilot's Licence (Aeroplanes);
- (iv) Airline Transport Pilot's Licence (Helicopters and Gyroplanes);
- (v) Commercial Pilot's Licence (Airships).

b) Class 2 Medical Requirements —

- (i) Student Pilot's Licence;
- (ii) Private Pilot's Licence (Aeroplanes);
- (iii) Private Pilot's Licence (Helicopters and Gyroplanes);
- (iv) Private Pilot's Licence (Balloons and Airships);
- (v) Commercial Pilot's Licence (Balloons);
- (vi) - *deleted* -
- (vii) Commercial Pilot's Licence (Gliders);
- (viii) Flight Navigator's Licence;
- (ix) Flight Engineer's Licence.

c) Class 3 Medical Requirements —

Air Traffic Controller Licence.

2 An applicant for or a holder of a Private Pilot's Licence (Aeroplanes) or a Private Pilot's Licence (Helicopters) who also applies for or has been granted an Instrument Rating (Aeroplanes) or Instrument Rating (Helicopters), as the case may be, shall also satisfy Class 1 Medical Requirements.

3 All applicants for or holders of a licence must undergo a medical examination based on the following requirements:

a) physical and mental;

- b) visual and colour perception; and
- c) hearing.

4 All applicants for a medical examination shall be required to be free from:

- a) any abnormality, congenital or acquired;
- b) any active, latent, acute or chronic disability;
- 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.

5 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.

6 All initial medical examinations are only conducted at the Civil Aviation Medical Board (CAMB). Thereafter, applicants may choose to have their re-examination conducted by any Designated Medical Examiner (see Chapter 2), except the fourth and every subsequent fourth re-examination which must be done at the CAMB.

7 The frequency of medical re-examinations for a holder of the flight crew licence can be found in the Eighth Schedule of the ANO. For a holder of an air traffic controller licence, the frequency of medical re-examination can be found in paragraph 62C of the ANO.

8 According to Paragraph 20(7) of the ANO, the holder of a flight crew licence is required to inform CAAS and the Civil Aviation Medical Board (CAMB) in writing, as soon as practicable, if he/she:

- a) suffers any personal injury involving incapacity to undertake the functions to which his licence relates;
- b) suffers any illness involving incapacity to undertake those functions throughout a period of more than 20 days;
- c) knows or has reason to believe that she is pregnant;
- d) requires continued treatment with prescribed medication; or
- e) has received medical treatment requiring hospitalisation.

The licence holder shall not exercise the privileges of his/her licence and related ratings until he/she has received from CAAS or CAMB in writing that he/she has been medically cleared to do so.

## **CHAPTER 2 DESIGNATED MEDICAL EXAMINER**

### **1 INTRODUCTION**

- 1.1 Under the Fourteenth Schedule of the ANO, all medical examinations must be conducted by a designated medical examiner (DME).
- 1.2 A “designated medical examiner” (DME) is a doctor who is approved by CAAS to conduct medical examinations to qualify applicants for or holders for the grant or renewal of a flight crew licence or an air traffic controller licence.
- 1.3 The list of DMEs is published in the Aeronautical Information Circular which is available on the CAAS website at [www.caas.gov.sg](http://www.caas.gov.sg).
- 1.4 Applicants interested to be appointed as a DME by CAAS should write to the Chairman, CAMB, together with a copy of his/her CV. The address of CAMB can be found at the Foreword of this SASP.

### **2 APPOINTMENT OF DMEs IN SINGAPORE**

- 2.1 Criteria for appointment/re-appointment as a DME are as follows:
  - a) Be qualified and licensed to practise medicine in Singapore;
  - b) Have received training in the practice of aviation medicine and demonstrated adequate competency in aviation medicine;
  - c) Have attended refresher training in aviation medicine at least once every 2 years;
  - d) Possesses practical knowledge and experience of the conditions in which the holder of a licence carries out the functions to which his licence relates; and
  - e) Have conducted at least one medical on flight crew/ATCOs for the preceding year.

Note.— Examples of practical knowledge and experience are flight experience, simulator experience, on-site observation.

- 2.2 The appointment is on two-year basis, at the end of which DMEs must apply to CAAS for reappointment. Re-appointment would be reviewed and processed by CAAS, in consultation with CAMB.
- 2.3 DMEs who are re-appointed will receive a letter of appointment from CAAS. The full list of DMEs is also published in the Aeronautical Information Circular (AIC) on the CAAS website at [www.caas.gov.sg](http://www.caas.gov.sg).

### **3 APPOINTMENT OF OVERSEAS DMEs**

- 3.1 The appointment of overseas DMEs is based on request from Singapore air operators. As such, any application by an overseas doctor to be a Singapore DME will only be considered if it is supported by a Singapore air operator. All costs incurred by CAAS or CAMB in relation to the appointment of the overseas DME (e.g. visit to overseas clinic) shall also be borne by the Singapore air operator.

- 3.2 The criteria to be met for appointment/re-appointment of overseas DMEs outside Singapore are similar to those spelt out in paragraph 2 above but with the following additional requirements:
- a) the overseas doctor shall be appointed as a DME by the civil aviation authority in the country where he/she is practising; and
  - b) he/she shall submit to CAAS a copy of the Certificate of Good Standing issued by the medical licensing authority in the country where he/she is practising.
- 3.3 Once appointed, the overseas DME can perform medical examinations of Singapore pilot licence holders, regardless of the Singapore air operator initiating the appointment.

#### **4 RESPONSIBILITIES OF DMEs**

- 4.1 The responsibilities of the DMEs are as follows:
- (a) to conduct medical examinations (according to the prescribed format) for flight crew and ATCOs;
  - (b) to carry out any investigation required for the medical examination and those specified by the CAMB on individual applicants;
  - (c) to refer for specialist examination any flight crew/ATCO who in the opinion of the DME, requires further specialists opinion;
  - (d) to coordinate the results of the examination and assess whether the applicant satisfies the standard of medical fitness required for the licence for which he has applied for; and
  - (e) to complete all sections of the medical form, collate all special reports and investigation results/reports and forward all of these to the CAMB.
- 4.2 The DME shall submit a signed report, detailing the results of the examination and evaluating the findings with regard to medical fitness, to the CAMB for final evaluation and clearance.
- 4.3 Medical confidentiality shall be respected at all times. All medical reports and records shall be securely held with accessibility restricted to authorised personnel.
- 4.4 In cases where the applicant does not fully meet the medical requirements and in complicated and unusual cases, the evaluation shall be deferred and the case submitted to the CAMB for assessment, evaluation and clearance.

#### **5 MEDICAL STANDARDS**

- 5.1 All applicants must be examined in accordance with this SASP, as amended. The latest version of this SASP can be downloaded from the CAAS website at [www.caas.gov.sg](http://www.caas.gov.sg).

#### **6 MEDICAL EXAMINATION FEES**

- 6.1 The fees to be charged by the DME for all Student Pilots, Private Pilots and Professional Pilots, i.e. Commercial and Airline Transport Pilots may follow guidelines set by the Singapore Medical Council (SMC) or as determined by the DME performing the medical examination.

## **7 CHANGE OF ADDRESS**

7.1 CAAS and CAMB should be notified of any change of address or telephone numbers of the DME.

## **8 KEEPING ABREAST**

8.1 The DME is required to have and be familiar with the medical requirements stipulated in the ANO, this SASP and the International Civil Aviation Organisation (ICAO) Manual on Civil Aviation (latest edition). The DME is also encouraged to keep himself abreast with aviation medicine by:

- (i) reading relevant journals e.g. "Aviation Space and the Environmental Medicine". "ICAO Bulletin" etc and;
- (ii) attending seminars/congress/scientific meetings on aviation medicine whenever possible.

## **9 DMEs AND THE CAMB**

9.1 DMEs are encouraged to maintain close links with members of the CAMB. They should clarify any problems that they may have pertaining to the conduct of medical examinations with the office of the CAMB.

## CHAPTER 3 CLASS 1 MEDICAL REQUIREMENTS

### 1 PHYSICAL AND MENTAL REQUIREMENTS

- 1.1 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.
- 1.2 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.
- 1.3 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.
- 1.4 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.
- 1.5 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.

- 1.5.1 An applicant who has undergone coronary by-pass 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.
- 1.5.2 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.
- 1.6 Electrocardiography shall form part of the heart examination for the first medical examination.
- 1.6.1 Electrocardiography shall be included in re-examinations of applicants over the age of 50 no less frequently than annually.
- 1.6.2 Electrocardiography shall be included in re-examinations of applicants between the ages of 30 and 50 no less frequently than every 2 years.
- Note.— The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify disqualification without further thorough cardiovascular investigation.
- 1.7 The systolic and diastolic blood pressures shall be within normal limits.
- 1.7.1 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.
- 1.8 There shall be no significant functional nor structural abnormality of the circulatory system.
- 1.9 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.
- 1.9.1 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.
- 1.10 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.
- 1.11 Applicants with asthma causing significant symptoms or likely to cause incapacitating symptoms during normal or emergency operations shall be assessed as unfit.
- 1.11.1 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.
- 1.12 Applicants with active pulmonary tuberculosis shall be assessed as unfit.
- 1.12.1 Applicants with quiescent or healed lesions which are known to be tuberculous, or are presumably tuberculous in origin, may be assessed as fit.
- 1.13 Applicants with significant impairment of function of the gastrointestinal tract or its adnexa shall be assessed as unfit.

- 1.13.1 Applicants shall be completely free from those hernias that might give rise to incapacitating symptoms.
- 1.14 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.
- 1.14.1 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.
- 1.15 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.
- 1.16 Applicants with insulin-treated diabetes mellitus shall be assessed as unfit.
- 1.16.1 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.
- 1.17 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.
- 1.18 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.
- 1.18.1 Urine examination shall form part of the medical examination and abnormalities shall be adequately investigated.
- 1.19 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.
- 1.19.1 Applicants who have undergone nephrectomy shall be assessed as unfit unless the condition is well compensated.
- 1.20 Applicants with acquired immunodeficiency syndrome (AIDS) shall be assessed as unfit.
- 1.20.1 Applicants who are seropositive for human immunodeficiency virus (HIV) shall be assessed as unfit unless full investigation provides no evidence of clinical disease.

Note.— Evaluation of applicants who are seropositive for human immunodeficiency virus (HIV) requires particular attention to their mental state, including the psychological effects of the diagnosis.

- 1.21 Applicants with gynaecological disorders that are likely to interfere with the safe exercise of their licence and rating privileges shall be assessed as unfit.
- 1.22 Applicants who are pregnant shall be assessed as unfit unless obstetrical evaluation and continued medical supervision indicate a low-risk uncomplicated pregnancy.
- 1.22.1 For applicants with a low-risk uncomplicated pregnancy, evaluated and supervised in accordance with paragraph 1.22, 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.
- 1.23 Following confinement or termination of pregnancy, the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-evaluation in accordance with best medical practice and it has been determined that she is able to safely to exercise the privileges of her licence and ratings.
- 1.24 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.
- 1.25 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.
- 1.26 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.
- 1.26.1 A single dry perforation of the tympanic membrane need not render the applicant unfit.
- 1.27 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.
- 1.28 Applicants with stuttering or other speech defects sufficiently severe to cause impairment of speech communication shall be assessed as unfit.

## **2 VISUAL ACUITY TEST REQUIREMENTS**

- 2.1 Each eye of the applicant will be tested separately. The methods of testing visual acuity shall be as follows:
- (a) visual acuity tests shall be conducted in an environment with a level of illumination which 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, as appropriate to the method of testing adopted.

2.2 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.

2.3 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 the Civil Aviation Medical Board. 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.

2.3.1 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.

2.3.2 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.

2.3.3 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 Examination and every five years thereafter.

Note.— The purpose of the required ophthalmic examination is (1) to ascertain normal visual performance, and (2) to identify any significant pathology.

2.4 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.

- 2.5 The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by paragraph 2.2, 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 paragraph 2.2; 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.

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.

- 2.5.1 When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.
- 2.6 The applicant shall be required to have normal fields of vision.
- 2.7 The applicant shall be required to have normal binocular function.
- 2.7.1 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.

### **3 COLOUR PERCEPTION REQUIREMENTS**

- 3.1 The applicant shall be required to demonstrate the ability to perceive readily those colours the perception of which is necessary for the safe performance of duties.
- 3.2 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).
- 3.3 An applicant obtaining a satisfactory result as prescribed by the evaluating medical examiner 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.
- 3.3.1 Sunglasses worn during the exercise of the privileges of the licence or rating held shall be non-polarizing and of a neutral grey tint.

## **4 HEARING TEST REQUIREMENTS**

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

4.2 The applicant shall be tested by pure-tone audiometry at first issue of the licence, not less than once every five years up to the age of 40 years, and thereafter not less than once every two years.

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

4.3 At medical examinations, other than those mentioned in paragraph 4.2, where audiometry is not performed, applicants shall be tested in a quiet room by whispered and spoken voice tests.

Note 1.— 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 2.— 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.

4.4 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.

4.4.1 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.

4.4.2 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.

## CHAPTER 4 CLASS 2 MEDICAL REQUIREMENTS

### 1 Physical and mental requirements

1.1 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.

1.2 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.

1.3 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.

1.4 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.

1.5 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.

- 1.5.1 An applicant who has undergone coronary by-pass 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.
- 1.5.2 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.
- 1.6 Electrocardiography shall form part of the heart examination for the first medical examination.
- 1.6.1 Electrocardiography shall be included in re-examinations of applicants after the age of 50 no less frequently than every two years.
- Note.— The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify disqualification without further thorough cardiovascular investigation.
- 1.7 The systolic and diastolic blood pressures shall be within normal limits.
- 1.7.1 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.
- 1.8 There shall be no significant functional nor structural abnormality of the circulatory system.
- 1.9 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.
- 1.9.1 Chest radiography shall form part of the initial and periodic examinations in cases where asymptomatic pulmonary disease can be expected.
- 1.10 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.
- 1.11 Applicants with asthma causing significant symptoms or likely to cause incapacitating symptoms during normal or emergency operations shall be assessed as unfit.
- 1.11.1 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.
- 1.12 Applicants with active pulmonary tuberculosis shall be assessed as unfit.
- 1.12.1 Applicants with quiescent or healed lesions, known to be tuberculous or presumably tuberculous in origin, may be assessed as fit.
- 1.13 Applicants shall be completely free from those hernias that might give rise to incapacitating symptoms.
- 1.13.1 Applicants with significant impairment of the function of the gastrointestinal tract or its adnexa shall be assessed as unfit.

- 1.14 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.
- 1.14.1 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.
- 1.15 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.
- 1.16 Applicants with insulin-treated diabetes mellitus shall be assessed as unfit.
- 1.16.1 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.
- 1.17 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.
- 1.18 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.
- 1.18.1 Urine examination shall form part of the medical examination and abnormalities shall be adequately investigated.
- 1.19 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.
- 1.19.1 Applicants who have undergone nephrectomy shall be assessed as unfit unless the condition is well compensated.
- 1.20 Applicants with acquired immunodeficiency syndrome (AIDS) shall be assessed as unfit.
- 1.20.1 Applicants who are seropositive for human immunodeficiency virus (HIV) shall be assessed as unfit unless full investigation provides no evidence of clinical disease.
- Note.— Evaluation of applicants who are seropositive for human immunodeficiency virus (HIV) requires particular attention to their mental state, including the psychological effects of the diagnosis.
- 1.21 Applicants with gynaecological disorders that are likely to interfere with the safe exercise of their licence and rating privileges shall be assessed as unfit.
- 1.22 Applicants who are pregnant shall be assessed as unfit unless obstetrical evaluation and continued medical supervision indicate a low-risk uncomplicated pregnancy.

1.22.1 For applicants with a low-risk uncomplicated pregnancy, evaluated and supervised in accordance with 1.22, 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.

1.23 Following confinement or termination of pregnancy, the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-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.

1.24 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.

1.25 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.

1.26 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.

1.26.1 A single dry perforation of the tympanic membrane need not render the applicant unfit.

1.27 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.

1.28 Applicants with stuttering and other speech defects sufficiently severe to cause impairment of speech communication shall be assessed as unfit.

## **2 VISUAL REQUIREMENTS**

2.1 Each eye of the applicant will be tested separately. The methods of testing visual acuity shall be as follows:

- (a) visual acuity tests shall be conducted in an environment with a level of illumination which 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, as appropriate to the method of testing adopted.

2.2 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.

2.3 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 of the Licensing Authority. 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.

2.3.1 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.

2.3.2 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.

2.3.3 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 Examination and every five years thereafter.

Note.— The purpose of the required ophthalmic examination is (1) to ascertain normal visual performance, and (2) to identify any significant pathology.

2.4 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.

- 2.5 The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by 2.2, 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 paragraph 2.2; 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.

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.

- 2.5.1 When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.
- 2.6 The applicant shall be required to have normal fields of vision.
- 2.7 The applicant shall be required to have normal binocular function.
- 2.7.1 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.

### **3 COLOUR PERCEPTION REQUIREMENTS**

- 3.1 The applicant shall be required to demonstrate the ability to perceive readily those colours the perception of which is necessary for the safe performance of duties.
- 3.2 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).
- 3.3 An applicant obtaining a satisfactory result as prescribed by the evaluating medical examiner 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 with the following restriction – valid daytime only.
- 3.3.1 Sunglasses worn during the exercise of the privileges of the licence or rating held shall be non-polarizing and of a neutral grey tint.

## **4 HEARING REQUIREMENTS**

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

4.2 Applicants shall be tested by pure-tone audiometry at first issue of the licence and, after the age of 50 years, not less than once every two years.

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

4.3 At medical examinations, other than those mentioned in paragraph 4.2, where audiometry is not performed, applicants shall be tested in a quiet room by whispered and spoken voice tests.

Note 1.— 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 2.— 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.

4.4 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.

4.5 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.

4.6 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.

## **CHAPTER 5 CLASS 3 MEDICAL REQUIREMENTS**

### **1 PHYSICAL AND MENTAL REQUIREMENTS**

- 1.1 The applicant shall not suffer from any disease or disability which could render that applicant likely to become suddenly unable to perform duties safely.
- 1.2 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.
- 1.3 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.
- 1.4 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.
- 1.5 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.

- 1.5.1 An applicant who has undergone coronary by-pass 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.
- 1.5.2 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.
- 1.6 Electrocardiography shall form part of the heart examination for the first medical examination.
- 1.6.1 Electrocardiography shall be included in re-examinations of applicants after the age of 50 no less frequently than every two years.
- 1.7 The systolic and diastolic blood pressures shall be within normal limits.
- 1.7.1 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.
- 1.8 There shall be no significant functional nor structural abnormality of the circulatory system.
- 1.9 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.
- 1.10 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.
- 1.11 Applicants with asthma causing significant symptoms or likely to cause incapacitating symptoms shall be assessed as unfit.
- 1.11.1 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.
- 1.12 Applicants with active pulmonary tuberculosis shall be assessed as unfit.
- 1.12.1 Applicants with quiescent or healed lesions, known to be tuberculous or presumably tuberculous in origin, may be assessed as fit.
- 1.13 Applicants with significant impairment of the function of the gastrointestinal tract or its adnexae shall be assessed as unfit.
- 1.14 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.

- 1.14.1 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.
- 1.15 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.
- 1.16 Applicants with insulin-treated diabetes mellitus shall be assessed as unfit.
- 1.16.1 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.
- 1.17 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.
- 1.18 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.
- 1.18.1 Urine examination shall form part of the medical examination and abnormalities shall be adequately investigated.
- 1.19 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.
- 1.19.1 Applicants who have undergone nephrectomy shall be assessed as unfit unless the condition is well compensated.
- 1.20 Applicants with acquired immunodeficiency syndrome (AIDS) shall be assessed as unfit.
- 1.20.1 Applicants who are seropositive for human immunodeficiency virus (HIV) shall be assessed as unfit unless full investigation provides no evidence of clinical disease.
- Note.— Evaluation of applicants who are seropositive for human immunodeficiency virus (HIV) requires particular attention to their mental state, including the psychological effects of the diagnosis.
- 1.21 Applicants with gynaecological disorders that are likely to interfere with the safe exercise of their licence and rating privileges shall be assessed as unfit.
- 1.22 Applicants who are pregnant shall be assessed as unfit unless obstetrical evaluation and continued medical supervision indicate a low-risk uncomplicated pregnancy.
- 1.22.1 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.
- 1.22.2 For applicants with a low-risk uncomplicated pregnancy, evaluated and supervised in accordance with paragraph 1.22, the fit assessment shall be limited to the period until the end of the 34th week of gestation.

- 1.23 Following confinement or termination of pregnancy the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-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.
- 1.24 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.
- 1.25 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.
- 1.26 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.
- 1.27 Applicants with stuttering or other speech defects sufficiently severe to cause impairment of speech communication shall be assessed as unfit.

## **2 VISUAL REQUIREMENTS**

- 2.1 Each eye of the applicant will be tested separately. The methods of testing visual acuity shall be as follows:
- (a) visual acuity tests shall be conducted in an environment with a level of illumination which 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, as appropriate to the method of testing adopted.
- 2.2 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.
- 2.3 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 the Licensing Authority. 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.

2.3.1 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.

2.3.2 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.

2.3.3 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 Examination and every five years thereafter.

Note.— The purpose of the required ophthalmic examination is (1) to ascertain normal vision performance, and (2) to identify any significant pathology.

2.4 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.

2.5 The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by 2.2, 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 2.2; 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 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 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 air traffic control duties the applicant is likely to perform.

- 2.5.1 When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.
- 2.6 The applicant shall be required to have normal fields of vision.
- 2.7 The applicant shall be required to have normal binocular function.
- 2.7.1 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.

### **3 COLOUR PERCEPTION REQUIREMENTS**

- 3.1 The applicant shall be required to demonstrate the ability to perceive readily those colours the perception of which is necessary for the safe performance of duties.
- 3.2 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).
- 3.3 An applicant obtaining a satisfactory result as prescribed by the evaluating medical examiner 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.
- 3.3.1 Sunglasses worn during the exercise of the privileges of the licence or rating held shall be non-polarizing and of a neutral grey tint.

### **4 HEARING REQUIREMENTS**

- 4.1 The applicant shall be required to demonstrate a hearing performance sufficient for the safe exercise of their licence and rating privileges.
- 4.2 Applicants shall be tested by pure-tone audiometry at first issue of the licence, not less than once every four years up to the age of 40 years, and thereafter not less than once every two years.
- 4.2.1 Alternatively, other methods providing equivalent results may be used.
- 4.3 At medical examinations, other than those mentioned in paragraph 4.2, where audiometry is not performed, applicants shall be tested in a quiet room by whispered and spoken voice tests.  
  
Note 1.— 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 2.— 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.
- 4.4 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.

- 4.4.1 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 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 4 800 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.

- 4.4.2 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.