United Arab Emirates

الهيئة العامة للطيران المدني
GENERAL CIVIL AVIATION AUTHORITY

NPA No. 10 /2014

GCAA CAR MED REGULATION IMPLEMENTATION

Release Date: 19 MAY 2014

The GCAA has recently conducted a review of (CAR PART 2 Chapter 5) as part of its efforts to align its regulations with EASA rules. This proposed regulation has been developed by the aeromedical regulatory committee.

The review has concluded that there is a need for a new regulation to be introduced in order to update the GCAA medical certification regulations to harmonies the current GCAA Safety Affairs regulatory suite, to write a forward focused set of regulations that closely mirror the EU MED regulations in order to meet the GCAA strategic objectives and to ensure greater synergy with other national regulatory bodies for the betterment of the UAE aviation industry as a whole.

The proposed initial entry into force date of the amendment is 1st June 2014. A transition period until end of December 2014 will be allowed for the full implementation of the new regulation.

This notice is published to announce to the public this amendment and to entitle all concerned parties to:
1. Review the attached proposed regulation; and

2. Submit their comments online through the GCAA website within 15 days from the date of this NPA.

Comments must be submitted through the GCAA Website – E-Publication – Notice of Proposed Amendment, using the Action of “Submit NPA Feedback Request.”

Comments and Responses may be viewed in the Comments Response Document CRD pertaining to this NPA on the GCAA website.

CAR Part II – Chapter 5 (bis)

(CAR MED)

FOREWORD

1. This is initial issue of CAR MED.

2. This issue of the Regulation shall enter into force from 1st June 2014.

3. New amended and corrected or added text will be highlighted through a revision bar on the left side of the paragraph.

4. The General Civil Aviation Authority is hereinafter called, “Authority”.

5. Guidance Material (**GM**) is non-binding material that helps to illustrate the meaning of a requirement or specification and is used to support the interpretation of regulations or AMCs.

6. For the purpose of this regulation, the word “ SUBPART” means “SUBCHAPTER”

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SUBPART A - GENERAL REQUIREMENTS

Section 1 - General

MED.A.001 GCAA

For the purpose of this Chapter, the GCAA shall be the competent authority:

(a) for aero-medical centres (AeMC)

(b) for aero-medical examiners (AME):

MED.A.005 Scope

This Chapter establishes the requirements for:

(a) the issue, validity period, revalidation and renewal of the medical certificate required for exercising the privileges of a pilot licence or of a student pilot;

(b) the medical fitness of cabin crew;

(c) the certification of AMEs; and

(d) the certification of senior AME ;and

(e) the requirements for AeMC

MED.A.010 Definitions

For the purpose of this Chapter, the following definitions apply:

- 'Accredited medical conclusion' means the conclusion reached by one or more medical experts acceptable to the licensing authority, on the basis of objective and non-discriminatory criteria, for the purposes of the case concerned, in consultation with flight operations or other experts as necessary,
- 'Assessment' means the conclusion on the medical fitness of a person based on the evaluation of the person's medical history and/or aero-medical examinations as required in this Chapter and further examinations as necessary, and/or medical tests such as, but not limited to, ECG, blood pressure measurement, blood testing, X-ray,
- 'Colour safe' means the ability of an applicant to readily distinguish the colours used in air navigation and correctly identify aviation coloured lights,
- 'Eye specialist' means an ophthalmologist or a vision care specialist qualified in optometry and trained to recognise pathological
- 'Examination' means an inspection, palpation, percussion, auscultation or other means of investigation especially for diagnosing disease,
- 'Investigation' means the assessment of a suspected pathological condition of an applicant by means of examinations and tests in order to verify the presence or absence of a medical condition,
- 'Licensing authority' means the GCAA that issued the licence, or to which a person applies for the issue of a licence, or, when a person has not yet applied for the issue of a licence, the GCAA in accordance with this Chapter,
- 'Limitation' means a condition placed on the medical certificate, licence or cabin crew medical report that shall be complied with whilst exercising the privileges of the licence, or cabin crew Licence,

- ‘Refractive error’ means the deviation from emmetropia measured in dioptres in the most ametropic meridian, measured by standard methods.

MED.A.015 Medical confidentiality

All persons involved in medical examination, assessment and certification shall ensure that medical confidentiality is respected at all times.

MED.A.020 Decrease in medical fitness

(a) Licence holders shall not exercise the privileges of their licence and related ratings or certificates at any time when they:

1. are aware of any decrease in their medical fitness which might render them unable to safely exercise those privileges;
2. take or use any prescribed or non-prescribed medication which is likely to interfere with the safe exercise of the privileges of the applicable licence;
3. receive any medical, surgical or other treatment that is likely to interfere with flight safety.

(b) In addition, licence holders shall, without undue delay, seek aero-medical advice when they:

1. have undergone a surgical operation or invasive procedure;
2. have commenced the regular use of any medication;
3. have suffered any significant personal injury involving incapacity to function as a member of the flight crew;
4. have been suffering from any significant illness involving incapacity to function as a member of the flight crew;
5. are pregnant;
6. have been admitted to hospital or medical clinic;
7. first require correcting lenses.

(c) In these cases:

1. holders of Class 1 and Class 2 medical certificates shall seek the advice of an AeMC or AME. The AeMC or AME shall assess the medical fitness of the licence holder and decide whether they are fit to resume the exercise of their privileges;
2. holders of LAPL medical certificates shall seek the advice of an AeMC or AME who signed the medical certificate. The AeMC, AME shall assess the medical fitness of the licence holders and decide whether they are fit to resume the exercise of their privileges.

(d) Cabin crew members shall not perform duties on an aircraft and, where applicable, shall not exercise the privileges of their cabin crew licence when they are aware of any decrease in their medical fitness, to the extent that this condition might render them unable to discharge their safety duties and responsibilities.

(e) In addition, if in the medical conditions specified in (b)(1) to (b)(5), cabin crew members shall, without undue delay, seek the advice of an AME, or AeMC as applicable. The AME, AeMC or OHMP shall assess the medical fitness of the cabin crew members and decide whether they are fit to resume their safety duties.

MED.A.025 Obligations of AeMC, and AME

(a) When conducting medical examinations and/or assessments, AeMC and AME, shall:

1. ensure that communication with the person can be established without language barriers;
2. make the person aware of the consequences of providing incomplete, inaccurate or false statements on their medical history.

(b) After completion of the aero-medical examinations and/or assessment, the AeMC and AME, shall:

1. advise the person whether fit, unfit or referred to the licensing authority, AeMC or AME as applicable;
2. inform the person of any limitation that may restrict flight training or the privileges of the licence, or cabin crew attestation as applicable;
3. if the person has been assessed as unfit, inform him/her of his/her right of a secondary review; and
4. in the case of applicants for a medical certificate, submit without delay a signed, or electronically authenticated, report to include the assessment result and a copy of the medical certificate to the licensing authority.

(c) AeMCs and AMEs shall maintain records with details of medical examinations and assessments performed in accordance with this Chapter and their results in accordance with national legislation.

(d) When required for medical certification and/or oversight functions, AeMCs and AMEs shall submit to the medical assessor of the GCAA upon request all aero-medical records and reports, and any other relevant information.

Section 2 - Requirements for medical certificates

MED.A.030 Medical certificates

(a) A student pilot shall not fly solo unless that student pilot holds a medical certificate, as required for the relevant licence.

(b) Applicants for and holders of a light aircraft pilot licence (LAPL) shall hold at least an LAPL medical certificate.

(c) Applicants for and holders of a private pilot licence (PPL), a sailplane pilot licence (SPL), or a balloon pilot licence (BPL) shall hold at least a Class 2 medical certificate.

(d) Applicants for and holders of an SPL or a BPL involved in commercial sailplane or balloon flights shall hold at least a Class 2 medical certificate.

(e) If a night rating is added to a PPL or LAPL, the licence holder shall be colour safe.

(f) Applicants for and holders of a commercial pilot licence (CPL), a multi-crew pilot licence (MPL), or an airline transport pilot licence (ATPL) shall hold a Class 1 medical certificate.

(g) If an instrument rating is added to a PPL, the licence holder shall undertake pure tone audiometry examinations in accordance with the periodicity and the standard required for Class 1 medical certificate holders.

(h) A licence holder shall not at any time hold more than one medical certificate issued in accordance with this Chapter.

MED.A.035 Application for a medical certificate

(a) Applications for a medical certificate shall be made in an electronic format established by the GCAA.

(b) Applicants for a medical certificate shall provide the AeMC or AME as applicable, with:

1. proof of their identity;
2. a signed declaration:
    (i) of medical facts concerning their medical history;
    (ii) as to whether they have previously undergone an examination for a medical certificate and, if so, by whom and with what result;
    (iii) as to whether they have ever been assessed as unfit or had a medical certificate suspended or revoked.

(c) When applying for a revalidation or renewal of the medical certificate, applicants shall present the medical certificate to the AeMC or AME prior to the relevant examinations.

MED.A.040 Issue, revalidation and renewal of medical certificates

(a) A medical certificate shall only be issued, revalidated or renewed once the required medical examinations and/or assessments have been completed and a fit assessment is made.

(b) Initial issue:

1. Class 1 medical certificates shall be issued by an AeMC.
2. Class 2 medical certificates shall be issued by an AeMC or an AME.
3. LAPL medical certificates shall be issued by an AeMC, an AME

(c) Revalidation and renewal:

1. Class 1 and Class 2 medical certificates shall be revalidated or renewed by an AeMC or an AME.
2. LAPL medical certificates shall be revalidated or renewed by an AeMC, an AME

(d) The AeMC or AME shall only issue, revalidate or renew a medical certificate if:

1. the applicant has provided them with a complete medical history and, if required by the AeMC or AME, results of medical examinations and tests conducted by the applicant's doctor or any medical specialists; and
2 the AeMC or AME have conducted the aero-medical assessment based on the medical examinations and tests as required for the relevant medical certificate to verify that the applicant complies with all the relevant requirements of this Chapter.

(e) The AME, AeMC or, in the case of referral, the licensing authority may require the applicant to undergo additional medical examinations and investigations when clinically indicated before they issue, revalidate or renew a medical certificate.

(f) The licensing authority may issue or re-issue a medical certificate, as applicable, if:

1. a case is referred;
2. it has identified that corrections to the information on the certificate are necessary.

MED.A.045 Validity, revalidation and renewal of medical certificates

(a) Validity

1. Class 1 medical certificates shall be valid for a period of 12 months.
2. The period of validity of Class 1 medical certificates shall be reduced to 6 months for licence holders who:
    (i) are engaged in single-pilot commercial air transport operations carrying passengers and have reached the age of 40;
    (ii) have reached the age of 60.
3. Class 2 medical certificates shall be valid for a period of:
    (i) 60 months until the licence holder reaches the age of 40. A medical certificate issued prior to reaching the age of 40 shall cease to be valid after the licence holder reaches the age of 42;
    (ii) 24 months between the age of 40 and 50. A medical certificate issued prior to reaching the age of 50 shall cease to be valid after the licence holder reaches the age of 51; and
    (iii) 12 months after the age of 50.
4. LAPL medical certificates shall be valid for a period of:
    (i) 60 months until the licence holder reaches the age of 40. A medical certificate issued prior to reaching the age of 40 shall cease to be valid after the licence holder reaches the age of 42;
    (ii) 24 months after the age of 40.
5. The validity period of a medical certificate, including any associated examination or special investigation, shall be:
    (i) determined by the age of the applicant at the date when the medical examination takes place; and
    (ii) calculated from the date of the medical examination in the case of initial issue and renewal, and from the expiry date of the previous medical certificate in the case of revalidation.

(b) Revalidation

Examinations and/or assessments for the revalidation of a medical certificate may be undertaken up to 45 days prior to the expiry date of the medical certificate.

(c) Renewal

1. If the holder of a medical certificate does not comply with (b), a renewal examination and/or assessment shall be required.
2. In the case of Class 1 and Class 2 medical certificates:

(i) if the medical certificate has expired for more than 2 years, the AeMC or AME shall only conduct the renewal examination after assessment of the aero-medical records of the applicant;

(ii) if the medical certificate has expired for more than 5 years, the examination requirements for initial issue shall apply and the assessment shall be based on the revalidation requirements.

3. In the case of LAPL medical certificates, the AeMC, AME or GMP shall assess the medical history of the applicant and perform the aero-medical examination and/or assessment in accordance with MED.B.095.

(d) The holder of a pilot licence who has attained the age of 6o years shall not act as a pilot of an aircraft engaged in commercial air transport or private operation unless he meets the GCAA over 60 medical examination requirements

MED.A.050 Referral

(a) If an applicant for a Class 1 or Class 2 medical certificate is referred to the licensing authority in accordance with MED. B.001, the AeMC or AME shall transfer the relevant medical documentation to the licensing authority.

SUBPART B - REQUIREMENTS FOR PILOT MEDICAL CERTIFICATES

Section 1 - General

MED.B.001 Limitations to medical certificates

(a) Limitations to Class 1 and Class 2 medical certificates

1. If the applicant does not fully comply with the requirements for the relevant class of medical certificate but is considered to be not likely to jeopardise flight safety, the AeMC or AME shall:

   (i) in the case of applicants for a Class 1 medical certificate, refer the decision on fitness of the applicant to the licensing authority as indicated in this Subchapter;

   (ii) in cases where a referral to the licensing authority is not indicated in this Subchapter, evaluate whether the applicant is able to perform his/her duties safely when complying with one or more limitations endorsed on the medical certificate, and issue the medical certificate with limitation(s) as necessary;

   (iii) in the case of applicants for a Class 2 medical certificate, evaluate whether the applicant is able to perform his/her duties safely when complying with one or more limitations endorsed on the medical certificate, and issue the medical certificate, as necessary with limitation(s), in consultation with the licensing authority;

   (iv) the AeMC or AME may revalidate or renew a medical certificate with the same limitation without referring the applicant to the licensing authority.

(b) Limitations to LAPL medical certificates

1. If an AME, after due consideration of the applicant's medical history, concludes that the applicant does not fully meet the requirements for medical fitness, the AME shall refer the applicant to an AeMC, except those requiring a limitation related only to the use of corrective lenses.

2. If an applicant for an LAPL medical certificate has been referred, the AeMC shall give due consideration to MED.B.095, evaluate whether the applicant is able to perform their duties safely when complying with one or more limitations endorsed on the medical certificate and issue the medical certificate with limitation(s) as necessary. The AeMC shall always consider the need to restrict the pilot from carrying passengers (Operational Passenger Limitation, OPL).

3. The AME may revalidate or renew an LAPL medical certificate with the same limitation without referring the applicant to an AeMC.

(c) When assessing whether a limitation is necessary, particular consideration shall be given to:

1. whether 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 jeopardise flight safety;

2 the applicant's ability, skill and experience relevant to the operation to be performed.

(d) Operational limitation codes

1. Operational multi-pilot limitation (OML — Class 1 only)
    (i) When the holder of a CPL, ATPL or MPL does not fully meet the requirements for a Class 1 medical certificate and has been referred to the licensing authority, it shall be assessed whether the medical certificate may be issued with an OML 'valid only as or with qualified co-pilot'. This assessment shall be performed by the Licensing authority or Senior AME and approved by licensing authority .
    (ii) The holder of a medical certificate with an OML shall only operate an aircraft in multi-pilot operations when the other pilot is fully qualified on the relevant type of aircraft, is not subject to an OML and has not attained the age of 60 years.
    (iii) The OML for Class 1 medical certificates may be imposed by senior AME or licensing authority and only removed by the licensing authority.
2. Operational Safety Pilot Limitation (OSL — Class 2 and LAPL privileges)
    (i) The holder of a medical certificate with an OSL limitation shall only operate an aircraft if another pilot fully qualified to act as pilot-in-command on the relevant class or type of aircraft is carried on board, the aircraft is fitted with dual controls and the other pilot occupies a seat at the controls.
    (ii) The OSL for Class 2 medical certificates may be imposed or removed by an AeMC or AME in consultation with the licensing authority.
3. Operational Passenger Limitation (OPL — Class 2 and LAPL privileges)
    (i) The holder of a medical certificate with an OPL limitation shall only operate an aircraft without passengers on board.
    (ii) An OPL for Class 2 medical certificates may be imposed by an AeMC or AME in consultation with the licensing authority.
    (iii) An OPL for an LAPL medical certificate limitation may be imposed by an AeMC or AME.

(e) Any other limitation may be imposed on the holder of a medical certificate if required to ensure flight safety.

(f) Any limitation imposed on the holder of a medical certificate shall be specified therein.

Section 2 - Medical requirements for Class 1 and Class 2 medical certificates

MED.B.005 General

(a) Applicants for a medical certificate shall be free from any:
1. abnormality, congenital or acquired;
2. active, latent, acute or chronic disease or disability;
3. wound, injury or sequelae from operation;
4. effect or side effect of any prescribed or non-prescribed therapeutic, diagnostic or preventive medication taken; that would entail a degree of functional incapacity which is likely to interfere with the safe exercise of the privileges of the applicable licence or could

render the applicant likely to become suddenly unable to exercise the privileges of the licence safely.

(b) In cases where the decision on medical fitness of an applicant for a Class 1 medical certificate is referred to the licensing authority, this authority may delegate such a decision to an AeMC.

(c) In cases where the decision on medical fitness of an applicant for a Class 2 medical certificate is referred to the licensing authority, this authority may delegate such a decision to an AeMC.

MED.B.010 Cardiovascular System

(a) Examination

1. A standard 12-lead resting electrocardiogram (ECG) and report shall be completed on clinical indication, and:
    (i) for a Class 1 medical certificate, at the examination for the first issue of a medical certificate, then every 5 years until age 30, every 2 years until age 40, annually until age 50, and at all revalidation or renewal examinations thereafter;
    (ii) for a Class 2 medical certificate, at the first examination after age 40 and then every 2 years after age 50.
2. Extended cardiovascular assessment shall be required when clinically indicated.
3. For all Classes of medical certificate, an extended cardiovascular assessment shall be completed at the first revalidation or renewal examination at the age 60 and every year thereafter.
4. For a Class 1 medical certificate, estimation of serum lipids, including cholesterol, shall be required at the examination for the first issue of a medical certificate, and at the first examination after having reached the age of 40.
5. For all classes of Medical certificates, assessment of cardiovascular risk shall be required when clinically indicated.

(b) Cardiovascular System - General

1. Applicants shall not suffer from any cardiovascular disorder which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).
2. Applicants for a Class 1 medical certificate with any of the following conditions shall be assessed as unfit:
    (i) aneurysm of the thoracic or supra-renal abdominal aorta, before or after surgery;
    (ii) significant functional abnormality of any of the heart valves;
    (iii) heart or heart/lung transplantation.
3. Applicants for a Class 1 medical certificate with an established history or diagnosis of any of the following conditions shall be referred to the licensing authority:
    (i) peripheral arterial disease before or after surgery;
    (ii) aneurysm of the abdominal aorta, before or after surgery;
    (iii) functionally insignificant cardiac valvular abnormalities;
    (iv) after cardiac valve surgery;
    (v) abnormality of the pericardium, myocardium or endocardium;

(vi) congenital abnormality of the heart, before or after corrective surgery;

(vii) recurrent vasovagal syncope;

(viii) arterial or venous thrombosis;

(ix) pulmonary embolism;

(x) cardiovascular condition requiring systemic anticoagulant therapy.

4. Applicants for a Class 2 medical certificate with an established diagnosis of one of the conditions specified in (2) and (3) above shall be assessed by an approved GCAA cardiologist before a fit assessment can be considered in consultation with the licensing authority.

(c) Blood Pressure

1. The blood pressure shall be recorded at each examination.
2. The applicant's blood pressure shall be within normal limits.
3. Applicants for a Class 1 medical certificate:

   (i) with symptomatic hypotension; or

   (ii) whose blood pressure at examination consistently exceeds 160 mmHg systolic and/or 95 mmHg diastolic, with or without treatment;

   shall be assessed as unfit.
4. The initiation of medication for the control of blood pressure shall require a period of temporary suspension of the medical certificate to establish the absence of significant side effects.

(d) Coronary Artery Disease

1. Applicants for a Class 1 medical certificate with:

   (i) suspected myocardial ischaemia;

   (ii) asymptomatic minor coronary artery disease requiring no anti-anginal treatment;

   shall be referred to the licensing authority and undergo cardiological evaluation to exclude myocardial ischaemia before a fit assessment can be considered.
2. Applicants for a Class 2 medical certificate with any of the conditions detailed in (1) shall undergo cardiological evaluation before a fit assessment can be considered.
3. Applicants with any of the following conditions shall be assessed as unfit:

   (i) myocardial ischaemia;

   (ii) symptomatic coronary artery disease;

   (iii) symptoms of coronary artery disease controlled by medication.
4. Applicants for the initial issue of a Class 1 medical certificate with a history or diagnosis of any of the following conditions shall be assessed as unfit:

   (i) myocardial ischaemia;

   (ii) myocardial infarction;

   (iii) revascularisation for coronary artery disease.

   5. Applicants for a Class 2 medical certificate who are asymptomatic following myocardial infarction or surgery for coronary artery disease shall undergo satisfactory cardiological evaluation before a fit assessment can be considered in

consultation with the licensing authority. Applicants for the revalidation of a Class 1 medical certificate shall be referred to the licensing authority.

(e) Rhythm/Conduction Disturbances

1. Applicants for a Class 1 medical certificate shall be referred to the licensing authority when they have any significant disturbance of cardiac conduction or rhythm, including any of the following:

    (i) disturbance of supraventricular rhythm, including intermittent or established sinoatrial dysfunction, atrial fibrillation and/or flutter and asymptomatic sinus pauses;

    (ii) complete left bundle branch block;

    (iii) Mobitz type 2 atrioventricular block;

    (iv) broad and/or narrow complex tachycardia;

    (v) ventricular pre-excitation;

    (vi) asymptomatic QT prolongation;

    (vii) Brugada pattern on electrocardiography.

2. Applicants for a Class 2 medical certificate with any of the conditions detailed in (1) shall undergo satisfactory cardiological evaluation before a fit assessment in consultation with the licensing authority can be considered.

3. Applicants with any of the following:

    (i) incomplete bundle branch block;

    (ii) complete right bundle branch block;

    (iii) stable left axis deviation;

    (iv) asymptomatic sinus bradycardia;

    (v) asymptomatic sinus tachycardia;

    (vi) asymptomatic isolated uniform supra-ventricular or ventricular ectopic complexes;

    (vii) first degree atrioventricular block;

    (viii) Mobitz type 1 atrioventricular block;

    may be assessed as fit in the absence of any other abnormality and subject to satisfactory cardiological evaluation.

(4) Applicants with a history of:

    (i) ablation therapy;

    (ii) pacemaker implantation;

    shall undergo satisfactory cardiovascular evaluation before a fit assessment can be considered. Applicants for a Class 1 medical certificate shall be referred to the licensing authority. Applicants for a Class 2 medical certificate shall be assessed in consultation with the licensing authority.

5. Applicants with any of the following conditions shall be assessed as unfit:

    (i) symptomatic sinoatrial disease;

    (ii) complete atrioventricular block;

(iii) symptomatic QT prolongation;

(iv) an automatic implantable defibrillating system;

(v) a ventricular anti-tachycardia pacemaker.

MED.B.015 Respiratory System

(a) Applicants with significant impairment of pulmonary function shall be assessed as unfit. A fit assessment may be considered once pulmonary function has recovered and is satisfactory.

(b) For a Class 1 medical certificate, applicants are required to undertake pulmonary function tests at the initial examination and on clinical indication.

(c) For a Class 2 medical certificate, applicants are required to undertake pulmonary function tests on clinical indication.

(d) Applicants with a history or established diagnosis of:

1. asthma requiring medication;
2. active inflammatory disease of the respiratory system;
3. active sarcoidosis;
4. pneumothorax;
5. sleep apnoea syndrome;
6. major thoracic surgery;
7. pneumonectomy;

shall undergo respiratory evaluation with a satisfactory result before a fit assessment can be considered. Applicants with an established diagnosis of the conditions specified in (3) and (5) shall undergo satisfactory cardiological evaluation before a fit assessment can be considered.

(e) Aero-medical assessment:

1. applicants for a Class 1 medical certificate with any of the conditions detailed in (d) above shall be referred to the licensing authority;
2. applicants for a Class 2 medical certificate with any of the conditions detailed in (d) above shall be assessed in consultation with the licensing authority.

(f) Applicants for a Class 1 medical certificate who have undergone a total pneumonectomy shall be assessed as unfit.

MED.B.020 Digestive System

(a) Applicants shall not possess any functional or structural disease of the gastro-intestinal tract or its adnexa which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(b) Applicants with any sequelae of disease or surgical intervention in 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.

(c) Applicants shall be free from herniae that might give rise to incapacitating symptoms.

(d) Applicants with disorders of the gastro-intestinal system including:

1. recurrent dyspeptic disorder requiring medication;
2. pancreatitis;
3. symptomatic gallstones;
4. an established diagnosis or history of chronic inflammatory bowel disease;
5. after surgical operation on the digestive tract or its adnexa, including surgery involving total or partial excision or a diversion of any of these organs;

shall be assessed as unfit. A fit assessment may be considered after successful treatment or full recovery after surgery and subject to satisfactory gastroenterological evaluation.

(e) Aero-medical assessment:

1. applicants for a Class 1 medical certificate with the diagnosis of the conditions specified in (2), (4) and (5) shall be referred to the licensing authority;
2. fitness of Class 2 applicants with pancreatitis shall be assessed in consultation with the licensing authority.

MED.B.025 Metabolic and Endocrine Systems

(a) Applicants shall not possess any functional or structural metabolic, nutritional or endocrine disorder which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(b) Applicants with metabolic, nutritional or endocrine dysfunction may be assessed as fit subject to demonstrated stability of the condition and satisfactory aero-medical evaluation.

(c) Diabetes mellitus

1. Applicants with diabetes mellitus requiring insulin shall be assessed as unfit.
2. Applicants with diabetes mellitus not requiring insulin shall be assessed as unfit unless it can be demonstrated that blood sugar control has been achieved.

(d) Aero-medical assessment:

1. applicants for a Class 1 medical certificate requiring medication other than insulin for blood sugar control shall be referred to the licensing authority;
2. fitness of Class 2 applicants requiring medication other than insulin for blood sugar control shall be assessed in consultation with the licensing authority.

MED.B.030 Haematology

(a) Applicants shall not possess any haematological disease which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(b) For a Class 1 medical certificate, Full blood count shall be tested at each examination for the issue of a medical certificate.

(c) Applicants with a haematological condition, such as:

1. coagulation, haemorragic or thrombotic disorder;
2. chronic leukaemia;

may be assessed as fit subject to satisfactory aeromedical evaluation.

d. Aero-medical assessment:

1. applicants for a Class 1 medical certificate with one of the conditions specified in (c) above shall be referred to the licensing authority;
2. fitness of Class 2 applicants with one of the conditions specified in (c) above shall be assessed in consultation with the licensing authority.

(e) Class 1 applicants with one of the haematological conditions specified below shall be referred to the licensing authority:

1. abnormal haemoglobin, including, but not limited to anaemia, polycythaemia or haemoglobinopathy;
2. significant lymphatic enlargement;
3. enlargement of the spleen.

MED.B.035 Genitourinary System

(a) Applicants shall not possess any functional or structural disease of the renal or genito-urinary system or its adnexa which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(b) Urinalysis shall form part of every aero-medical examination. The urine shall contain no abnormal element considered to be of pathological significance.

(c) Applicants with any sequela of disease or surgical procedures on the kidneys or the urinary tract likely to cause incapacitation, in particular any obstruction due to stricture or compression shall be assessed as unfit.

(d) Applicants with a genitourinary disorder, such as:

1. renal disease;
2. one or more urinary calculi, or a history of renal colic;

may be assessed as fit subject to satisfactory renal/urological evaluation.

(e) Applicants who have undergone a major surgical operation in the urinary apparatus involving a total or partial excision or a diversion of its organs shall be assessed as unfit and be re-assessed after full recovery before a fit assessment can be considered. Applicants for a Class 1 medical certificate shall be referred to the licensing authority for the re-assessment.

MED.B.040 Infectious Disease

(a) Applicants shall have no established medical history or clinical diagnosis of any infectious disease which is likely to interfere with the safe exercise of the privileges of the applicable licence held.

(b) Applicants who are HIV positive shall be assessed as unfit.

MED.B.045 Obstetrics and Gynaecology

(a) Applicants shall not possess any functional or structural obstetric or gynaecological condition which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(b) Applicants who have undergone a major gynaecological operation shall be assessed as unfit until full recovery.

(c) Pregnancy

1. In the case of pregnancy, if the AeMC or AME considers that the licence holder is fit to exercise her privileges, he/she shall limit the validity period of the medical certificate to the end of the 26th week of gestation. After this point, the certificate shall be suspended. The suspension shall be lifted after full recovery following the end of the pregnancy.
2. Holders of Class 1 medical certificates shall only exercise the privileges of their licences until the 26th week of gestation with an OML. Notwithstanding MED. B.001 in this case, the OML may be imposed and removed by the AeMC or AME.

MED.B.050 Musculoskeletal System

(a) Applicants shall not possess any abnormality of the bones, joints, muscles or tendons, congenital or acquired which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(b) An applicant shall have sufficient sitting height, arm and leg length and muscular strength for the safe exercise of the privileges of the applicable licence(s).

(c) An applicant shall have satisfactory functional use of the musculoskeletal system to enable the safe exercise of the privileges of the applicable licence(s). Fitness of the applicants shall be assessed in consultation with the licensing authority.

MED.B.055 Psychiatry

(a) Applicants shall have no established medical history or clinical diagnosis of any psychiatric disease or disability, condition or disorder, acute or chronic, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(b) Applicants with a mental or behavioural disorder due to alcohol or other use or abuse of psychotropic substances shall be assessed as unfit pending recovery and freedom from substance use and subject to satisfactory psychiatric evaluation after successful treatment. Applicants for a Class 1 medical certificate shall be referred to the licensing authority. Fitness of Class 2 applicants shall be assessed in consultation with the licensing authority.

(c) Applicants with a psychiatric condition such as:

1. mood disorder;
2. neurotic disorder;
3. personality disorder;
4. mental or behavioural disorder;

shall undergo satisfactory psychiatric evaluation before a fit assessment can be made.

(d) Applicants with a history of a single or repeated acts of deliberate self-harm shall be assessed as unfit. Applicants shall undergo satisfactory psychiatric evaluation before a fit assessment can be considered.

(e) Aero-medical assessment:

1. applicants for a Class 1 medical certificate with one of the conditions detailed in (b), (c) or (d) above shall be referred to the licensing authority;

2. fitness of Class 2 applicants with one of the conditions detailed in (b), (c) or (d) above shall be assessed in consultation with the licensing authority.

(f) Applicants with an established history or clinical diagnosis of schizophrenia, schizotypal or delusional disorder shall be assessed as unfit.

MED.B.060 Psychology

(a) Applicants shall have no established psychological deficiencies, which are likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(b) A psychological evaluation may be required as part of, or complementary to, a specialist psychiatric or neurological examination.

MED.B.065 Neurology

(a) Applicants shall have no established medical history or clinical diagnosis of any neurological condition which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(b) Applicants with an established history or clinical diagnosis of:

1. epilepsy;
2. recurring episodes of disturbance of consciousness of uncertain cause;

shall be assessed as unfit.

(c) Applicants with an established history or clinical diagnosis of:

1. epilepsy without recurrence after age 5;
2. epilepsy without recurrence and off all treatment for more than 10 years;
3. epileptiform EEG abnormalities and focal slow waves;
4. progressive or non-progressive disease of the nervous system;
5. a single episode of disturbance of consciousness of uncertain cause;
6. loss of consciousness after head injury;
7. penetrating brain injury;
8. spinal or peripheral nerve injury;

shall undergo further evaluation before a fit assessment can be considered. Applicants for a Class 1 medical certificate shall be referred to the licensing authority. Fitness of Class 2 applicants shall be assessed in consultation with the licensing authority.

MED.B.070 Visual System

(a) Applicants shall not possess any abnormality of the function of the eyes or their adnexa or any active pathological condition, congenital or acquired, acute or chronic, or any sequelae of eye surgery or trauma, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(b) Examination

1. For a Class 1 medical certificate:

(i) a comprehensive eye examination shall form part of the initial examination and be undertaken periodically depending on the refraction and the functional performance of the eye; and

(ii) a routine eye examination shall form part of all revalidation and renewal examinations.

2. For a Class 2 medical certificate:

(i) a routine eye examination shall form part of the initial and all revalidation and renewal examinations; and

(ii) a comprehensive eye examination shall be undertaken when clinically indicated.

(c) Distant visual acuity, with or without correction, shall be:

1. in the case of Class 1 medical certificates, 6/9 (0,7) or better in each eye separately and visual acuity with both eyes shall be 6/6 (1,0) or better;

2. in the case of Class 2 medical certificates, 6/12 (0,5) or better in each eye separately and visual acuity with both eyes shall be 6/9 (0,7) or better. An applicant with substandard vision in one eye may be assessed as fit in consultation with the licensing authority subject to satisfactory ophthalmic assessment;

3. applicants for an initial Class 1 medical certificate with substandard vision in one eye shall be assessed as unfit. At revalidation, applicants with acquired substandard vision in one eye shall be referred to the licensing authority and may be assessed as fit if it is unlikely to interfere with safe exercise of the licence held.

(d) An applicant shall be able to read an N5 chart (or equivalent) at 30-50 cm and an N14 chart (or equivalent) at 100 cm, with correction, if prescribed.

(e) Applicants for a Class 1 medical certificate shall be required to have normal fields of vision and normal binocular function.

(f) Applicants who have undergone eye surgery may be assessed as fit subject to satisfactory ophthalmic evaluation.

(g) Applicants with a clinical diagnosis of keratoconus may be assessed as fit subject to a satisfactory examination by an ophthalmologist. Applicants for a Class 1 medical certificate shall be referred to the licensing authority.

(h) Applicants with:

1. astigmatism;

2. anisometropia;

may be assessed as fit subject to satisfactory ophthalmic evaluation.

(i) Applicants with diplopia shall be assessed as unfit.

(j) Spectacles and contact lenses. If satisfactory visual function is achieved only with the use of correction:

1. (i) for distant vision, spectacles or contact lenses shall be worn whilst exercising the privileges of the applicable licence(s);

(ii) for near vision, a pair of spectacles for near use shall be kept available during the exercise of the privileges of the licence;

2. a spare set of similarly correcting spectacles shall be readily available for immediate use whilst exercising the privileges of the applicable licence(s);
3. the correction shall provide optimal visual function, be well-tolerated and suitable for aviation purposes;
4. if contact lenses are worn, they shall be for distant vision, monofocal, non-tinted and well tolerated;
5. applicants with a large refractive error shall use contact lenses or high-index spectacle lenses;
6. no more than one pair of spectacles shall be used to meet the visual requirements;
7. orthokeratological lenses shall not be used.

MED.B.075 Colour vision

(a) Applicants shall be required to demonstrate the ability to perceive readily the colours that are necessary for the safe performance of duties.

(b) Examination

1. Applicants shall pass the Ishihara test for the initial issue of a medical certificate.
2. Applicants who fail to pass in the Ishihara test shall undergo GCAA approved advanced colour perception testing to establish whether they are colour safe.

(c) In the case of Class 1 medical certificates, applicants shall have normal perception of colours or be colour safe. Applicants who fail further colour perception testing shall be assessed as unfit. Applicants for a Class 1 medical certificate shall be referred to the licensing authority.

(d) In the case of Class 2 medical certificates, when the applicant does not have satisfactory perception of colours, his/her flying privileges shall be limited to daytime only.

MED.B.080 Otorhino-laryngology

(a) Applicants shall not possess any abnormality of the function of the ears, nose, sinuses or throat, including oral cavity, teeth and larynx, or any active pathological condition, congenital or acquired, acute or chronic, or any sequelae of surgery or trauma which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(b) Hearing shall be satisfactory for the safe exercise of the privileges of the applicable licence(s).

(c) Examination

1. Hearing shall be tested at all examinations.
    (i) In the case of Class 1 medical certificates and Class 2 medical certificates, when an instrument rating is to be added to the licence held, hearing shall be tested with pure tone audiometry at the initial examination and, at subsequent revalidation or renewal examinations, every 5 years until the age 40 and every 2 years thereafter.
    (ii) When tested on a pure-tone audiometer, initial applicants shall not have a hearing loss 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, in either ear separately. Applicants for revalidation or renewal, with greater hearing loss shall demonstrate satisfactory functional hearing ability.

(iii) Applicants with hypoacusis shall demonstrate satisfactory functional hearing ability.

2. A comprehensive ear, nose and throat examination shall be undertaken for the initial issue of a Class 1 medical certificate and periodically thereafter when clinically indicated.

(d) Applicants for a Class 1 medical certificate with:

1. an active pathological process, acute or chronic, of the internal or middle ear;
2. unhealed perforation or dysfunction of the tympanic membrane(s);
3. disturbance of vestibular function;
4. significant restriction of the nasal passages;
5. sinus dysfunction;
6. significant malformation or significant, acute or chronic infection of the oral cavity or upper respiratory tract;
7. significant disorder of speech or voice;

shall undergo further medical examination and assessment to establish that the condition does not interfere with the safe exercise of the privileges of the licence held.

(e) Aero-medical assessment:

1. applicants for a Class 1 medical certificate with the disturbance of vestibular function shall be referred to the licensing authority;
2. fitness of Class 2 applicants with the disturbance of vestibular function shall be assessed in consultation with the licensing authority.

MED.B.085 Dermatology

Applicants shall have no established dermatological condition likely to interfere with the safe exercise of the privileges of the applicable licence(s) held.

MED.B.090 Oncology

(a) Applicants shall have no established primary or secondary malignant disease likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(b) After treatment for malignant disease, applicants shall undergo satisfactory oncological evaluation before a fit assessment can be made. Class 1 applicants shall be referred to the licensing authority. Fitness of Class 2 applicants shall be assessed in consultation with the licensing authority.

(c) Applicants with an established history or clinical diagnosis of intracerebral malignant tumour shall be assessed as unfit.

Section 3 - Specific requirements for LAPL medical certificates

MED.B.095 Medical examination and/or assessment of applicants for LAPL medical certificates

(a) An applicant for an LAPL medical certificate shall be assessed based on aero-medical best practice.

(b) Special attention shall be given to the applicant's complete medical history.

(c) The initial assessment, all subsequent re-assessments after age 50 and assessments in cases where the medical history of the applicant is not available to the examiner shall include at least the following:

1. clinical examination;
2. blood pressure;
3. urine test;
4. vision;
5. hearing ability.

(d) After the initial assessment, subsequent re-assessments until age 50 shall include:

1. an assessment of the LAPL holder's medical history; and
2. the items under paragraph (c) as deemed necessary by the AeMCor AME in accordance with aero-medical best practice.

SUBPART C - REQUIREMENTS FOR MEDICAL FITNESS OF CABIN CREW

Section 1 - General requirements

MED.C.001 General

Cabin crew members shall only perform the duties and responsibilities required by aviation safety rules on an aircraft if they comply with the applicable requirements of this Chapter.

MED.C.005 Aero-medical assessments

(a) Cabin crew members shall undergo aero-medical assessments to verify that they are free from any physical or mental illness which might lead to incapacitation or an inability to perform their assigned safety duties and responsibilities.

(b) Each cabin crew member shall undergo an aero-medical assessment before being first assigned to duties on an aircraft, and after that at intervals of maximum 60 months.

(c) Aero-medical assessments shall be conducted by an AMEor AeMC, if the requirements of MED.D.040 are complied with.

Section 2 - Requirements for aero-medical assessment of cabin crew

MED.C.020 General

Cabin crew members shall be free from any:

(a) abnormality, congenital or acquired;

(b) active, latent, acute or chronic disease or disability;

(c) wound, injury or sequelae from operation; and

(d) effect or side effect of any prescribed or non-prescribed therapeutic, diagnostic or preventive medication taken that would entail a degree of functional incapacity which might lead to incapacitation or an inability to discharge their safety duties and responsibilities.

MED.C.025 Content of aero-medical assessments

(a) An initial aero-medical assessment shall include at least:

1. an assessment of the applicant cabin crew member’s medical history; and
2. a clinical examination of the following:
    (i) cardiovascular system;
    (ii) respiratory system;
    (iii) musculoskeletal system;
    (iv) otorhino-laryngology;

(v) visual system; and

(vi) colour vision.

(b) Each subsequent aero-medical re-assessment shall include:

1. an assessment of the cabin crew member's medical history; and
2. a clinical examination if deemed necessary in accordance with aero-medical best practice.

(c) For the purpose of (a) and (b), in case of any doubt or if clinically indicated, a cabin crew member's aero-medical assessment shall also include any additional medical examination, test or investigation that are considered necessary by the AME or AeMC.

Section 3 - Additional requirements for applicants for, or holders of, a cabin crew licence

MED.C.030 Cabin crew medical report

(a) After completion of each aero-medical assessment, applicants for, and holders of, a cabin crew licence:

1. shall be provided with a cabin crew medical report by the AME or AeMC; and
2. shall provide the related information, or a copy of their cabin crew medical report to the operator(s) employing their services.

(b) Cabin crew medical report

A cabin crew medical report shall indicate the date of the aero-medical assessment, whether the cabin crew member has been assessed fit or unfit, the date of the next required aero-medical assessment and, if applicable, any limitation(s). Any other elements shall be subject to medical confidentiality in accordance with MED.A.015.

MED.C.035 Limitations

(a) If holders of a cabin crew licence do not fully comply with the medical requirements specified in Section 2, the AME or AeMC shall consider whether they may be able to perform cabin crew duties safely if complying with one or more limitations.

(b) Any limitation(s) to the exercise of the privileges granted by the cabin crew licence shall be specified on the cabin crew medical report and shall only be removed by an AeMC.

SUBPART D - AERO-MEDICAL EXAMINERS (AME) ,SENIOR AEROMEDICAL EXAMINERS(SAME)

Section 1 - Aero-Medical Examiners

MED.D.001 Privileges

(a) The privileges of an AME are to issue, revalidate and renew Class 2 medical certificates and LAPL medical certificates, and to conduct the relevant medical examinations and assessments.

(b) Holders of an AME certificate may apply for an extension of their privileges to include medical examinations for the revalidation and renewal of Class 1 medical certificates, if they comply with the requirements in MED.D.015.

(c) The scope of the privileges of the AME, and any condition thereof, shall be specified in the certificate.

GCAAGCAAMED.D.005 Application

(a) Application for a certificate as an AME shall be made in a form and manner specified by the GCAA.

(b) Applicants for an AME certificate shall provide the GCAA with:

1. personal details and professional address;
2. documentation demonstrating that they comply with the requirements established in MED.D.010, including a certificate of completion of the training course in aviation medicine appropriate to the privileges they apply for;
3. a written declaration that the AME will issue medical certificates on the basis of the requirements of this Chapter.

(c) When the AME undertakes aero-medical examinations in more than one location, they shall provide the GCAA with relevant information regarding all practice locations.

MED.D.010 Requirements for the issue of an AME certificate

Applicants for an AME certificate with the privileges for the initial issue, revalidation and renewal of Class 2 medical certificates shall:

(a) be fully qualified and licensed for the practice of medicine and hold a Certificate of Completion of specialist training;

(b) have undertaken a GCAA acceptable training course in aviation medicine;

(c) demonstrate to the GCAA that they:

1. have adequate facilities, procedures, documentation and functioning equipment suitable for aero-medical examinations;
2. have in place the necessary procedures and conditions to ensure medical confidentiality, and
3. Have adequate knowledge and skills necessary for examination and assessment for Class 2.

MED.D.015 Requirements for the extension of privileges

Applicants for an AME certificate extending their privileges to the revalidation and renewal of Class 1 medical certificates shall hold a valid certificate as an AME and have:

(a) conducted at least 30 examinations for the issue, revalidation or renewal of Class 2 medical certificates over a period of no more than 2years preceding the application;

(b) Successfully passed an examination at an approved Centre by the GCAA.

MED.D.020 Training courses in aviation medicine

(a) Training courses in aviation medicine shall be accepted by the GCAA. The organisation providing the course shall demonstrate that the course syllabus is adequate and that the persons in charge of providing the training have adequate knowledge and experience.

(b) Except in the case of refresher training, the courses shall be concluded by a written examination on the subjects included in the course content.

(c) The organisation providing the course shall issue a certificate of completion to applicants when they have obtained a pass in the examination.

MED.D.025 Changes to the AME certificate

(a) AMEs shall notify the GCAA of the following changes which could affect their certificate:

1. the AME is subject to disciplinary proceedings or investigation by a medical regulatory body;
2. there are any changes to the conditions on which the certificate was granted, including the content of the statements provided with the application;
3. the requirements for the issue are no longer met;
4. there is a change of aero-medical examiner's practice location(s) or correspondence address.

(b) Failure to inform the GCAA shall result in the suspension or revocation of the privileges of the certificate, on the basis of the decision of the GCAA that suspends or revokes the certificate.

MED.D.030 Validity of AME certificates

An AME certificate shall be issued for a period not exceeding 3 years. It shall be revalidated subject to the holder:

(a) continuing to fulfil the general conditions required for medical practice and maintaining registration as a medical practitioner according to national law;

(b) undertaking refresher training in aviation medicine within the last 3 years;

(c) having performed at least 10 aero-medical examinations every year;

(d) Successfully passed the GCAA Aviation medicine exam at a GCAA examination centre.

(e) remaining in compliance with the terms of their certificate; and

(f) exercising their privileges in accordance with this Chapter.

Section 2

MED.D.020 Requirements for the issue of a Senior Aeromedical Examiners (SAME) certificate

Applicants for a SAME certificate with the privileges for the initial issue, revalidation and renewal of Class 1 medical certificates shall:

(a) be fully qualified and licensed for the practice of medicine and hold a Certificate of Completion of specialist training related to aviation medicine;

(b) have a Diploma in Aviation medicine/or equivalent;

(e) Five years' experience in aviation medicine

(f) of 2 years' experience as GCAA designated Examiner for class 1 medical certificate.

(g) demonstrate to the GCAA that they:

1. have adequate facilities, procedures, documentation and functioning equipment suitable for aero-medical examinations; and
2. have in place the necessary procedures and conditions to ensure medical confidentiality.
3. Have adequate knowledge and skills necessary for examination and assessment for Class 1.
4. Acceptable level of competency in assessment and examination for class 1 medical certificate.

MED.D.025 Requirements for the extension of SAME privileges

Applicants for an SAME certificate extending their privileges for the accountable manger designation of an AeMC shall hold a valid certificate as an SAME and have:

(a) conducted at least 30 examinations for the issue, revalidation or renewal of Class 2 medical certificates over a period of no more than 5 2 years preceding the application;

(b) Successfully passed an examination at an approved Centre by the GCAA.

AMC/GM to CHAPTER-MEDICAL

SUBPART A - General requirements

Section 1 - General

AMC1 MED.A.015 Medical confidentiality

To ensure medical confidentiality, all medical reports and records should be securely held with accessibility restricted to personnel authorised by the GCAA medical section.

AMC1 MED.A.020 Decrease in medical fitness

If in any doubt about their fitness to fly, use of medication or treatment:

(a) holders of class 1 or class 2 medical certificates should seek the advice of an AeMC or AME;

(b) holders of LAPL medical certificates should seek the advice of an AeMC or AME who issued the holder's medical certificate;

(c) Suspension of exercise of privileges: holders of a medical certificate should seek the advice of an AeMC or AME when they have been suffering from any illness involving incapacity to function as a member of the flight crew which may exceed a period of at least 21 days.

AMC1 MED.A.025 Obligations of AeMC and AME

(a) The report required in MED.A.025 (b)(4) should detail the results of the examination and the evaluation of the findings with regard to medical fitness.

(b) The report may be submitted in electronic format, but adequate identification of the examiner should be ensured.

(c) If the medical examination is carried out by two or more AMEs, only one of them should be responsible for coordinating the results of the examination, evaluating the findings with regard to medical fitness, and signing the report.

GM 1 MED.A.020 Decrease in medical fitness

1. Reinstatement process of applicant licence after inter-current illness, injury/or pregnancy:

(a) As soon as it is ascertained by the AME that the applicant is medically fit to discharge his duties safely (a process which may need expert advice, series of medical investigations etc.), he should immediately inform the GCAA using the MED-Form 15A- and send all the supporting documents.

(b) The Aeromedical section will process the re-instatement request received from the AME within 72 hours, provided all the medical reports submitted are acceptable.

(c) If the clinic has not receive any intimation from the GCAA within 72 hours, re-instatement request sent by the AME to be treated as fit to fly/or to control, and the candidate can resume his duties.

(d) GCAA AMI will determine the re-instatement decision and any further investigation required. In such cases, the crew/ATC medicals will be kept pending until it is resolved.

1.1 Reinstatement of medical certificate by senior AME

The senior AME may be delegated the task of reinstatement of medical certificate for all classes of medical applications.

1.1.2 The procedure of reinstatement

- Initial examination by designated examiners
- complete fitness to work form MED- 33
- Attach all investigations and relevant reports
- The request along with all the reports will be reviewed by the senior AME who will recommend the reinstatement and sign after the AME, by this, the pilot may be returned to flying duties.
- The request form will be send to AMS through the electronic system for final review
- In case where the AME /or Senior AME require the addition of certain limitation or remarks on the MC, they can do so and then they should print new MC which reflect new changes. All the documentations- request/reports/copy of new MC -Shall be send to AMS.

Note: Senior AME must only review the requests and recommend the reinstatement, his role must not be to override other AME's responsibilities in the examination and reinstatement recommendation.

1.1.3 Fast track reinstatement procedure

- The AMS will process the reinstatement request at their convenient time, and if the crew/or airline prefer to process it at the earliest time then a procedure of fast tract must be applied.
- For the fast tract request, the AMS will process the request within 3 working days.
- The Aeromedical Inspectors and or /Head of AMS **SHALL not receive** any request of re-instatement through their e-mails, all the request must be send to Aermedical@gcaa.gov.ae or through Fax number 04 2111 626
- The payment must be submitted within 24 hours, the process of re-instatement will not be initiated unless the GCAA receives the payment. Airlines that have already got an invoice system with the GCAA, will be invoiced by end of the month.
- **During public holidays** – the GCAA AMS will not process any re-instatement requests.
- For any urgent request **ONLY THE SENIOR AMEs** can review the request, and return the licence holder to flying duties. In this case the senior AME should carry the responsibility before the GCAA, and the AMS will review same reinstatements request thereafter and will issue the final re-instatement letter.

Section 2 - Requirements for medical certificates

AMC1 MED.A.030 Medical certificates

(a) A class 1 medical certificate includes the privileges and validities of class 2 and LAPL medical certificates.

(b) A class 2 medical certificate includes the privileges and validities of a LAPL medical certificate.

AMC 1 MED.A.035 Application for a medical certificate

When applicants do not present a current or previous medical certificate to the AeMC or AME ~~or GMP~~ prior to the relevant examinations, the AeMC or AME ~~or GMP~~ should not issue the medical certificate unless relevant information is received from the licensing authority.

AMC1 MED.A.045 Validity, revalidation and renewal of medical certificates

The validity period of a medical certificate (including any associated examination or special investigation) is determined by the age of the applicant at the date of the medical examination.

(a) Over 60 pilots medical examination requirements

1. Initial issuance of over 60 medical certificate requirements

All initial over 60 medical certification should be done at the private approved AeMC where all required specialists are available for assessment.

In addition to the usual medical assessment required by the class of medical over 40 years, the first medical assessment at age of 60 years shall include:

(i) A psychological evaluation, which may be conducted by either the AME or consultant psychologist/psychiatrist, this should include Alcohol screening test (Laboratory tests).

(ii) An extended eye examination by an ophthalmologist.

(iii) Fasting blood glucose and a glucose tolerance test in cases where the initial test is abnormal.

(iv) Lipid profile.

(v) Cardiac evaluation by stress ECG.

(vi) Haemoglobin.

2. Renewal Requirements

Renewal of over 60 pilots medical certificate can be conducted at any recognised AeMC. The pilot will undergo, in addition to the usual medical assessment requirements;

(i). Every 6 months;

(A). An ECG.

(B). Fasting blood Glucose

(C). Lipid profile

(D). Haemoglobin

(ii). Every 12 months;

(A). Ophthalmology consultation.

(B). Audiogram

(C). Stress ECG

AMC1 MED.A.050 Referral

Referral to the licensing authority

(a) The licensing authority should supply the AeMC or AME with all necessary information that led to the decision on aero-medical fitness.

(b) The licensing authority should ensure that unusual or borderline cases are evaluated on a common basis.

SUBPART B - Specific requirements for class 1, class 2 and LAPL medical certificates

AMC for class 1, class 2 and LAPL medical certificates

Section 1 - General

AMC1 MED.B.001 Limitations to class 1, class 2 and LAPL medical certificates

(a) An AeMC or AME may refer the decision on fitness of the applicant to the licensing authority in borderline cases or where fitness is in doubt.

(b) In cases where a fit assessment can only be considered with a limitation, the AeMC, AME or the licensing authority should evaluate the medical condition of the applicant in consultation with flight operations and other experts, if necessary.

(c) Limitation codes:

	Code	Limitation
1	TML	restriction of the period of validity of the medical certificate
2	VDL	correction for defective distant vision
4	VNL	correction for defective near vision
5	CCL	correction by means of contact lenses only
6	VCL	valid by day only
7	HAL	valid only when hearing aids are worn
8	APL	valid only with approved prosthesis
9	OML	Valid only as or with qualified co-pilot
10	OCL	valid only as co-pilot
11	OPL	valid only without passengers (PPL and LPAL only)
12	SSL	special restriction as specified
13	OAL	restricted to demonstrated aircraft type
14	AHL	valid only with approved hand controls
15	SIC	specific regular medical examination(s) - contact licensing authority
16	RXO	specialist ophthalmological examinations

GM1 MED.B.001 Limitations to class 1, class 2 and LPAL medical certificates

1. Medical certificate issue with variation /Alternative means of compliance

The range of variation between individuals is such that if medical standards are laid down in rigid terms they will inevitably exclude a number of applicants who, though not meeting the standards in all aspects might nevertheless be considered capable of performing duties safely in the aviation environment. Since the Chicago Convention lays on Contracting States the duty to promote efficient and safe aviation as well as to regulate it, provision has been made in Annex I for the exercise of a degree of flexibility in the

application of medical standards, thus avoiding the hardship and injustice which might otherwise, occur. It is essential for the maintenance of flight safety that the manner in which flexibility is exercised should be reasonably uniform throughout the Contracting States if international acceptance of licences is to be maintained.

1.1 The Exercise of Flexibility

The provision of a degree of flexibility must not lead to a situation where its use becomes the rule rather than the exception. Annex I, 1.2.4.8 has been worded to make it clear that flexibility may be exercised only in the exceptional case. Failure to observe this requirement could result in routine approval of individuals not meeting specific medical requirements, such as visual standards, thus creating an abuse of the primary object of flexibility.

When evidence accumulates that "flexibility" is being utilised repeatedly in a particular respect, then the appropriateness of regulations defining the medical requirements comes into question and the suspicion is raised that the regulations define a requirement, which is not in keeping with demands of flight safety. However, when decisions to exercise flexibility are backed by an accredited medical conclusion it indicates that these decisions have not been regarded as a routine measure but that they have been taken following close examination and assessment of all the medical facts and their relationship to personal performance. The degree and intensity of investigation lying behind each decision accurately measures compliance with the principles.

1.2 The Terms "Waiver" & "Flexibility"

Annex I, 1.2.4.8, is frequently referred to as the "waiver clause" and the term medical "waiver" in connection with licensing is generally accepted. The use of the term "waiver" is unfortunate because the expression "to waive" is defined as "not to insist upon", "to relinquish voluntarily", "to neglect or disregard". In fact the correct exercise of "flexibility" as described in 1.2.4.8 is quite the opposite of "waiver" because the decision to permit the clause to be used is only reached after subjecting the individual involved to a critical analysis, possibly involving detailed personal examination together with deliberations by those who formulate the "accredited medical conclusion" and the decision of the Licensing Authority. In some cases, however, the Licensing Authority itself may well have the necessary expertise to make such a conclusion. What Annex1, 1.2.4.8, sets out to achieve is not the dismissal of a deficiency or discrepancy, but establishment of the fact that allowing a particular individual to exercise the privileges of a licence with or without the imposition of certain limitations on his activities will not be incompatible with the requirements of flight safety. For the purpose of this publication the use of the term medical certificate with special authorization to equal the use of waiver.

1.3 GCAA Procedures in Applying Flexibility

Aircrew personnel and applicants who do not meet Medical standards prescribed in CAR Part II may be considered for a waiver of standards. Medical certification with special Authorisation may be granted on the need of the service, consistent with training, experience, performance, and proven safety of the aircrew personnel.

1.3.1 Issue Pre-requisites of Medical Certification with special Authorisation

Medical certificates are based upon risk management and how it is applied to the following criteria:

(a) It cannot jeopardise the flight safety. i.e. risk of sudden incapacitation must not exceeds 1 % annual incapacitation risk.

(b) The disqualifying defect must not pose a risk of sudden incapacitation.

(c) It must not pose any potential risk for subtle incapacitation that might not be detected by the individual but would affect alertness, special senses, or information processing.

(d) It must not be subject to aggravation by flying duties.

(e) It must be resolved or stable at the time of the issue (i.e. non-progressive).

(f) If the possibility of progression or recurrence exists, the first signs or symptoms must be easily detectable and cannot constitute an undue hazard to the individual or to others.

(g) It cannot require uncommonly available tests, regular invasive procedures, non-routine medications or frequent absences to monitor stability or progression.

(h) It cannot involve unconventional medical treatments that are outside of standard of care.

1.3.2 Process of the issue

(a) When the applicant's ability to meet the medical standards has not been clearly demonstrated (complicated cases) , or where there has been a change to the existing physical condition of the candidate, the AME should not issue a medical certificate immediately.

(b) The AME may:

1. Deny the certification and defer the case to the GCAA for decision along with the supporting documents, or

2. Recommend to convene Aeromedical Evaluation Board

3. Arrange for extended medical evaluation which may be consultation with specialist and any testing or investigation to prepare the Aeromedical summary (AME) for the applicant. This extended initial examination provides an expedient way to return a grounded aviator to flight status pending official GCAA endorsement and granting of a Medical certificate by Licensing & Aeromedical Section. The AME must use the service -whenever applicable-of locally GCAA recognised or designated specialists.

(c) The AME then will prepare the request to the GCAA Licensing &Aeromedical section, with the following items:

1. Complete medical application form (LIC form 02)

2. A detailed history, review of systems, and physical findings associated with the defect must be recorded on the physical exam

3. All supporting documentation required by the appropriate Aeromedical section of the Licensing Department (i.e. laboratory, radiology, consultant reports...)

4. AME's recommended disposition

5. Applicant's most recent flight Assessment check – if applicable

6. All information required for continuation of previous waivers/deviations –whenever applicable

(d) The Aeromedical Inspector will look into the case and will review the Aeromedical summary and associated reports and approve the issue or medical certificates, or, will appoint Aeromedical Evaluation board and will notify the applicant of its intent to convene a medical evaluation board.

1.3.3 Procedure of Aeromedical Evaluation board

(a) The board consists of members appointed by the Aeromedical Inspector. The board evaluates medical cases, which, due to their complexity or uniqueness, warrant a comprehensive aeromedical evaluation. A Special Board of AME should not be requested merely to challenge a physical standard or disqualification without evidence of special circumstances.

(b) The Aeromedical Inspector will appoint three AME doctors to act as members of this board. The AME who have been dealing with the case and most involved will should be member of the board.

(c) The GCAA will authorise the president to consult with other experts in the medical community to conduct a proper evaluation of the applicant's medical qualification.

(d) The board members should meet and discuss the details of the case and the findings of the literature review with the objective of reaching an agreement on the conclusion and recommendations. It is the responsibility of the treating AME to present all the clinical details and relevant investigations to the board members.

(e) The pilot involved should attend the Board if deemed relevant.

(f) The President of the board should compile a final report to the GCAA that:

- Presents the details of the clinical problem and the board recommendations.
- Outlines any investigations done.
- Includes all reports from external specialists.
- Concludes if the members of the board were in agreement with regards to recommendations regarding further investigations, treatment, continued licensing, restrictions in licensing and follow up by the supervising AME. If not in agreements the differences in opinion should be presented in the letter of recommendation.
- Should be signed by the president of the board.
- Copy of the president recommendation letter should be forwarded to the member of the board.

(g) The Aeromedical Inspector will usually make conclusions based on the Medical Board recommendation report received from the president. In case where there is a disagreement between the board members, the GCAA will hold the final decision and The Aeromedical Inspector will recommend the issue of Medical certificate with variation or alternative means of compliance.

In recommending the variation the Aeromedical Inspector specifies the class of medical certificate authorised to be issued and may do any or all of the following:

1. Limit the duration of an Authorisation; validity of the Medical certificate

2. Condition the granting of a renewal of the authorisation on the results of subsequent medical tests, examinations, or evaluations;

3. State on the medical any operational limitation needed for safety;

4. Condition the continued effect of an Authorisation, and any medical class certificate based upon it, on compliance with a statement of functional limitations issued to the person in coordination with the GCAA Licensing Department

1.3.4 Senior Aeromedical Board

Occasionally the Aeromedical Inspector will convene a senior board AMEs which will be held by GCAA Aeromedical Committee members. The committee will constitute a board which is the final board to review Aeromedical dispositions as requested by AME and the boards. The board consists of a minimum of five members, three of whom must be GCAA committee member. The presiding officer shall be the Head of Aeromedical section; Sometimes the presence of flight operation personnel will be requested.

1.3.4.1 Procedure of Senior Aeromedical Evaluation board

(a) GCAA Licensing and Aeromedical Section will establish the senior Aeromedical Board, this committee chaired by Head of aeromedical Inspector and the members must be senior AMEs. The chairman and the members must be free of external influence.

(b) The board evaluates medical cases, which, due to their complexity or uniqueness, warrant a comprehensive aeromedical evaluation.

(c) The board members should meet and discuss the details of the case and the findings of the literature review with the objective of reaching an agreement on the conclusion and recommendations.

(d) Once a decision reached by the members the President of the board should compile a final report to Presents the details of the clinical problem and the board recommendations and Concludes if the members of the board were in agreement with regards to recommendations regarding continued licensing, restrictions in licensing and follow up requirements. Should be signed by the president of the board. The final decision on any case or issue will remain the privilege of GCAA.

(e) Copy of the president recommendation letter should be forwarded to the members of the board.

(f) Once the GCAA reaches the final decision either to issue or deny the medical certfication, a notification letter will be send to the candidate, and conclusion report will be send to all members.

1.3.4.2 Follow up Action

(a) All applicants should follow the GCAA requirement and/or recommendation for the medical certificate to be valid. The applicant must refer to GCAA endorsement letter to determine how frequently the required information must be submitted. The continuation request must include the applicant's periodic medical exam, and all required additional information as specified by GCAA letter and/or the pertinent section of the Licensing Department.

(b) A person who has been granted a variation based on a special medical flight or practical test need not take the test again during later physical examinations unless the GCAA Aeromedical section

determines or has reason to believe that the physical deficiency has or may have degraded to a degree to require another special medical flight test or practical test.

1.3.5 Withdrawal of medical certificate with special authorisation

(a) If non -compliance is reported then the variation granted to a person who does not meet the applicable medical provisions may be withdrawn at any time if:

(b) There is adverse change in the holder's medical condition;

(c) The holder fails to comply with a statement of functional limitations or operational limitations issued as a condition of certification;

(d) Public safety would be endangered by the holder's exercise of his licence privileges;

(e) The holder fails to provide medical information reasonably needed by the GCAA for certification.

(f) If the variation is withdrawn under paragraph above the following procedures apply:

(g) The holder of the variation will be served a letter of withdrawal, stating the reason for the action;

(h) By not later than 60 days after the service of the letter of withdrawal, the holder of the variation may request, in writing, the GCAA for review of the decision to withdraw. The request for review may be accompanied by supporting medical evidence;

(i) Within 60 days of receipt of a request for review, a written final decision either affirming or reversing the decision to withdraw will be issued; and a medical certificate rendered invalid pursuant to a withdrawal,

1.3.6 Renewal medical certification authorisation

The AME is permitted to re-issue a medical certificate under the provisions of a variation or Alternative means of compliance to an applicant who has a medical condition that is disqualifying under current medical provisions. The Applicant must again show to the satisfaction of the AME that the duties authorised by the class of medical certificate applied for can be performed without endangering public safety in order to obtain a new medical certificate under current medical provisions. An Examiner's decision or determination is subject to review by the GCAA aeromedical section.

AMC 1 MED.B.005 General

Drug screening

(a) All licence holder shall not exercise the privileges of their licence and related rating while under the influence of any psychoactive substance which might render them unable to safely and properly exercise these privileges.

(b) All licence holders shall not engage in any problematic use of substances

(c) All applicants for GCAA Medical certification are required to undertake a drug screening test as part of their initial medical assessment.

(d) The screening shall consist of a urine sample for amphetamines, barbiturates, benzodiazepines, cannabis, opiates and other psychoactive substances.

GM 1 MED.B.005 General

1. Drug Screening

Pre-employment drug screening is a GCAA requirement for applicants in all classes, it can be done in any recognised laboratory, however the AME is responsible to make sure that the required protocol for collection of the specimen and its transport to the laboratory have been followed, and the confidentiality of the applicants has been respected.

The medical certificate should not be issued unless the AME got a negative screening result.

1.1 List of the drugs to be tested

Test for the following drugs or classes of drugs is required:

(a) Cannabis (Marijuana) and its metabolites

(b) Cocaine and its metabolites

(c) Opiates with Morphine and metabolites.

(d) Amphetamines

(e) Barbiturates

(f) Benzodiazepines

(g) Methadone

(h) Phencyclidine (PCP).

In addition to any Drug testing deemed necessary by the AME on suspicion, or post accident situations.

1.2 Procedure for drug testing

(a) Prior to conducting any test, the AME should ask the employee to declare the use of any medication he may be taking which could affect the result of the test.

(b) The testing area identified to carry out the tests will be such so as to protect the dignity of the employee as far as possible, and the collection site should be secure from any water sources, and the water in the toilet bowl should be blue; also there should be no soap, disinfectants, cleaning agents, or other possible adulterants are present.

(c) A trained tester, or nurse, familiar with the testing procedure will discuss the process of the test and answer any questions the employee may have.

(d) The urine specimen collected will be provided to the testing laboratory.

1.3 Procedure of Review of Test Results

(a) Should an AME receive notification of a positive initial/screening result, he/she should notify the applicant involved, that the urine has tested positive, and further confirmation test is needed on the initial urine sample. The AME should not request the applicant to repeat the test unless he got the GCAA permission to do.

(b) If the confirmation test is positive the AME should deny the certification and send the applicant along with test result to the GCAA approved MRO.

(c) The Applicants shall be advised to submit medical documentation that may support a legitimate use of the medication and that such information will be reviewed only by the Medical Review Officer to determine whether the individual is illicitly using an otherwise illegal drug.

(d) As a positive laboratory test result does not automatically identify an employee of job applicant as an illegal drug user; review of results by MRO is mandatory. The Medical Review Officer (MRO) fulfils this function by reviewing the results with the donor and protecting the confidential nature of the donor's medical information. The Medical Review Officer may choose to conduct employee medical interviews, review employee medical history, or review any other, relevant biomedical factors. The Medical Review Officer must review all medical records made available by the tested employee when a confirmed positive test could have resulted from legally prescribed medication. Evidence to justify a positive result may include, but is not limited to:

1. A valid prescription; or

2. Verification from the individual's physician verifying a valid prescription.

(a) If the Medical Review Officer determines there is no justification for the positive result, such result will then be considered a verified positive test result. The Medical Review Officer shall immediately contact the appropriate management official/or the AME upon obtaining a verified positive test result; to recommend or take administrative action.

(f) The AME/or the company shall inform such applicant that in accordance with GCAA regulations, a confirmed presence of an illegal drug in the applicant's urine precludes the company from hiring the applicant.

(g) If the applicant, declare the use of any prescribed or over the counter medication on GCAA Medical Application form; which may affect the test result, the test shall be done to confirm the use of the declared medicine at the safe level prescribed. In these cases the AME must request for professional opinion regarding the reason of taking such a medication, and whether the applicant can be off that medicine which is incompatible for flying duties. And at this stage the opinion of MRO shall be requested to confirm the legitimate use of the medication. And if the AME satisfied with these reports, he should defer the case to the GCAA, along with the medical application, MRO report and specialist report for final aeromedical disposition.

(h) The GCAA may ask the applicant to repeat the urine test in different laboratory, or may ask for more advance test, hair test, if there was suspicion of drug addiction.

Section 2 - Specific requirements for class 1 medical certificates

AMC1 MED.B.010 Cardiovascular system

(a) Examination

Exercise electrocardiography

An exercise ECG when required as part of a cardiovascular assessment should be symptom limited and completed to a minimum of Bruce Stage IV or equivalent.

(b) General

1. Cardiovascular risk factor assessment

    (i) Serum lipid estimation is case finding and significant abnormalities should require review, investigation and supervision by the AeMC or AME in consultation with the licensing authority.

    (ii) An accumulation of risk factors (smoking, family history, lipid abnormalities, hypertension, etc.) should require cardiovascular evaluation by the AeMC or AME in consultation with the licensing authority.

2. Cardiovascular assessment

    (i) Reporting of resting ECG should be done by the AME and reporting of exercise electrocardiograms should be by an Approved Cardiologist

    (ii) The extended cardiovascular assessment should be undertaken at an AeMC or may be delegated to an approved cardiologist.

(c) Peripheral arterial disease

If there is no significant functional impairment, a fit assessment may be considered by the licensing authority, provided:

1. applicants without symptoms of coronary artery disease have reduced any vascular risk factors to an appropriate level;
2. applicants should be on acceptable secondary prevention treatment;
3. exercise electrocardiography is satisfactory. Further tests may be required which should show no evidence of myocardial ischaemia or significant coronary artery stenosis.

(d) Aortic aneurysm

1. Applicants with an aneurysm of the infra-renal abdominal aorta may be assessed as fit with a multi-pilot limitation by the licensing authority. Follow-up by ultra-sound scans or other imaging techniques, as necessary, should be determined by the licensing authority.
2. Applicants may be assessed as fit by the licensing authority after surgery for an infra-renal aortic aneurysm with a multi-pilot limitation at revalidation if the blood pressure and cardiovascular assessment are satisfactory. Regular cardiological review should be required.

(e) Cardiac valvular abnormalities

1. Applicants with previously unrecognised cardiac murmurs should undergo evaluation by a cardiologist and assessment by the licensing authority. If considered significant, further investigation should include at least 2D Doppler echocardiography or equivalent imaging.

2. Applicants with minor cardiac valvular abnormalities may be assessed as fit by the licensing authority. Applicants with significant abnormality of any of the heart valves should be assessed as unfit.

3. Aortic valve disease

    (i) Applicants with a bicuspid aortic valve may be assessed as fit if no other cardiac or aortic abnormality is demonstrated. Follow-up with echocardiography, as necessary, should be determined by the licensing authority.

    (ii) Applicants with aortic stenosis require licensing authority review. Left ventricular function should be intact. A history of systemic embolism or significant dilatation of the thoracic aorta is disqualifying. Those with a mean pressure gradient of up to 20 mmHg may be assessed as fit. Those with mean pressure gradient above 20 mmHg but not greater than 40 mmHg may be assessed as fit with a multi-pilot limitation. A mean pressure gradient up to 50 mmHg may be acceptable. Follow-up with 2D Doppler echocardiography, as necessary, should be determined by the licensing authority. Alternative measurement techniques with equivalent ranges may be used.

    (iii) Applicants with trivial aortic regurgitation may be assessed as fit. A greater degree of aortic regurgitation should require a multi-pilot limitation. There should be no demonstrable abnormality of the ascending aorta on 2D Doppler echocardiography. Follow-up, as necessary, should be determined by the licensing authority.

4. Mitral valve disease

    (i) Asymptomatic applicants with an isolated mid-systolic click due to mitral leaflet prolapse may be assessed as fit.

    (ii) Applicants with rheumatic mitral stenosis should normally be assessed as unfit.

    (iii) Applicants with uncomplicated minor regurgitation may be assessed as fit. Periodic cardiolological review should be determined by the licensing authority.

    (iv) Applicants with uncomplicated moderate mitral regurgitation may be considered as fit with a multi-pilot limitation if the 2D Doppler echocardiogram demonstrates satisfactory left ventricular dimensions and satisfactory myocardial function is confirmed by exercise electrocardiography. Periodic cardiological review should be required, as determined by the licensing authority.

    (v) Applicants with evidence of volume overloading of the left ventricle demonstrated by increased left ventricular end-diastolic diameter or evidence of systolic impairment should be assessed as unfit.

(f) Valvular surgery

Applicants with cardiac valve replacement/repair should be assessed as unfit. A fit assessment may be considered by the licensing authority.

1. Aortic valvotomy should be disqualifying.

2. Mitral leaflet repair for prolapse is compatible with a fit assessment, provided post-operative investigations reveal satisfactory left ventricular function without systolic or diastolic dilation and no more than minor mitral regurgitation.

3. Asymptomatic applicants with a tissue valve or with a mechanical valve who, at least 6 months following surgery, are taking no cardioactive medication may be considered for a fit assessment with a multi-pilot limitation by the licensing authority. Investigations which demonstrate normal valvular and ventricular configuration and function should have been completed as demonstrated by:

    (i) a satisfactory symptom limited exercise ECG. Myocardial perfusion imaging/stress echocardiography should be required if the exercise ECG is abnormal or any coronary artery disease has been demonstrated;

    (ii) a 2D Doppler echocardiogram showing no significant selective chamber enlargement, a tissue valve with minimal structural alteration and a normal Doppler blood flow, and no structural or functional abnormality of the other heart valves. Left ventricular fractional shortening should be normal.

    Follow-up with exercise ECG and 2D echocardiography, as necessary, should be determined by the licensing authority.

4. Where anticoagulation is needed after valvular surgery, a fit assessment with a multi-pilot limitation may be considered after review by the licensing authority. The review should show that the anticoagulation is stable. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range.

(g) Thromboembolic disorders

Arterial or venous thrombosis or pulmonary embolism are disqualifying whilst anticoagulation is being used as treatment. After 6 months of stable anticoagulation as prophylaxis, a fit assessment with multi-pilot limitation may be considered after review by the licensing authority. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range. Pulmonary embolus should require full evaluation. Following cessation of anti-coagulation therapy, for any indication, applicants should require review by the licensing authority.

(h) Other cardiac disorders

1. Applicants with a primary or secondary abnormality of the pericardium, myocardium or endocardium should be assessed as unfit. A fit assessment may be considered by the licensing authority following complete resolution and satisfactory cardiological evaluation which may include 2D Doppler echocardiography, exercise ECG and/or myocardial perfusion imaging/stress echocardiography and 24-hour ambulatory ECG. Coronary angiography may be indicated. Frequent review and a multi-pilot limitation may be required after fit assessment.

2. Applicants with a congenital abnormality of the heart, including those who have undergone surgical correction, should be assessed as unfit. Applicants with minor abnormalities that are functionally unimportant may be assessed as fit by the licensing authority following cardiological assessment. No cardioactive medication is acceptable. Investigations may include 2D Doppler echocardiography, exercise ECG and 24-hour ambulatory ECG. Regular cardiological review should be required.

(i) Syncope

1. Applicants with a history of recurrent vasovagal syncope should be assessed as unfit. A fit assessment may be considered by the licensing authority after a 6-month period without recurrence provided cardiological evaluation is satisfactory. Such evaluation should include:

(i) a satisfactory symptom limited 12 lead exercise ECG to Bruce Stage IV or equivalent. If the exercise ECG is abnormal, myocardial perfusion imaging/stress echocardiography should be required;

(ii) a 2D Doppler echocardiogram showing neither significant selective chamber enlargement nor structural or functional abnormality of the heart, valves or myocardium;

(iii) a 24-hour ambulatory ECG recording showing no conduction disturbance, complex or sustained rhythm disturbance or evidence of myocardial ischaemia.

2. A tilt test carried out to a standard protocol showing no evidence of vasomotor instability may be required.

3. Neurological review should be required.

4. A multi-pilot limitation should be required until a period of 5 years has elapsed without recurrence. The licensing authority may determine a shorter or longer period of multi-pilot limitation according to the individual circumstances of the case.

5. Applicants who experienced loss of consciousness without significant warning should be assessed as unfit.

(j) Blood pressure

1. The diagnosis of hypertension should require cardiovascular review to include potential vascular risk factors.

2. Anti-hypertensive treatment should be agreed by the licensing authority. Acceptable medication may include:

(i) non-loop diuretic agents;

(ii) ACE inhibitors;

(iii) angiotensin II/AT1 blocking agents (sartans);

(iv) slow channel calcium blocking agents;

(v) certain (generally hydrophilic) beta-blocking agents.

3. Following initiation of medication for the control of blood pressure, applicants should be re-assessed to verify that the treatment is compatible with the safe exercise of the privileges of the licence held.

(k) Coronary artery disease

1. Chest pain of uncertain cause should require full investigation.

2. In suspected asymptomatic coronary artery disease, exercise electrocardiography should be required. Further tests may be required, which should show no evidence of myocardial ischaemia or significant coronary artery stenosis.

3. Evidence of exercise-induced myocardial ischaemia should be disqualifying.

4. After an ischaemic cardiac event, including revascularisation, applicants without symptoms should have reduced any vascular risk factors to an appropriate level. Medication, when used to control cardiac symptoms, is not acceptable. All applicants should be on acceptable secondary prevention treatment.

(i) A coronary angiogram obtained around the time of, or during, the ischaemic myocardial event and a complete, detailed clinical report of the ischaemic event and of any operative procedures should be available to the licensing authority:

(A) there should be no stenosis more than 50 % in any major untreated vessel, in any vein or artery graft or at the site of an angioplasty/stent, except in a vessel subtending a myocardial infarction. More than two stenoses between 30 % and 50 % within the vascular tree should not be acceptable;

(B) the whole coronary vascular tree should be assessed as satisfactory by a cardiologist, and particular attention should be paid to multiple stenoses and/or multiple revascularisations;

(C) an untreated stenosis greater than 30 % in the left main or proximal left anterior descending coronary artery should not be acceptable.

(ii) At least 6 months from the ischaemic myocardial event, including revascularisation, the following investigations should be completed (equivalent tests may be substituted):

(A) an exercise ECG showing neither evidence of myocardial ischaemia nor rhythm or conduction disturbance;

(B) an echocardiogram showing satisfactory left ventricular function with no important abnormality of wall motion (such as dyskinesia or akinesia) and a left ventricular ejection fraction of 50 % or more;

(C) in cases of angioplasty/stenting, a myocardial perfusion scan or stress echocardiogram, which should show no evidence of reversible myocardial ischaemia. If there is any doubt about myocardial perfusion in other cases (infarction or bypass grafting) a perfusion scan should also be required;

(D) further investigations, such as a 24-hour ECG, may be necessary to assess the risk of any significant rhythm disturbance.

(iii) Follow-up should be annually (or more frequently, if necessary) to ensure that there is no deterioration of the cardiovascular status. It should include a review by a cardiologist, exercise ECG and cardiovascular risk assessment. Additional investigations may be required by the licensing authority.

(A) After coronary artery vein bypass grafting, a myocardial perfusion scan or equivalent test should be performed if there is any indication, and in all cases within 5 years from the procedure.

(B) In all cases, coronary angiography should be considered at any time if symptoms, signs or non-invasive tests indicate myocardial ischaemia.

(iv) Successful completion of the 6-month or subsequent review will allow a fit assessment with a multi-pilot limitation.

(A) For revalidation, applicant may be assessed as fit if the cardiology evaluation is satisfactory.

(l) Rhythm and conduction disturbances

1. Any significant rhythm or conduction disturbance should require evaluation by a cardiologist and appropriate follow-up in the case of a fit assessment. Such evaluation should include:

(i) exercise ECG to the Bruce protocol or equivalent. Bruce stage 4 should be achieved and no significant abnormality of rhythm or conduction, or evidence of myocardial ischaemia should be demonstrated. Withdrawal of cardioactive medication prior to the test should normally be required;

(ii) 24-hour ambulatory ECG which should demonstrate no significant rhythm or conduction disturbance;

(iii) 2D Doppler echocardiogram which should show no significant selective chamber enlargement or significant structural or functional abnormality, and a left ventricular ejection fraction of at least 50 %.

Further evaluation may include (equivalent tests may be substituted):

(iv) 24-hour ECG recording repeated as necessary;

(v) electrophysiological study;

(vi) myocardial perfusion imaging;

(vii) cardiac magnetic resonance imaging (MRI);

(viii) coronary angiogram.

2. Applicants with frequent or complex forms of supra ventricular or ventricular ectopic complexes require full cardiological evaluation.

3. Ablation

Applicants who have undergone ablation therapy should be assessed as unfit. A fit assessment may be considered by the licensing authority following successful catheter ablation and should require a multi-pilot limitation for at least one year, unless an electrophysiological study, undertaken at a minimum of 2 months after the ablation, demonstrates satisfactory results. For those whose long-term outcome cannot be assured by invasive or non-invasive testing, an additional period with a multi-pilot limitation and/or observation may be necessary.

4. Supraventricular arrhythmias

Applicants with significant disturbance of supraventricular rhythm, including sinoatrial dysfunction, whether intermittent or established, should be assessed as unfit. A fit assessment may be considered by the licensing authority if cardiological evaluation is satisfactory.

(i) Atrial fibrillation/flutter

(A) For initial applicants, a fit assessment should be limited to those with a single episode of arrhythmia which is considered by the licensing authority to be unlikely to recur.

(ii) Applicants with asymptomatic sinus pauses up to 2.5 seconds on resting electrocardiography may be assessed as fit if exercise electrocardiography, echocardiography and 24-hour ambulatory ECG are satisfactory.

(iii) Symptomatic sino-atrial disease should be disqualifying.

5. Mobitz type 2 atrio-ventricular block

Applicants with Mobitz type 2 AV block should require full cardiological evaluation and may be assessed as fit in the absence of distal conducting tissue disease.

6. Complete right bundle branch block

Applicants with complete right bundle branch block should require cardiological evaluation on first presentation and subsequently:

(i) for initial applicants under age 40, a fit assessment may be considered by the licensing authority. Initial applicants over age 40 should demonstrate a period of stability of 12 months;

(ii) for revalidation, a fit assessment may be considered if the applicant is under age 40. A multi-pilot limitation should be applied for 12 months for those over age 40.

7. Complete left bundle branch block

   A fit assessment may be considered by the licensing authority:

   (i) Initial applicants should demonstrate a 3-year period of stability.

   (ii) For revalidation, after a 3-year period with a multi-pilot limitation applied, a fit assessment without multi-pilot limitation may be considered.

   (iii) Investigation of the coronary arteries is necessary for applicants over age 40.

8. Ventricular pre-excitation

   A fit assessment may be considered by the licensing authority:

   (i) Asymptomatic initial applicants with pre-excitation may be assessed as fit if an electrophysiological study, including adequate drug-induced autonomic stimulation reveals no inducible re-entry tachycardia and the existence of multiple pathways is excluded.

   (ii) Asymptomatic applicants with pre-excitation may be assessed as fit at revalidation with a multi-pilot limitation.

9. Pacemaker

   Applicants with a subendocardial pacemaker should be assessed as unfit. A fit assessment may be considered at revalidation by the licensing authority no sooner than 3 months after insertion and should require:

   (i) no other disqualifying condition;

   (ii) a bipolar lead system, programmed in bipolar mode without automatic mode change of the device;

   (iii) that the applicant is not pacemaker dependent;

   (iv) regular follow-up, including a pacemaker check; and

   (iv) a multi-pilot limitation.

10. QT prolongation Prolongation of the QT interval on the ECG associated with symptoms should be disqualifying. Asymptomatic applicants require cardiological evaluation for a fit assessment and a multi-pilot limitation may be required.

GM 1 MED.B.010 Cardiovascular system

1. Cardiovascular risk assessment:

Indication:

(a) Hypertension

(b) Hyperlipidaemia

(c) Diabetes

(d) Smoking

(e) Obesity, and lack of exercise

(f) Adults 45–74 years without known history of CVD.

(g) The Metabolic Syndrome (hypertension, hyperlipidaemia, insulin resistance and truncal obesity) carries a significantly increased risk of such event.

(h) Obstructive Sleep Apnoea

1.1 Method for CVD risk assessment

(a) Test required for assessment include but are not limited to Lipid profile ,Check for blood pressure, random blood glucose and HBA1c and ultrasensitive CRP

(b) The AME should use internationally recognised calculators/charts/or score cards for the estimation of CHD.

The preferred calculator for GCAA medical examination is as below; this calculator considers all the risks factors – the modifiable and non-modifiable:

http://www.patient.co.uk/doctor/Primary-Cardiovascular-Risk-Calculator.htm

1.2 Assessing and management of the cardiovascular risks

(a) Risk group less than 10% risk over 10 years

The licence may be issued without limitation once all modifiable risk factors have been discussed with the applicant. A management strategy should be detailed in the reports to the licensing authority.

(b) Risk group 10-20% over 10 years

1. Modifiable risk factors should be addressed in conjunction with adjustment of current or the addition of approved prevention medications e.g. Statins

2. After the control of the modifiable risk factors, if the calculated risk remains in the intermediate zone, further cardiac evaluation by an approved cardiologist shall be required.

3. If cardiac evaluation rules out significant risk of Ischemic heart events, the medical certificate may be issued with OML restriction, and annual approved cardiology follow up.

(c) Risk group > 20% over 10 years, or presence of diabetes , left ventricular hypertrophy , symptomatic carotid disease (CVA,TIA) ,or Peripheral Vascular Disease including Aneurysm, Abnormal Tests – ABIs)

1. The licence holder should be grounded

2. An approved cardiac consultation will be required with further cardiac evaluation to rule out any significant risk of ischemic heart events changes.

3. All the modifiable risk factor should be discussed with the applicant and a management strategy detailed in the report to the licensing authority.

4. On satisfactory the medical certificate may be issued with OML restriction and cardiology follow up as detailed by the approved cardiologist.

2. Valvular disorders

2.1 Bicuspid Aortic Valve

(a) Provided no other abnormality (2D Doppler flow rate <2.0 m/sec) is present a fit assessment without limitation may be considered for all the classes of medicals.

(b) If the aortic root is > 4.0cm, a multi-pilot (Class 1 'OML' limitation required, for class II require a safety pilot (Class 2 'OSL') limitation. Annual review by a cardiologist is required for all the classes of medical.

(c) An aortic root diameter >4.5 cm is disqualifying for all classes.

2.2 Aortic Stenosis

On diagnosis of the condition, the AME should inform the GCAA and advise applicant not to exercise the privileges of his licence until cleared to do so by GCAA. This will be considered once investigations have been completed and results assessed as satisfactory to the GCAA.

2.2.1 Investigations required for recertification are:

(a) Routine aviation medical examination

(b) Approved cardiologist's assessment and risk calculation

(c) Standard 24 lead ECG

(d) Doppler echocardiogram

(e) other investigations as necessary

2.2.2 Aeromedical Disposition

(a) A fit assessment requires an intact left ventricular function and depends mainly on the mean pressure gradient, but other factors such as left ventricular hypertrophy, reduced left ventricular diastolic function, reduced left ventricular ejection fraction, aortic valve calcification, reduced valve

area and aortic regurgitation will need to be considered. Applicants with a minor aortic stenosis (mean pressure gradient of up to 20 mm Hg) may be assessed as fit without restriction.

(b) Applicants with a mild aortic stenosis (mean pressure gradient above 20 and of up to 40 mm Hg) may be assessed as with a multi-pilot (Class 1 'OML') limitation.

(c) Applicants with a more severe aortic stenosis (mean pressure gradient of up to 50 mm Hg) may be assessed as with a multi-pilot (Class I 'OML') limitation.

(d) Applicant with mean pressure gradient above 50 mm Hg cannot be certified for class 1.

(e) No significant left ventricular hypertrophy (free wall and septal thickness > 1,1 cm) nor dilatation, (left ventricular diastolic diameter > 5,6 cm in dominant stenosis, > 6,0 cm in dominant regurgitation) should be present for recertification.

(f) A history of transient ischaemic attack (TIA) shall disqualify for all classes of certification.

2.2.3 Subsequent Reviews

At annual intervals:

(a) Routine aviation medical examination

(b) Approved cardiologist review

(c) Standard 24 lead ECG

(d) Doppler echocardiogram

2.3 Aortic regurgitation

Aortic regurgitation is well tolerated and even moderate regurgitation may be present for very many years. On diagnosis of the condition, the AME should inform the GCAA and advise the applicant not to exercise the privileges of his licence until cleared to do so by GCAA. This will not be considered until all investigations have been completed and results assessed as satisfactory to the GCAA.

2.3.1 Investigations required for recertification are:

(a) Routine aviation medical examination

(b) Approved cardiologist's assessment

(c) Standard 24 lead ECG

(d) Doppler echocardiogram

(e) Exercise ECG to Bruce protocols or equivalent

(f) Minor regurgitation in the absence of aortic root disease may be compatible with fit assessment for all the classes.

(g) Co-existent dilatation of the aortic root >4.5 cm is disqualifying.

(h) Evidence of volume overloading of the left ventricle (left ventricular end diastolic dilatation >6,0 cm) is disqualifies although minor increase in the left ventricular end diastolic diameter may be acceptable with Class 1.

2.3.2 Subsequent Reviews

At annual intervals:

(a) Routine aviation medical examination

(b) Approved cardiologist review

(c) Standard 24 lead ECG

(d) Doppler echocardiogram

3. Thromboembolic disorders

Investigations required for recertification are:

i. Routine aviation medical examination

ii. Approved cardiologist's assessment should include all of the following whether first presentation or recurrent thromboembolic disease

    1. Detailed family history of thromboembolic disease
    2. Assessment for Neoplasia
    3. PT/PTT
    4. Anti-thrombin III
    5. Protein S & C
    6. Factor V Leiden

iii. Doppler ultrasound

iv. Ventilation and perfusion (V/Q) scanning if indicated

v. Pulmonary angiography (may be required for pulmonary thromboembolism, to ensure that there is no concomitant pulmonary hypertension (>30 mmHg systolic)

Note: the only anticoagulant approved for class 1 use is warfarin.

4. Hypertension

High blood pressure (Hypertension) is defined as elevated systolic and or diastolic readings on at-least 3 different Occasions, a minimum 30 minutes apart, or on 24 hour ambulatory BP monitoring. Once a licence

holder is diagnosed with high blood pressure, they should be temporarily unfit or medical certificate issue should be delayed.

4.1 Evaluation required for recertification

1. Documentation of good blood pressure control e.g. follow up 24 hr. BP check
2. Documentation of an absence of end organ damage
3. Initial evaluation should include
    i. Lipid levels- cholesterol, LDL, HDL, Total cholesterol/ HDL ratio, Triglycerides
    ii. Random blood glucose and HBA1cUrea and electrolytes,
    iii. Full blood count,
    iv. Liver function tests
    v. Carbohydrate deficient transferrin
    vi. Urine micro albumin
    vii. Standard 12 lead ECG
    viii. Cardiac echo
    vi. Fundoscopic examination
    ix. Ambulatory blood pressure monitoring should always be employed in cases of doubt (or for diagnosis of borderline hypertension or suspected white coat hypertension)
    x. Exclusion of secondary causes including an assessment of the risk of obstructive sleep apnoea
    xi. Any pathology detected will require specialist evaluation and risk mitigation

4.2 Subsequent review annually

i. Lipid levels- cholesterol, LDL, HDL, Total cholesterol/ HDL ratio,

ii. Triglycerides

iii. Random blood glucose and HBA1c

iv. Urea and electrolytes

v. Standard 12 lead ECG

vi. Urine micro albumin level

vii. Comment on evidence for hypertensive Fundoscopic findings

viii. Documentation of good blood pressure control over the preceding year e.g. data from home readings or three monthly clinic blood pressure checks

4.3 Aeromedical consideration

- The diagnosis of uncontrolled hypertension is disqualifying
- Unrestricted waiver is possible if
- adequate control of blood pressure is achieved (BP<140/90)
- There is no evidence of end-organ damage,
- There is no significant medication side effects
- There is absence of other cardiovascular risk factors.

Note: A restricted waiver to multi-pilot operations (Class 1 'OML') may be required if there is evidence of end-organ damage; and /or presence of other cardiovascular risk factors.

5. Rhythm and conduction disturbances

5.1.1 Atrial Fibrillation investigations for recertification are:

i. Routine aviation medical examination

ii. An approved cardiologist's assessment which must include the following tests (thyroid function(Thyroid function test, full blood count, liver function tests and carbohydrate deficient transferrin)

iii. Exercise ECG

iv. 24 hours ECG, the following criteria should be met:

1. If in sinus rhythm, 48 hours of ambulatory ECG on 3 separate occasions separated by an interval of 4 weeks each should demonstrate the absence of atrial fibrillation (having presented as a single attack, or in paroxysmal form) and of significant pauses (>2,5 sec) during the daytime.
2. In the presence of established atrial fibrillation, the shortest RR interval should not exceed 300 ms and the longest 35 sec. The longest pause on recapture of sinus rhythm should not exceed 2.5 sec. Ventricular arrhythmia should not exceed an aberrant beat count >2% of the total QRS count with no complex forms.
3. Paroxysmal Atrial Fibrillation, as above plus the longest pause on recapture of sinus rhythm should not exceed 2.5 sec whilst awake.

v. Echocardiogram shall show no significant atrial chamber enlargement, or significant structural or functional abnormality, a Left Ventricular Ejection Fraction of 50 % or more and the left atrial internal diameter should not exceed 4.5 cm.

vi. Further tests may be requested if needed according to cardiologist decision.

5.1.2 Aeromedical Disposition

i. Where a single attack of atrial fibrillation with a defined cause if found and an applicant has satisfactorily completed the above investigations, they may be assessed as fit with a multi-pilot (Class 1 'OML') limitation, and class II may fly with OSL restriction. Cabin crew can fly without restriction.

ii. If suppression of the attacks are incomplete, or if/when atrial fibrillation becomes established, the GCAA decision will be based on an individual assessment of symptoms during an attack, the rate, experience and other relevant information. If the reports are acceptable to the GCAA, a fit assessment with a multi-pilot ('OML') limitation for class 1 applications, or an OSL restriction for class II applicants and cabin crew with an unrestricted licence may be issued

iii. If atrial fibrillation is present, the rate shall be controlled (i.e. resting rate <90 beats/mm, on exercise < 220 beats/mm) and any QRST abnormality should be attributable to medication or heart rate only.

iv. The management of atrial fibrillation includes the attempt to suppress attacks (i.e. of paroxysmal disturbance of rhythm) or to control the heart rate when the rhythm disturbance is established.

5.1.3 Subsequent reviews every six months for a minimum of 2 years shall include:

i. Routine aviation medical examination

ii. An approved cardiologist review

iii. 24 hour ECG monitoring

5.2 Atrial Flutter

5.2.1 Investigations for recertification shall include:

i. Routine aviation medical examination

ii. An approved cardiologist's assessment including the following blood tests (thyroid function test, full blood count, liver function tests and carbohydrate deficient transferrin)

iii. Exercise ECG to Bruce protocols

iv. 24 hour ECG monitoring:

v. Echocardiogram

vi. Further tests may be requested at the discretion of the cardiologist

5.2.2 Aeromedical Disposition

i. If drug treatment-which is acceptable for flying duties-, is required, there must be adequate rate control, without significant side effects, and there should be no underlying structural heart disease. If these conditions are satisfied, the applicant may be assessed fit with limitation.

ii. In an atrial flutter circuit, the successfully ablated applicant may be assessed as fit with limitation, no sooner than 6 months following intervention.

5.2.3 Subsequent Reviews every six months:

i. Routine aviation medical examination

ii. Approved cardiologist review

iii. 24 hour ECG monitoring

5.3 Wolff-Parkinson-White (WPW) syndrome

5.3.1 Investigations required for recertification are:

i. Routine aviation medical examination

ii. Approved cardiologist's assessment to exclude history of arrhythmia (Tachycardia or Atrial Fibrillation)

iii. Exercise ECG to Bruce protocols and symptom limited, for at least 9 minutes and no sustained arrhythmia.

iv. Electrophysiological studies must include an isoprenaline/adrenaline infusion sufficient to increase the sinus rate by 25%, and the following criteria shall be met:

    1. HV interval < 70 ms

    2. No inducible atrio-ventricular re-entry tachycardia An antegrade refractory period of accessory pathway >300 ms(>250 msec with -delta interval during atrial fibrillation >300 ms (>250 msec with isoprenaline) Cycle length with 1:1 accessory pathway conduction >300 ms (>250 msec with isoprenaline)

    3. No evidence of multiple pathways

v. 24 hour ECG without significant rhythm or conduction disturbance

vi. Echocardiogram showing a normal heart structure and normal LV and RV function

vii. Further tests may be requested if needed according to the cardiologist decision

5.3.2 Aeromedical Disposition

i. Certification with limitation may be granted, if satisfactory reports are submitted by the cardiologist.

ii. The presence of atrioventricular re-entrant tachycardia or paroxysmal atrial fibrillation in the presence of an accessory pathway is disqualifying.

5.3.3 Subsequent Reviews every six months:

i. Routine aviation medical examination

ii. Approved cardiologist review

iii. 24 hour ECG monitoring

6. Post Radiofrequency ablation of WPW syndrome

6.1.1 Recertification

6.1.2 Investigations required for recertification are:

i. Routine aviation medical examination

ii. Approved cardiologist's assessment, without a history of arrhythmia (Tachycardia or Atrial Fibrillation)

iii. Exercise ECG to Bruce protocols up to stage 4, symptom limited, should be achieved and no significant abnormality of rhythm or conduction nor evidence of myocardial ischaemia shall be demonstrable. Withdrawal of cardio-active medication prior to the test should be considered.

iv. 24 hour ECG without evidence of significant rhythm or conduction disturbance

v. Echocardiogram -no significant selective chamber enlargement or significant structural or functional abnormality and left ventricular ejection fraction of at least 50%

vi. Electrophysiological studies-no evidence of accessory pathway, conduction pre or post isoprenaline/adrenaline

vii. Further tests may be requested if needed according to cardiologist decision

6. Implantation of Cardiac Pacemaker

6.1 Investigations for recertification are

i. Routine aviation medical examination (history of syncope, family history of sudden cardiac death or Brugada syndrome)

ii. An approved cardiologist's assessment

iii. 24 hour ECG without significant rhythm or conduction disturbance

iv. Echocardiogram

v. Exercise ECG-to Bruce stage VI showing no significant abnormality or evidence of myocardial ischemia.

6.2 Aeromedical disposition

If the applicant does not have any other disqualifying conditions, and is not pacemaker dependent, and if the pacemaker used is bipolar lead system, then he may be recertificated with Class I restricted licence. Class II and Cabin crew Class may be recertificated with unrestricted licence if they fulfil all the above requirements.

The use of Anti-tachycardia pacemaker and automatic implantable system defibrillating systems are disqualifying

6.3 Subsequent investigations

i. Routine aviation medical examination every six months

ii. Annual approved cardiologist's assessment with pacemaker check and 24 hour ECG.

AMC1 MED.B.015 Respiratory system

(a) Examination

1. Spirometry

Spirometric examination is required for initial examination. An FEV1/FVC ratio less than 70 % at initial examination should require evaluation by a specialist in respiratory disease.

2. Chest radiography

Posterior/anterior chest radiography may be required at initial, revalidation or renewal examinations when indicated on clinical or epidemiological grounds.

(b) Chronic obstructive airways disease

Applicants with chronic obstructive airways disease should be assessed as unfit. Applicants with only minor impairment of their pulmonary function may be assessed as fit.

(c) Asthma

Applicants with asthma requiring medication or experiencing recurrent attacks of asthma may be assessed as fit if the asthma is considered stable with satisfactory pulmonary function tests and medication is compatible with flight safety. Systemic steroids are disqualifying.

(d) Inflammatory disease

For applicants with active inflammatory disease of the respiratory system a fit assessment may be considered when the condition has resolved without sequelae and no medication is required.

(e) Sarcoidosis

1. Applicants with active sarcoidosis should be assessed as unfit. Investigation should be undertaken with respect to the possibility of systemic, particularly cardiac, involvement. A fit assessment may be considered if no medication is required, and the disease is investigated and shown to be limited to hilar lymphadenopathy and inactive.

2. Applicants with cardiac sarcoid should be assessed as unfit.

(f) Pneumothorax

1. Applicants with a spontaneous pneumothorax should be assessed as unfit. A fit assessment may be considered if respiratory evaluation is satisfactory:

    (i) 1 year following full recovery from a single spontaneous pneumothorax;

    (ii) at revalidation, 6 weeks following full recovery from a single spontaneous pneumothorax, with a multi-pilot limitation and modification of all risk factors;

    (ii) following surgical intervention in the case of a recurrent pneumothorax provided there is satisfactory recovery.

2. A recurrent spontaneous pneumothorax that has not been surgically treated is disqualifying.

3. A fit assessment following full recovery from a traumatic pneumothorax as a result of an accident or injury may be acceptable once full absorption of the pneumothorax is demonstrated.

(g) Thoracic surgery

1. Applicants requiring major thoracic surgery should be assessed as unfit for a minimum of 3 months following operation or until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable licence(s).

2. A fit assessment following lesser chest surgery may be considered by the licensing authority after satisfactory recovery and full respiratory evaluation.

(h) Sleep apnoea syndrome/sleep disorder

Applicants with unsatisfactorily treated sleep apnoea syndrome should be assessed as unfit.

GM1 MED.B.015 Respiratory system

1. Asthma

1.1 Aeromedical disposition

(a) Initial Class 1 applicants or Class 1 holders with a new diagnosis of asthma require review by a GCAA approved pulmonologist

(b) If the applicant for class 1/2 is diagnosed to have mild asthma,

1. Is well controlled,

2. Has a normal chest examination,

3. No adverse history,

4. Has a satisfactory spirometry,

5. Has a fall in FEV1 of less than or equal to 10% on Bronchial Reactivity Test,

6. Requires inhaled corticosteroids less than 800µg day,

7. Then he may be assessed as fit class I or/2

(c) If the applicant is diagnosed to have

1. Moderately controlled asthma,

2. Has no adverse history,

3. Has satisfactory spirometry,

4. Has a fall in FEV1 of 11-16% on Bronchial reactivity test,

5. or inhaled corticosteroids equal to or greater than 800 µg day,

Then he may be assessed as fit with a restricted class 1 licence or unrestricted class 2.

i. If the applicant for class 1 is diagnosed with sub-optimally controlled asthma: with no adverse history, satisfactory spirometry, fall in FEV1 of 16-20% on Bronchial Reactivity Test, he will not be considered fit until the required criteria's are met. Class 2 applicant may be certified with OSL restriction.
ii. Applicant for class 1/2 with uncontrolled asthma: Fall in FEV1 of greater than 20% on Bronchial Reactivity Test AND/OR adverse history will not be medically certified.
iii. For renewal of class I and 2, if symptoms are, mild, infrequent, symptoms well controlled on medication, no symptoms in flight, no wheeze on examination, the AME can issue the medical certificate based on his clinical examination.
iv. All the classes of medical examinations, the AME should not renew the medical certificate, if he detects;

- The symptoms worsen/or wheeze on chest examination
- Increase in frequency of emergency room, hospital, or outpatient visits.
- The FEVI is < 70% predicted value.
- The applicant requires 3 or more medications for stabilisation.
- The applicant is using steroid in dosage equivalent to more than 20mg of prednisone per day.

1.2 Disqualifying features of asthma in aviators:

- Severe asthma likely to reduce operational efficiency
- Brittle asthmatics
    - Repeated courses of oral steroids
    - Poor control on inhaled cortical-steroids
    - Hospital/A&E attendance
    - Frequent exacerbations
    - Those requiring UNACCEPTABLE medication eg:Oral steroids
    - Oral theophylline
    - Steroid-sparing agents e.g. methotrexate, cyclosporins, azathioprine

1.3 Required Investigations:

- Standard Spirometry (Lung Function Tests)

- Bronchial Reactivity Test: either 6 minute free running test (see separate Bronchial Reactivity Test Form) or a chemical challenge with histamine/metacholine/mannitol

1.4 Acceptable Treatment:

In accordance with British Thoracic Society (BTS) guidelines - The following medication is ACCEPTABLE for certification:

- Inhaled β2 agonists
- Inhaled cortico-steroids
- Long acting β2 agonists
- Leukotriene receptor antagonists
- Inhaled cromoglycate

2. Pulmonary Tuberculosis certification protocol:

i. Initial applicants for or holders of a Class 1 /2 class certificates with a history of previous pulmonary tuberculosis may be assessed as fit provided that:

   a. A recognised course of medication has been completed.

   b. Chest radiography shows no significant lung damage.

   c. Normal pulmonary function testing is demonstrated.

ii. Applicants for Class 1/ 2 class with active disease or undergoing any treatment shall be assessed as 'temporarily unfit' for at least the early part of their therapy because of the symptoms, side effects associated with treatment, and the need for close follow up.

iii. Following the initial part of the therapy, if the applicant for class I shows a satisfactory report from his treating physician that he doesn't have any significant side effects of the medication and he doesn't carry any risk of transmission of the disease, he can return to flying with restricted certificate till he completes the course of treatment with close AME monitoring.

iv. Following the initial part of the therapy, if the applicant for class II showed satisfactory report from his treating physician that he doesn't have any significant side effects of the medication and he doesn't carry any risk of transmission of the disease, he can be granted unrestricted licence with close follow up with his AME and /treating physician.

v. Following completion of therapy, assessment of fitness shall be performed as detailed in b, c above.

vi. Applicants with substantial lung damage may have bronchiectasis, be susceptible to recurrent episodes of chest infection and therefore require careful evaluation. Applicants with persistent cavities also require careful evaluation. Large cavities are likely to be associated with considerable degree of lung damage and applicants will be unlikely to be assessed as fit.

vii. If the applicant is taking prophylaxis treatment with Isonizid because of contact with an infected person, or because of recent TB skin test conversion, he may continue flying duties without compromising flight safety as long as no side effects are apparent,. In these cases the AME/or treating physician should follow all patients on prophylaxis clinically, ordering appropriate laboratory studies when indicated.

3. Sarcoidosis

3.1 Requirement for initial certification of applicant with a history of Sarcoidosis confined to hilar lymphadenopathy

i. Serial CXR (hilar lymphadenopathy should be re-examined and shown to be non progressive and no evidence of pulmonary shadowing)

ii. Gas transfer factor should be stable.

iii. Pulmonary function tests should be normal

iv. Cardiology review to include:

- Resting and exercise ECG to Bruce protocols(symptom limited)
- 24-hour ambulatory ECG monitoring- without significant rhythm or conduction disturbances
- Echocardiogram
- Myocardial scintigraphy or perfusion scanning (MRI) may be needed if any cardiac abnormality detected.

3.2 Aeromedical Disposition

- If all the above tests are satisfactory including no cardiac Sarcoidosis; no evidence of other organ involvement and no medication are prescribed a class I OML restriction. Class II and may be given unrestricted licences.
- Cardiac Sarcoidosis is disqualifying
- Applicants with a diagnosis of active Sarcoidosis shall be assessed as unfit.
- Initial applicants with a history of multi-system Sarcoidosis shall be assessed as unfit.
- Previous history of systemic involvement (skin, bone, eye, central nervous system and lung parenchyma), the applicant will be given permanent restricted licence.

3.3 Subsequent review every six months for class I and annual review for class II, for the first two years

i. Routine aviation medical examination

ii. Approved cardiologist's assessment

iii. 24 hour ECG.

iv. Exercise ECG to Bruce protocols

3.4 Subsequent review every twelve months for class I

If satisfactory follow up for two years with no previous history of systemic involvement, the applicant for class I can be given unrestricted licence and continue to have annual follow up.

4. SPONTANEOUS OR IDIOPATHIC PNEUMOTHORAX

4.1 Assessment guidelines for initial applicants

Applicants for initial certification with a history of a single spontaneous pneumothorax may be assessed as fit provided that:

i. One year has elapsed since full recovery after adequate treatment.

ii. Full respiratory evaluation is normal.

iii. No bullae are discovered on chest radiography, CT scans, or other medical imaging technique.

iv. The bullae have been treated by surgery and no smoking status has been confirmed.

4.2 Assessment guidelines for renewal of a medical certificate:

Certificate holders who develop a spontaneous pneumothorax must be assessed as temporarily unfit until full resolution has occurred. They may be assessed as fit for certification provided that;

i. Full re-expansion of the lung has taken place.

ii. A minimum of six weeks has elapsed since the occurrence.

iii. Full respiratory evaluation is normal.

iv. No bullae are discovered on chest radiography, CT scan, or other medical imaging technique.

v. Restricted licence for all the classes of medical certificate holders for one year from the original occurrence.

vi. All modifiable risk factors including smoking have been addressed

4.3 Acceptable surgical treatment

Includes thoractomy, over sewing of apical blebs, parietal pleurectomy and Video Assisted Thoracic Surgery (VATS) pleurectomy.

Recertification can be undertaken six weeks after a VATS pleurectomy. For other procedures, recertification may require a longer grounding period.

If 6 weeks following successful surgical treatment with a normal post-operative chest radiograph, unrestricted initial Class 1 and 2 medical certification can be considered.

5. Obstructive Sleep Apnea Screening Guidelines

5.1 General

The prevalence of Obstructive Sleep Apnoea Syndrome (OSA) in men aged 30 to 65 years is around 1 to 4% and in women around 0.5 to 2%. There is objective evidence for 1.3 to 12 folds increase in accident rates among patients with OSA. There is strong evidence that OSA can cause hypertension and OSA may be the commonest treatable cause of secondary hypertension. It is also associated with Ischaemic Heart Disease (including an increased risk of sudden cardiac death during the night hours), Hyperglycaemia and Cerebrovascular Disease.

Screening for and treating Obstructive Sleep Apnoea Syndrome will potentially lead to improved quality of life, reduced cardiovascular mortality and reduced accident rates (both motor vehicle and aviation related).

5.2 Definitions

An Apnoea is defined as an absence of tidal volume for at least 10 seconds whilst a Hypopnoea is defined as a reduction in tidal volume of at least 50% for at least 10 seconds accompanied by at least a 4% decrease in oxygen saturation. Obstructive Sleep Apnoea Syndrome is generally defined as five or more apnoeas-hypopnoeas per hour of sleep (an Apnoea- Hypopnoea Index, AHI, of >5) accompanied by either excessive daytime sleepiness or two or more of the following: episodes of choking or gasping during sleep, recurrent awakenings, unrefreshing sleep, daytime fatigue or impaired concentration or memory. The severity of OSA is often reported as the AHI which correlates well with the clinical manifestations: AHI 5-15 = mild; AHI 15-30 = moderate; AHI >30 = severe.

55.3 Obstructive Sleep Apnoea protocol

5.3.1 OSA Screening is usually indicated in:

- History of Excessive Daytime Sleepiness
- History of Snoring
- Witnessed apnoea
- Resistant /uncontrolled Hypertension,
- Uncontrolled Diabetes,
- Metabolic Syndrome
- Obesity ,BMI> 35
- Significant weight gain(10% increase in total body weight)
- A high neck circumference
- Complaints of frequent nocturnal awakenings
- Complaints of difficulty concentrating
- Complaints of problems with memory
- Complaints of daytime sleepiness
- Complaints of fatigue
- Complaints of low mood
- Complaints of erectile dysfunction
- Stop Bang questionnaire score of ≥3
- Epworth score ≥10

5.3.2 Method of Objective screening:

i. Physical examination including, vital signs (blood pressure, pulse, respiration); height, weight, and body mass index (BMI); ear, nose, and throat including Mallampti score (ENT); thyroid assessment; cardiovascular; pulmonary assessment, and psychological assessment for presence of mood disorder.
ii. Neck Circumference corrected for height (as a percentage of predicted neck circumference for height) is a more useful predictor than general obesity or BMI. Neck Circumference measured in centimeters adjusted for hypertension (+4cm), habitual snoring (+3cm), reported choking or gasping most nights (+3cm) is a sensitive predictor

of Obstructive Sleep Apnoea. Adjusted Neck Circumference (ANC) < 48 &/or ANC 43-48 in the presence of other risk factors is indicative of specialist referral.

iii. The commonly used Epworth Sleepiness scale (ESS) is a simple validated measure of daytime sleepiness and has been shown to be both a reliable and consistent method of distinguishing those with potential sleep disorders from the normal population. Ideally it should be given to sleeping partners who can more accurately assess snoring and apnoeas. ESC of ≥10, considered indicative of pathological sleepiness and specialist referral is required.

iv. The use of STOP – BANG questionnaire which is more sensitive in moderate to severe OSA . Stop Bang questionnaire score of ≥3 is an indicative of sleep disorder which requires further assessment by specialist.

v. The gold standard diagnostic test is; nocturnal polysomnographic diagnostic testing (NPSG Sleep Study).

vi. When the diagnosis is suspected, the AME must refer the applicant to the sleep disorder study to confirm/or exclude the diagnosis of OSA. The initial decision on grounding the applicant prior to the specialist referral solely depends on the AME assessment of the case.

vii. The GCAA accepts the use of CPAP (Continuous Positive Airway Pressure) as an appropriate treatment for Obstructive Sleep Apnoea. The machine must have the ability for data capture ensure compliance. Other methods of treatment including dental splinting may be acceptable on reports showing adequate control of OSA on sleep study analysis and correct fitting and usage of the splints. Presence of any associated risk factors of Obesity, Hypertension, Thyroid disease, Diabetes Mellitus must be addressed and treated as per GCAA protocols in addition.

viii. The minimum grounding period of 2 weeks after starting CPAP treatment will be required before returning the applicant to aviation related safety duties. The pilot will be required to use the CPAP machine at least five hours during sleep, for more than 70% of the time. For dental splints, he will be required to use the splint for each and every sleep period. He may be returned to duty once the compliance with the treatment is established by Specialist review with no subjective symptoms and ESS < 10. The AME should refer the case to GCAA for Aeromedical section for reinstatement of the applicant.

ix. The GCAA will issue the medical certificate with OML restriction and follow up recommendation, which should include 6 monthly Specialist review and 3 monthly AME review in case of associated high BMI or other medical condition which require periodic review . For those managed with dental splinting, they would require a Dental assessment in addition.

x. Once granted the restricted medical certificate the applicant will be instructed not to perform aviation safety sensitive job if they experience any problems with the treatment or

he suspects his sleepiness/ snoring symptoms returning, or at any time obtains a self-reported ESS of > 10.

xi. The GCAA will not consider removal of the OML restriction, until the time when the applicant's medical condition satisfactory controlled, and all associated risk factors are eliminated or controlled.

xii. The applicant will be required to be revaluated by the Specialist in case of documented change in his body weight of 10% value increase or decrease.

AMC1 MED.B.020 Digestive system

(a) Oesophageal varices

Applicants with oesophageal varices should be assessed as unfit.

(b) Pancreatitis

Applicants with pancreatitis should be assessed as unfit pending assessment. A fit assessment may be considered if the cause (e.g. gallstone, other obstruction, medication) is removed.

(c) Gallstones

1. Applicants with a single asymptomatic large gallstone discovered incidentally may be assessed as fit if not likely to cause incapacitation in flight.

2. An applicant with asymptomatic multiple gallstones may be assessed as fit with a multi-pilot limitation.

(d) Inflammatory bowel disease

Applicants with an established diagnosis or history of chronic inflammatory bowel disease should be assessed as fit if the inflammatory bowel disease is in established remission and stable and that systemic steroids are not required for its control.

(e) Peptic ulceration

Applicants with peptic ulceration should be assessed as unfit pending full recovery and demonstrated healing.

(f) Abdominal surgery

1. Abdominal surgery is disqualifying for a minimum of 3 months. An earlier fit assessment may be considered if recovery is complete, the applicant is asymptomatic and there is only a minimal risk of secondary complication or recurrence.

2. Applicants who have undergone a surgical operation on the digestive tract or its adnexa, involving a total or partial excision or a diversion of any of these organs, should be assessed as unfit for a minimum period of 3 months or until such time as the effects of the operation

are no longer likely to interfere with the safe exercise of the privileges of the applicable licence(s).

AMC1 MED.B.025 Metabolic and endocrine systems

(a) Metabolic, nutritional or endocrine dysfunction

Applicants with metabolic, nutritional or endocrine dysfunction may be assessed as fit if the condition is asymptomatic, clinically compensated and stable with or without replacement therapy, and regularly reviewed by an appropriate specialist.

(b) Obesity

Applicants with a Body Mass Index 35 may be assessed as fit only if the excess weight is not likely to interfere with the safe exercise of the applicable licence(s) and a satisfactory cardiovascular risk review has been undertaken.

(c) Addison's disease

Addison's disease is disqualifying. A fit assessment may be considered, provided that cortisone is carried and available for use whilst exercising the privileges of the licence(s). Applicants may be assessed as fit with a multi-pilot limitation.

(d) Gout

Applicants with acute gout should be assessed as unfit. A fit assessment may be considered once asymptomatic, after cessation of treatment or the condition is stabilised on anti-hyperuricaemic therapy.

(e) Thyroid dysfunction

Applicants with hyperthyroidism or hypothyroidism should be assessed as unfit. A fit assessment may be considered when a stable euthyroid state is attained.

(f) Abnormal glucose metabolism

Glycosuria and abnormal blood glucose levels require investigation. A fit assessment may be considered if normal glucose tolerance is demonstrated (low renal threshold) or impaired glucose tolerance without diabetic pathology is fully controlled by diet and regularly reviewed.

(g) Diabetes mellitus

Subject to good control of blood sugar with no hypoglycaemic episodes:

1. applicants with diabetes mellitus not requiring medication may be assessed as fit;

2. the use of antidiabetic medications that are not likely to cause hypoglycaemia may be acceptable for a fit assessment with a multi-pilot limitation.

GM1 MED.B.025 Metabolic and endocrine systems

1. Benign Pituitary Tumors Class 1

- Applicants with symptoms and/or on first diagnosis should be assessed as unfit. A fit assessment can be considered subject to a satisfactory endocrinologist's report and visual fields assessment after 3 months of being stable on treatment.
- Annual follow-up with endocrinology report and visual fields is required.
- **Cabergoline** is used for the treatment of microprolactinomas. It is acceptable for any class of certification, providing the pilot has been stabilised on this medication for a period of not less than three months on the ground and has no adverse side-effects from the therapy.

2. Obesity

2.1 General Evaluation of Obesity at Aero-medical Examination

- Assessment of the overweight or obese person should begin with a careful history and physical examination.
- History should include:
- History of medication (use is an important aspects of the initial evaluation (corticosteroids, oestrogen, progesterone, testosterone or other anabolic/androgenic steroids).
- Family and social history are indicated (family history of obesity related disease)
- Smoking intake
- Alcohol consumption should be documented
- Activity level
- Dietary history and patterns of eating
- Exercise habits investigated.
- Sleep disturbance, snoring, sleep apnoea should be assessed
- Menstrual disturbances specifically symptoms related to polycystic ovarian syndromes
- Mood disorders
- The physical examination of an obese patient should evaluate
- They type of obesity- truncal, central etc.
- Waist circumference
- Hip to waist ratio
- Body fat composition
- Neck circumference
- The presence of a thyroid goitre
- Mallampti score
- Clinical assessment for hypothyroidism and hypercortisolism
- Discussion of the patient's cardiac risk factors is also appropriate.
- Review the applicant's previous medical record and performance of appropriate physical examination.

2.2 Defining the Nature of the Problem (Body Composition Tests)

2.2.1 The body mass index (BMI)

Body mass index is defined as the individual's body weight divided by the square of their Height. The formulas universally used in medicine produce a unit of measure of kg/m2.

2.2.2 Waist circumference and waist hip ratio

Waist circumference is the distance around the natural waist (just above the navel).
(The tape must be positioned mid-way between the top of the hip bone and the bottom of the rib cage).
The absolute waist circumference (>102 cm in men and >88 cm in women) or waist-hip ratio (>0.9 for men and >0.85 for women) are both used as measures of central obesity.
Waist hip ratio is calculated as follow, measure waist at narrowest part and measure the hip at widest part then divide waist /hip to get the ration

2.2.3 Body fat percentage

Body fat percentage is total body fat expressed as a percentage of total body weight. It is generally agreed that men with more than 25% body fat and women with more than 33% body fat are obese.

2.2.4 Neck circumference measurements

Screening for and treating Obstructive Sleep Apnea Syndrome will potentially lead to improved quality of life, reduced cardiovascular mortality and reduced accident rates

The neck circumference should be measured at a point just below the larynx (Adam's Apple) and perpendicular to the long axis of the neck. The applicant should look straight ahead during measurement, with shoulders down, and the tape will be as close to horizontal as anatomically feasible (the tape line in the front of the neck should be at the same height as the tape line in the back of the neck). Care should be taken so as not to involve the shoulder/neck muscles (trapezius) in the measurement

Neck Circumference measured in centimetres should be adjusted for hypertension (+4cm), habitual snoring (+3cm), reported choking or gasping most nights (+3cm) to get prediction of Obstructive Sleep Apnoea. (Refer to protocol of OSA)

2.3 Aeromedical Disposition

i. For the GCAA medical certification purpose the definition of obesity include:-

- A body mass index above 30 ,or
- A waist circumference over 102 cm, female 88cm, or
- A waist to hip ration of 0.9 male and 0.85 female, or
- Body fat content above 25% male and 32% female

ii. Obese applicant with incapacitation risk of >1%, must be grounded and enter a weight management program which should include dietary advice, an increased exercise regime and regular 3 monthly AME follow and should require an additional battery of tests to exclude the nutritional and metabolic disorders before issuing the medical certificate. The minimum tests required would be Lipid profile (total cholesterol, LDL, triglyceride level and HDL), random blood glucose estimation with HBA1c and calculation the overall risk of cardiovascular disease. A target weight reduction of at least 10 % their original weight over one year and all risk factors must be monitored and controlled.

iii. Obese applicants who are otherwise well and can exercise the privileges of a licence safely will be certificated without restriction.

iv. Obese Individual with OSA should be managed as per the protocol of OSA.

v. If the a class I candidate with BMI of 35 or more fails to lose weight over 6 months period, or even gain more weight, the GCAA may recommend further assessments with particular attention to his

competency in managing emergency situations and evacuation. Multi-pilot (Class I 'OML') limitation may be required.

vi. If the high BMI does not reflect obesity (e.g. muscular built), then other measurement to be used as guidelines with the BMI for more accurate assessment, such as body fat percentage.

vii. Failure to comply with any or all of these points may lead to permanent unfitness.

3. Thyroid disorders

i. Initial applicants with an established diagnosis of thyroid dysfunction will have the issue of their medical certificate deferred until acceptable reports have been received.

ii. A report from an endocrinologist will be required to confirm details of history, investigations, diagnosis and treatment, optimised thyroid function, no side-effects from either the disorder or the treatment and plans for follow-up care.

3.1 Hypothyroidism

Florid hypothyroidism requires a temporarily unfit status. The candidate may be considered for fit assessment if clinically asymptomatic, euthyroid and taking their prescribed approved medication. Annual endocrinological review is required by the GCAA.

Any changes in management, including medication changes, must be notified to the AME.

3.2 Hyperthyroidism

A hyperthyroid pilot is unfit for flying and must remain so until a stable euthyroid state has been attained. A fit assessment may be considered by the GCAA when the licence holder is clinically and biochemically euthyroid. The individual must be annually reviewed (to include TSH, T3, T4 estimation) to guard against recurrence or the development of hypothyroidism. The continued use of anti-thyroid drugs, if well tolerated, is consistent with aeromedical fitness.

Any changes in management will be notified to an AME.

Cases where eye involvement has occurred, an Extended Eye Examination is required before the candidate can be returned to flying to ensure satisfactory eye movements and no diplopia.

3.3 Thyroidectomy

Following thyroid surgery (complete or partial) the certificate holder will be assessed as unfit. A fit assessment can be made following full surgical recovery, and demonstrated stability of thyroid function.

A report from the specialist will be required confirming details of the surgery, recovery and ongoing treatment and confirmation of euthyroid state. Minimum follow up is annual blood test confirming euthyroid status.

3.4 Radioactive Iodine Treatment

The certificate holder will be assessed as unfit until all treatment is complete and a euthyroid state has been achieved. A report from the specialist will be required and should confirm details of treatment and follow-up

care including confirmation of euthyroid state. Minimum follow up is for an annual blood thyroid test confirming euthyroid status.

4. Diabetes Mellitus

4.1 Diagnostic criteria

	Fasting	2 hours post prandial
Normal <120 mg/100 ml	< 6.1 mmol/l < 110 mg/100ml	< 7.8 mmol/l < 140 mg/100ml
Impaired glucose regulation	>6.1 – 6.9 mmol/L or	>7.8 – 11 mmol/L
Diabetes Mellitus	> 7.0 mmol/l >120 mg/100ml	>=11.1 mmol/l >180 mg/100ml

4.2. Classification

Type 1 Insulin Dependent (IDDM)	Genetically associated with T-cell dependent auto immune disease and HLA factors. Very low or absent endogenous insulin. Liable to keto-acidosis. Onset typically under 30.
Latent Autoimmune Diabetes in Adults	LADA is defined as the presence of adult-onset diabetes with circulating islet antibodies but without an initial requirement for insulin therapy. Common features include age under 50, BMI <25, personal or family history of autoimmune disease. The majority of adults with diabetes, who had detectable GADAs (glutamate decarboxylase (GAD) antibody, require insulin treatment within 6 years of diagnosis.
Type 2 Non-insulin Dependent (NIDDM)	Related to obesity and familial tendency. Endogenous insulin always present and often hyperinsulinaemic with insulin resistance. Rarely if ever ketotic. Onset 40+ There is a non-obese sub-group which have different aethiology and family aggregation.

4.3 Complications

(a) Macro-angiopathic vascular damage in the coronary, cerebral and peripheral arteries, which can constitute a major aeromedical risk and it increases with the duration of the condition.

(b) Microangiopathy is associated with progressive retinal and renal damage.

(c) Neuropathy which is probably related to the long term effects of the metabolic abnormality and can involve motor, sensory and autonomic functions.

(d) Cataracts are more common in older patients with diabetes.

(e) colour vision changes.

Note: All complications tend to be found in long term diabetes, especially those which are poorly controlled, but can also appear early in the disease-retinopathy in particular can be an initial finding.

4.4 Management of Diabetes Mellitus

4.4.1 General:

In type 2 diabetes the first step in the management is a low calorie diet, weight reduction, exercise at least 150 minutes weekly and smoking cessation.

4.4.2 Certification

- Impaired glucose tolerance often represents a pre-diabetic state that may convert to the full condition at a rate of around 4% per year. Cases may need dietary treatment and will require prolonged and detailed follow-up in order to preserve aeromedical fitness in the long run. The AME must inform the licence holders about all possible outcome of this condition and must emphasise the importance of the regular follow up and weight loss. A target weight loss of 10% over 1 year is appropriate in most cases.

- Type 2 diabetics fully controlled on diet alone may be fit for unrestricted medical certificates, subject to detailed follow-up at periodic medical examinations or at least annually with acceptable blood investigations.
- Insulin use is disqualifying from all the classes of medical.
- The use of oral hypoglycemic drugs may be acceptable for flying duties with certain limitation with its use as a single agent (e.g. Biguanides, Thiazolidinedione or Alpha-glucosidase inhibitors and Sitagliptin).
- Combination of agents may be considered on a case by case basis, provided there is no evidence of hypoglycaemia.

4.4.3 Anti diabetic medications:

Medication	Class I and III	Class II and Cabin crew class
Biguanides	Yes, (without limitation)	Yes, (without limitations)
Alpha-glucosidase Inhibitors	Yes, (without limitation) if used as single therapy	Yes, (without limitations)if used as single therapy
Sulphonylureas	Not acceptable	Yes, with limitations
Pioglitazone	Acceptable if unable to tolerate Metformin on a case by case basis	Yes, when combined with a biguanide or sulphonylurea, with limitations
Repaglinide	Not acceptable	Not acceptable
Sitagliptin	Acceptable if unable to tolerate Metformin /or combination with Metforminon a case by case basis	Acceptable

4.4.4 Initial assessment

At the time of diagnosis of Type 2 Diabetes mellitus, the GCAA requires the following evaluations to be done:

- Careful examination to exclude common complications of diabetes including neuropathy
- HbA1c must be <7 %

- Blood Glucose must be reasonably controlled
- BMI level, and determine the desired goal (BMI of <25 is the target)
- Diabetes Mellitus must be treated as high risk for cardiovascular disease and all modifiable risk factors should be managed aggressively.
- Blood tests including HBA1c, renal function, liver function and lipids.
- A GCAA extended eye examination.
- ECG at the time of diagnosis
- An approved cardiologist consultation
- Urine microalbuminuria

1. If single medication is required to control blood glucose level
    - The licence holder must be grounded:
2. For Class I: 30 day ground trial to ensure good glycaemic control, minimal side-effects & a falling HbA1c or a HBA1c ＜7%
3. If single medication fails to adequately control blood glucose levels , and addition of other agent is required:
    - The licence holder must be grounded:
4. For Class 1: Minimum 30 day ground trial to ensure no hypoglycaemic episodes, no additional other side-effects, good glycaemic control, a falling HBA1c and or HbA1c <7%
5. To provide a complete record of blood glucose monitoring to AME - random daily record for a minimum 30 days ideally via a data card.

4.4.5 Follow up for cases of Type 2 diabetes mellitus

- Periodic review with an AME and careful examination to exclude common complications of diabetes.
- Blood glucose and HBA1c less than 7.5% undertaken at three monthly to check the control of diabetes.
- Regular BMI and body fat monitoring and a comment on reduction progress.
- Periodic tests including renal function, blood lipids and urinary tests for detecting early renal damage (microalbuminuria)
- Annual GCAA approved ophthalmologist review.
- CNS and foot examination for evidence of neuropathy; either by neurologist, family physician or AME.
- Approved Cardiology review.

AMC1 MED.B.030 Haematology

(a) Abnormal haemoglobin

Applicants with abnormal haemoglobin should be investigated.

(b) Anaemia

1. Applicants with anaemia demonstrated by a reduced haemoglobin level or haematocrit less than 32 % should be assessed as unfit and require investigation. A fit assessment may be considered in cases where the primary cause has been treated (e.g. iron or B12 deficiency) and the haemoglobin or haematocrit has stabilised at a satisfactory level.

2. Anaemia which is unamenable to treatment is disqualifying.

(c) Polycythaemia

Applicants with polycythaemia should be assessed as unfit and require investigation. A fit assessment with a multi-pilot limitation may be considered if the condition is stable and no associated pathology is demonstrated.

(d) Haemoglobinopathy

1. Applicants with a haemoglobinopathy should be assessed as unfit. A fit assessment may be considered where minor thalassaemia or other haemoglobinopathy is diagnosed without a history of crises and where full functional capability is demonstrated. The haemoglobin level should be satisfactory.

2. Applicants with sickle cell disease should be assessed as unfit.

(e) Coagulation disorders

Applicants with a coagulation disorder should be assessed as unfit. A fit assessment may be considered if there is no history of significant bleeding episodes.

(f) Haemorrhagic disorders

Applicants with a haemorrhagic disorder require investigation. A fit assessment with a multi-pilot limitation may be considered if there is no history of significant bleeding.

(g) Thrombo-embolic disorders

1. Applicants with a thrombotic disorder require investigation. A fit assessment with a multi-pilot limitation may be considered if there is no history of significant clotting episodes.

2. An arterial embolus is disqualifying.

(h) Disorders of the lymphatic system

Applicants with significant localised and generalised enlargement of the lymphatic glands and diseases of the blood should be assessed as unfit and require investigation. A fit assessment may be considered in cases of an acute infectious process which is fully recovered or Hodgkin's lymphoma or other lymphoid malignancy which has been treated and is in full remission.

(i) Leukaemia

1. Applicants with acute leukaemia should be assessed as unfit. Once in established remission, applicants may be assessed as fit.

2. Applicants with chronic leukaemia should be assessed as unfit. After a period of demonstrated stability a fit assessment may be considered.

3. Applicants with a history of leukaemia should have no history of central nervous system involvement and no continuing side-effects from treatment of flight safety importance. Haemoglobin and platelet levels should be satisfactory. Regular follow- up is required.

(j) Splenomegaly

Applicants with splenomegaly should be assessed as unfit and require investigation. A fit assessment may be considered when the enlargement is minimal, stable and no associated pathology is demonstrated, or if the enlargement is minimal and associated with another acceptable condition.

GM 1 MED.B.030 Haematology

1. Coagulation/Haemorrhagic disorders

1.1 Thrombocytopaenia

Applicants with a diagnosis of thrombocytopenia should be assessed as unfit. Medical certification is considered subject to a haematologist report acceptable to the Authority Medical Section. Platelet counts below 75 x 10¬9/l should be assessed as unfit.

1.2 Haemophilias

Applicants with a diagnosis of Haemophilia A (factor VIII deficient) or Haemophilia B (Factor IX deficient, Christmas disease) should be assessed as unfit. Medical certification is considered for applicants with a diagnosis of very mild forms with >30% coagulation factor subject to a haematologist report acceptable to the Authority Medical Section. History of spontaneous bleeding is not acceptable for medical certification.

1.3 Von Willibrand disease

Applicants with a diagnosis of Von Willibrand disease should be assessed as unfit. Medical certification is considered subject to a haematologist report acceptable to the Authority Medical Section confirming that the phenotype is mild, that there is no history of significant bleeding and that therapy is not required.

2. Thrombo-embolic disorders

2.1 Deep Venous Thrombosis (DVT), Pulmonary Embolism (PE) and use of Warfarin

Class 1 OML certification are possible provided that,

a. The applicant has recovered from the underlying condition or the condition has been stabilised and does not in itself preclude flying and

2. The total incapacitation risk of the medication, the condition for which anticoagulation is indicated and any other conditions is acceptable for the class of licence.

Prior to certification the INR should be demonstrated to be within the target range for 6 months (4 results at 2 monthly intervals) if on Warfarin and 2 monthly laboratory testing should be continued on an ongoing basis. If the INR varies considerably within the target range on the initial readings, a longer period of surveillance may be required.

Class 1 applicants will be required to measure their INR on a 'near patient' testing system (such as CoaguChek S) 12 hours prior to flight and only fly if the INR is within the target range. The INR should be recorded in the Log Book. The Log Book should be reviewed at each medical certificate revalidation examination and copies forwarded at the time of the licence issuance to the GCAA.

AMC1 MED.B.035 Genitourinary system

(a) Abnormal urinalysis

Investigation is required if there is any abnormal finding on urinalysis.

(b) Renal disease

1. Applicants presenting with any signs of renal disease should be assessed as unfit. A fit assessment may be considered if blood pressure is satisfactory and renal function is acceptable.

2. The requirement for dialysis is disqualifying.

(c) Urinary calculi

1. Applicants with an asymptomatic calculus or a history of renal colic require investigation.

2. Applicants presenting with one or more urinary calculi should be assessed as unfit and require investigation.

3. A fit assessment with a multi-pilot limitation may be considered whilst awaiting assessment or treatment.

4. A fit assessment without multi-pilot limitation may be considered after successful treatment for a calculus.

5. With residual calculi, a fit assessment with a multi-pilot limitation may be considered.

(d) Renal/urological surgery

1. Applicants who have undergone a major surgical operation on the urinary tract or the urinary apparatus involving a total or partial excision or a diversion of any of its organs should be assessed as unfit for a minimum period of 3 months or until such time as the effects of the operation are no longer likely to cause incapacity in flight. After other urological surgery, a fit assessment may be considered if the applicant is completely asymptomatic and there is minimal risk of secondary complication or recurrence.

2. An applicant with compensated nephrectomy without hypertension or uraemia may be considered for a fit assessment.

3. Applicants who have undergone renal transplantation may be considered for a fit assessment if it is fully compensated and tolerated with only minimal immuno- suppressive therapy after at least 12 months. Applicants may be assessed as fit with a multi-pilot limitation.

4. Applicants who have undergone total cystectomy may be considered for a fit assessment if there is satisfactory urinary function, no infection and no recurrence of primary pathology. Applicants may be assessed as fit with a multi-pilot limitation.

GM1 MED.B.035 Genitourinary system

1. Urine Testing

Urine testing is required at every examination to test for Proteins, Sugar, Blood or any other abnormal contents. If any abnormal contents are found in the urine the result should be interpreted in the proper perspective (e.g., the finding of blood in the urine of a menstruating female crew). However the test should be repeated after a suitable interval and results noted. If a simple urinary tract infection is diagnosed without any other complications treatment should be instituted. There is no need to delay the candidate's documents waiting for the infection to clear up however a note should be made to the effect that a U.T.I was diagnosed which was non consequential to the fitness of the candidate and treatment was dispensed. The required testing can be performed in the laboratory however the AME should be satisfied with the authenticity of the results.

Cases of positive urine for ketones in the presence of valid reason such as fasting, high protein diet, and in the presence of normal blood glucose, the result can be acceptable for the issuing medical certificate.

1.1 Haematuria

Significant haematuria is defined as:

- Any single episode of visible haematuria.
- Any single episode of symptomatic non visible haematuria (in the absence of a urinary tract infection (UTI) or other transient cause).
- Persistent asymptomatic non visible haematuria (in the absence of UTI or other transient cause). 'Persistent' is defined as: 2 out of 3 dipsticks positive for non visible haematuria.

1.1 Proteinuria

Trace proteinuria is acceptable except in the presence of trace haematuria. When trace proteinuria and trace haematuria are both present, a repeat test is indicated.

Urine protein: creatinine ratio (PCR) or albumin: creatinine ratio (ACR) is preferred. ACR has the greater sensitivity. Significant Proteinuria is defined as: ACR>30 or PCR>50

2. Chronic Renal Disease

Applicants require regular renal review. In the absence of nephrotic syndrome and its associated thrombotic potential, and in the absence of uncontrolled hypertension, unrestricted certification may be permitted. A creatinine clearance below 20ml/min is unacceptable for medical certification. An albumin level below 35g/l is also disqualifying.

3. Polycystic renal disease

The diagnosis of autosomal dominant polycystic kidney disease requires an OML for class 1 certificate holders. Berry aneurysms need to be excluded by means of Magnetic Resonance Angiography and cardiac valve disease (including aortic root dilatation) by means of an echocardiogram. Abdominal aortic aneurysm also needs to be excluded.

4. Urinary Calculi

4.1 Asymptomatic stone(s)

The existence of calculi may be completely unknown to the applicant and could be accidentally demonstrated during instrumental check-up performed for other reasons. In such cases, the GCAA may consider a fit assessment with a restricted licence for all the classes of certification for one year. After this period of documented freedom from symptoms and an urologist review (Radiological investigation, biochemistry, metabolic screen and any other relevant investigation) is satisfactory.

A fit assessment without a limitation may be considered by the GCAA for all the Classes with no evidence of renal calculi otherwise a restricted licence would be appropriate. If originally picked up by an ultrasound scan further ultrasound scans are required for every renewal and it should demonstrate no volume increase of calculi and no movement of calculi from their original position. If not initially found by ultrasound scan the low dose CT scan undertaken at 2 years and 7 years post index case would suffice as screening.

4.2 Residual stone(s)

A residual stone, or stones, may often be asymptomatic. If in the calyces or collecting system, they remain a hazard and should be cleared before the individual can be assessed as fit to fly. If the stone is parenchymal, then the hazard is minimal and the applicant may be considered fit with restricted medical certificates for Class I.

4.3 Recurrent renal colic

Recurrent renal colic when associated with calculi must be investigated. If a comprehensive urological examination indicates a condition susceptible to treatment and subsequent review over an extended period after treatment shows no change in volume or position of stone and no stone in the calyces or collecting system, and no recurrent of symptoms, the individual may be assessed as fit. Urological follow-up with adequate techniques shall be required by the GCAA for every renewal of medical certificate.

Note: Fit assessment of individuals with frequent or recurrent stone formation may be considered at an earlier stage with restricted licences and regular urologist assessment and follow up.

4.4 Previous history of uretric colic more than years

Applicant with history of documented renal colic more than 7 years ago can be assessed as fit without restriction if the urologist review with appropriate investigations reveals stone free and normal kidneys. If the investigation reveals residual stone the applicant will be assessed as fit with restricted medical certificates and he should have a regular urologist review. If he underwent successful treatment and the applicant remains asymptomatic he may be given unrestricted medical certificates.

5. Renal Transplant

Applicants who have undergone a renal transplant are assessed as unfit. Medical certification can be considered 12 months post-transplant. Renal function must be stable and blood pressure must be within normal limits. The use of approved anti-hypertensive drugs is permitted. Any steroid dosage must be below 10mg/day. Levels of anti-rejection drugs must be within therapeutic range to minimise side effects. Cardiovascular risk must be assessed by a cardiologist to include an exercise (stress) ECG. To maintain certification, applicants are required to provide a regular annual renal report. Class 1 holders require also require an annual cardiology assessment, including an exercise ECG. The Class 1 certificate will be restricted with OML

6. Acceptable treatment and medication for Erectile Dysfunction

Phosphodiesterase Type 5 (PDE5) inhibitors

The main aeromedical concerns are the side effect profile of these drugs which includes colour vision changes in the blue/green and purple spectrum and sudden hearing loss.

Generic name	trade name	Minimum time between dose and flying
Sidenafil	Viagra	12 hrs
Vardenafil	Levitra	12 hrs
Tadalafil	Cialis	36 hrs

Notes for pilots:

b. You should discuss the appropriate dose with your AME.

2. PDE5 inhibitors should never be taken in conjunction with any other medication without first discussing potential interactions with your AME.

3. Choose an extended off duty period to try the medication for the first time in case of side effects.

4. Side effects that are important for flying include changes in blood pressure, visual disturbance including a change in colour vision, headaches, musculoskeletal pain and a sustained erectile effect with the potential for distraction from the flying task.

5. You should not obtain this medication other than by prescription to ensure product quality. The contents of medication obtained in other ways, in particular over the internet, cannot be assured.

Apomorphine

12 hours should elapse after use before flying/controlling.

AMC1 MED.B.040 Infectious disease

(a) Infectious disease - General

In cases of infectious disease, consideration should be given to a history of, or clinical signs indicating, underlying impairment of the immune system.

(b) Tuberculosis

Applicants with active tuberculosis should be assessed as unfit. A fit assessment may be considered following completion of therapy.

(c) Syphilis

Acute syphilis is disqualifying. A fit assessment may be considered in the case of those fully treated and recovered from the primary and secondary stages.

(d) HIV infection

1. HIV positivity is disqualifying.

2. The occurrence of AIDS or AIDS-related complex is disqualifying.

(e) Infectious hepatitis

Infectious hepatitis is disqualifying. A fit assessment may be considered after full recovery.

GM1 MED.B.040 Infectious disease

1. Infectious Hepatitis

Jaundice, as a result of inflammation of the liver, may be caused by infections or toxic agents.

Active infectious hepatitis is incompatible with flying. Fit assessment may be considered by the AME in conjunction with the GCAA after full clinical recovery and normal liver function tests.

Note: Any form of chronic hepatitis (as indicated by serologic markers and /or objective evidence of liver function impairment) will be disqualifying for certification of all medical Classes.

1.1 Hepatitis B:

1.1.1 Acute hepatitis B is disqualifying. Certification may be considered upon full recovery (viral clearance).

- 1.1.2 Chronic hepatitis B – Certification may be considered in pilots in the 'immune tolerant' or 'inactive HBV carrier state'.

1.1.2.1 Pilots are required to submit a report from a liver specialist, to include:

- History of infection and Current symptoms;

- Stability of condition;
- Liver Function Tests;
- HBV serology;
- HBV DNA levels;
- Alphafoetoprotein (AFP);
- Report of ultrasound of the liver.

1.1.2.2 Requirement for treatment is disqualifying.

1.2 Hepatitis C

1.2.1 Applicant with HCV-antibody positive and HCV-PCR is considered unfit for certification recertification may be considered for Class I with restricted medical certificate.

1.2.2 Pilots are required to submit a report from a liver specialist, to include:

- History of infection;
- Current symptoms including any CNS effects;
- Stability of Condition;
- Liver Function Tests;
- HCV Serology;
- HCV RNA and genotype;
- Report of ultrasound of the liver including biopsy results if available.

1.2.3 Requirement for treatment is disqualifying; certification may be considered following successful treatment (sustained viral response).

AMC1 MED.B.045 Obstetrics and gynaecology

(a) Gynaecological surgery

An applicant who has undergone a major gynaecological operation should be assessed as unfit for a period of 3 months or until such time as the effects of the operation are not likely to interfere with the safe exercise of the privileges of the licence(s) if the holder is completely asymptomatic and there is only a minimal risk of secondary complication or recurrence.

(b) Severe menstrual disturbances

An applicant with a history of severe menstrual disturbances unamenable to treatment should be assessed as unfit.

(c) Pregnancy

1. A pregnant licence holder may be assessed as fit with a multi-pilot limitation during the first 26 weeks of gestation, following review of the obstetric evaluation by the AeMC or AME who should inform the licensing authority.

2. The AeMC or AME should provide written advice to the applicant and the supervising physician regarding potentially significant complications of pregnancy.

AMC1 MED.B.050 Musculoskeletal system

(a) An applicant with any significant sequela from disease, injury or congenital abnormality affecting the bones, joints, muscles or tendons with or without surgery requires full evaluation prior to a fit assessment.

(b) In cases of limb deficiency, a fit assessment may be considered following a satisfactory medical flight test or simulator testing.

(c) An applicant with inflammatory, infiltrative, traumatic or degenerative disease of the musculoskeletal system may be assessed as fit provided the condition is in remission and the applicant is taking no disqualifying medication and has satisfactorily completed a medical flight or simulator flight test. A limitation to specified aircraft type(s) may be required.

(d) Abnormal physique, including obesity, or muscular weakness may require medical flight or flight simulator testing. Particular attention should be paid to emergency procedures and evacuation. A limitation to specified aircraft type(s) may be required.

AMC1 MED.B.055 Psychiatry

(a) Psychotic disorder

A history, or the occurrence, of a functional psychotic disorder is disqualifying unless a cause can be unequivocally identified as one which is transient, has ceased and will not recur.

(b) Organic mental disorder

An organic mental disorder is disqualifying. Once the cause has been treated, an applicant may be assessed as fit following satisfactory psychiatric review.

(c) Psychotropic substances

Use or abuse of psychotropic substances likely to affect flight safety is disqualifying.

(d) Schizophrenia, schizotypal or delusional disorder

Applicants with an established schizophrenia, schizotypal or delusional disorder should only be considered for a fit assessment if the licensing authority concludes that the original diagnosis was inappropriate or inaccurate or, in the case of a single episode of delirium, provided that the applicant has suffered no permanent impairment.

(e) Mood disorder

An established mood disorder is disqualifying. After full recovery and after full consideration of an individual case a fit assessment may be considered, depending on the characteristics and gravity of the mood disorder. If a stable maintenance psychotropic medication is confirmed, a fit assessment should require a multi-pilot limitation.

(f) Neurotic, stress-related or somatoform disorder

Where there is suspicion or established evidence that an applicant has a neurotic, stress- related or somatoform disorder, the applicant should be referred for psychiatric opinion and advice.

(g) Personality or behavioural disorder

Where there is suspicion or established evidence that an applicant has a personality or behavioural disorder, the applicant should be referred for psychiatric opinion and advice.

(h) Disorders due to alcohol or other substance use

1. Mental or behavioural disorders due to alcohol or other substance use, with or without dependency, are disqualifying.

2. A fit assessment may be considered after a period of two years documented sobriety or freedom from substance use. At revalidation or renewal a fit assessment may be considered earlier with a multi-pilot limitation. Depending on the individual case, treatment and review may include:

(i) In-patient treatment of some weeks followed by:

(A) review by a psychiatric specialist; and

(B) ongoing review including blood testing and peer reports, which may be required indefinitely.

(i) Deliberate self-harm

A single self-destructive action or repeated acts of deliberate self-harm are disqualifying. A fit assessment may be considered after full consideration of an individual case and may require psychiatric or psychological review. Neuropsychological assessment may also be required.

GM1 MED.B.055 Psychiatry

1. Major Depression

1.1 Protocol for licensing pilots with Major Depression

(a) Initial diagnosis of a Depressive episode (according to ICD 10/or DSM V criteria) and treatment must be initiated by a GCAA approved Psychiatrist.

(b) Baseline Clinical Psychologist assessment must be done by GCAA approved Psychologist at diagnosis as a baseline analysis. The Psychometric testing to include Hamilton Score if depressed or Becks Anxiety Inventory for Anxiety. Additional tests at the discretion of the Approved GCAA Psychologist.

(c) Baseline blood tests to exclude co-morbid Drug and Alcohol misuse including a urine drug screen, full blood count, liver function tests, thyroid function tests and carbohydrate deficient transferrin

(d) The treatment options include Cognitive Behavioural Therapy (CBT), and or Selective Serotonin Re-uptake Inhibitors (SSRI's). The SSRI's allowed to be used are Citalopram, Escitalopram, Sertraline and Fluoxetine. Other treatment options must be assessed on individual basis.

(e) Initial grounding should be for at least four weeks post commencement of treatment. This period to:

- Check for potential side effects
- Improvement in the condition
- Stability

(f) The pilot will be reviewed monthly by the treating Psychiatrist and AME with a Hamilton rating score or Becks anxiety inventory

(g) Once stable and there is absence of any side effects confirmed by the treating Psychiatrist, the AME will arrange a psychological assessment if deemed necessary and a functional simulator assessment. The simulator assessment will follow a standardised protocol to ensure safe handling of the aircraft in all conditions.

(h) On completion of all the tests to a satisfactory level, a second Psychiatrist evaluation will be arranged.

(i) The AME will send the following reports to the GCAA:

i) Initial psychiatrist reports with all details of the case as per GCAA form.
ii) Initial psychologist assessment including the result of psychometric test.
iii) Monthly follow up of the case from the first Psychiatrist and the AME.
iv) Second psychometric test result after stability of the condition
v) The second psychiatrist evaluation of the condition after stabilisation of the condition.
vi) simulator test result

(j) The GCAA will evaluate the reports and determine the fitness of the applicant. Class 1 may be granted medical certificate with OML restriction.

(k) After returning to flying duties the pilot must ground himself if he feels a worsening of his condition or cognitive functioning

(l) After returning to flying duties and being treated, the pilot must be evaluated every month by GCAA Approved Psychiatrist, Psychologist or Senior AME. The review must include Hamilton score if depressed, if the score is above 8, the pilot should be grounded for further assessment and treatment.

(m) The AME must also review the Applicant who returns to flying duties on treatment every month to confirm the stability of his medical condition. Any change in his condition must immediately be evaluated by Psychiatrist.

(n) Any decline in cognitive function detected on routine flying (by Colleague or Supervisor) or during Simulator check must necessitate immediate grounding and Psychiatric re-evaluation

(o) Any suicidal ideation during the course of stability will necessitate grounding and further Psychiatric re-evaluation

(p) Evidence of non-compliance with treatment or ignorance of Psychiatric or AME reviews, necessitates immediate grounding.

(q) Once CBT treatment has finished, Pilot should be reviewed on monthly basis by AME and 3 monthly by the Psychiatrist, and if after at least six months there are no further areas of concern, the GCAA will convene a second Aeromedical evaluation board, at the request of the AME, to reassess the Pilot's condition to remove the OML restriction.

(r) Follow up should continue as directed by the Psychiatrist and AME which may be indefinitely.

(s) For Pilots completing SSRIs treatment, a four week ground trial is required to assess any withdrawal symptoms from cessation of treatment. The psychiatrist should liaise with the AME regarding the timing of this

(t) Once successful withdrawal has occurred, a report to be sent to the GCAA recommending return to flying with OML off medication. The Pilot will be subjected to monthly AME or Psychiatric review.

(u) After minimum of 6 month flying with satisfactory Psychiatric and AME reviews, a full report recommending removal of OML restriction to be forwarded to the GCAA for their consideration. Second Psychiatrist evaluation may be required by the GCAA.

(v) Follow up should continue as directed by the Psychiatrist and AME which may be indefinitely.

1.2 Cognitive Simulator assessment

(a) Simulator assessment to be done between 3-5 am during Cognitive/ Circadian lows.

(b) The focus of the evaluation is to assess the pilot's cognitive and decision making skills during periods of high workload to the level of (Company).

(c) A comparison of the current cognitive skill level for the pilot with his skill level prior to his illness is recommended whenever applicable.

(d) This simulator should be conducted under 'day' and 'night' conditions to follow the current PPC scenario - which would confirm that the pilot meets the regulatory standards;

(e) In addition the pilot should conduct a Manual Handling Simulator where the pilot would be required to operate the simulator without the use of auto pilot, flight director or auto thrust. This exercise is designed to check a pilot's instrument scan as well as his capacity, airmanship and awareness. The exercise should include rapid role reversals in bank and pitch to test for dizziness;

(f) The final part of the simulator should be a manually flown single engine ILS, which would check capacity, awareness and alertness.

1.3 Specification for Psychiatric report

(a) Applicant details

(b) History of presenting complaint

(c) Current neurovegetative signs and symptoms

(d) Past psychiatric history

(e) Substance abuse history

(f) Family psychiatric history

(e) Medical History

(g) Social history

(h) Career history

(i) Forensic history

(j) Mental status examination

(k) Diagnosis

(l) Treatment plan

(m) Follow up requirements

(n) Prognosis

(o) Fitness assessment requirement

1.4 Psychiatric report specification

Refer to LIC-MED- o34 form.

1.5 Bipolar affective disorders

This disorder is characterised by two or more episodes in which the patient's mood and activity levels are significantly disturbed, this disturbance consisting on some occasions of an elevation of mood and increased energy and activity (hypomania or mania) and on others of a lowering of mood and decreased energy and activity (depression). (i.e.hypomanic, manic, depressed or mixed).

Bipolar Disorder is disqualifying for all the classes of medicals.

2. Neurotic, stress-related and somatoform disorders

2.1 Phobic anxiety disorders

The essential feature of this disorder is marked and persistent fear of clearly, circumscribed objects or situations. Exposure to the phobic stimulus almost invariably provokes an immediate anxiety response. The GCAA may grant aeromedical certification where an applicant's specific phobia is unrelated to the aviation environment or unlikely to affect aviation adversely.

2.1 Panic Disorder

The essential feature here is recurrent attacks of severe anxiety (panic) which are not restricted to any particular situation or set of circumstances and are unpredictable. There is often secondary fear of dying, losing control or going mad. The dominant symptoms, as with other anxiety disorders, include palpitations, chest pain, choking sensations, dizziness and feelings of unreality (de-personalisation or de-realisation). Attacks occurs suddenly, may be unpredictable and usually build to maximum within 10-15 minutes. The GCAA will not grant aeromedical certification to an individual who suffers non-specific or unpredictable panic attacks.

2.3 Obsessive compulsive disorders

The essential feature here is that of recurrent obsessional thoughts or compulsive acts.

Obsessional thoughts are ideas, images or impulses that enter the individual's mind again and again in a stereotyped form. They are almost invariably distressing and the patient often tries unsuccessfully to resist them. They are, however, recognised as his/her own thoughts, even though they are involuntary and often repugnant. Compulsive acts or rituals are stereotype behaviours which are repeated again and again. They are not inherently enjoyable nor do they result in the completion of inherently useful tasks. Their function is to prevent some objectively unlikely event which he/she fears might involve harm. This behaviour is recognised by the patient as pointless or ineffectual, and repeated attempts may be made to resist Anxiety is almost invariably present. If the compulsive acts are resisted the anxiety gets worse.

2.4 Generalised anxiety disorder

The anxiety that is generalised and persistent but not restricted to, or even strongly predominating in any particular environmental circumstances. The symptoms are variable but include complaints of persisting nervousness, trembling, muscular tension, sweating, light headedness, palpitations, dizziness and epigastric discomfort. Fears that the individual or a relative will shortly become ill or have an accident are frequently expressed. The clinical course is chronic and fluating.

2.5 Reaction to severe stress and adjustment disorders

2.5.1 Acute stress disorder

That is a transient disorder that develops in an individual without any other apparent mental disorder in response to exceptional physical and mental stress and which usually peaks after 2- 5 days and resolve within a month. The GCAA will not usually grant medical certification while the individual is experiencing an acute reaction. Once the condition has resolved, return to flying duties is likely.

2.5.2 Post traumatic stress disorder (PTSD)

This arises as delayed or protracted response to a stressful event or situation of a brief or long duration, of an exceptional threatening or catastrophic nature which is likely to cause pervasive distress in almost anyone. The disorders in this section are thought to arise always as a direct consequence of acute severe stress or continued trauma. These disorders can be regarded as maladaptive responses to severe or continued stress, in that they interfere with successful coping mechanisms and therefore lead to problems of social functioning.

Predisposing factors, such as personality traits (e.g. compulsive, asthenic) or previous history of neurotic illness may lower the threshold for the development of the syndrome or aggravate its course but they are

neither necessary nor sufficient to explain its occurrence. Typical features include episodes of repeated reliving of the trauma in intrusive memories (“flashbacks”), dreams or nightmares, occurring against the persisting background of a sense of “numbness” and emotional blunting, detachment from other people, unresponsiveness to surroundings, anhedonia and avoidance of activities and situations reminiscent of the trauma.

It usually starts with autonomic hyperarousal with hypervigilance and enhanced startle reaction and insomnia.

Anxiety and depression are commonly associated with the above symptoms and signs, and suicidal ideation is not infrequent. The onset follows the trauma with a latency period that may range from a few weeks to months. The course is fluctuating but recovery can be expected in the majority of cases. In a small proportion of cases the condition may follow a chronic course over many years with eventual transition to an enduring personality change.

The use of beta blockade and anti-depressive medications, together with psychotherapy offers considerable hope of alleviation of symptoms.

The importance of this stress reaction in aviators lies not only in the symptomatic disorders described above but the very real potential for the development of loss of confidence in, and a fear of flying. Such a development would almost certainly lead to disqualification from continuing certification in a high proportion of such individuals. The role of the authorised medical examiner is paramount in such situations. The GCAA will not usually grant aeromedical certification to individual who suffers from acute symptoms of PTSD. Certification may be considered once an individual's symptoms are controlled and the applicant is considered to pose no threat to the safety of air navigation or flight safety.

Medical certification of the pilots diagnosed with PTSD depends upon the successful resolution of symptoms and maintenance of symptom remission.

The GCAA highlights the pilot must report any adverse changes in anxiety symptoms. Failure to report a change in status would result in removal of his medical authorisation to fly. The validity must be every 6 months with a specialised psychiatrist reporting the pilot’s mental health status and progress.

2.5.3 Adjustment disorders

The manifestations vary and include depressed mood, anxiety or worry in a combination of these a feeling of inability to cope, as well as some degree of disability in the performance of daily routines. GCAA will not usually grant aeromedical certification to individual who suffers from acute symptoms of adjustment disorders.

2.6 Mixed anxiety and depressive disorder

Anxiety and depression or neurotic depression should be used when symptoms of anxiety and depression are both present but neither is clearly predominant and neither type of symptom is present to the extent that justifies a diagnosis, if each is considered separately.

2.7 Somatoform Disorders

The common features of this group of disorders are the presence of physical symptoms that suggest an underlying physical condition, but are not explained by that medical condition. The symptoms cause clinically significant distress or impairment in social, occupational or other areas of functioning and are not

intentional. The individual shows a refusal to discuss the possibility of a psychological cause, even if the symptoms onset and evolution prove a close relationship to unhappy life events or hardships and conflicts.

With this kind of disorders there is behaviour or focusing on catching the attention of the people around; it is common that the individuals have an acute feelings of their incapacity to persuade the physicians about the somatic nature of their illness and the need of a new investigation.

Somatoform disorders include:

2.7.1 Somatization disorder

The main features are multiple, recurrent and frequently changing physical symptoms that have persisted many years before the individual's coming to the psychiatrist.

The symptoms can affect each part of the body, nevertheless, the most common sensations are gastrointestinal ones (pain, feeling bloated and full of gas, regurgitation of food, nausea, vomiting) and skin symptoms (unpleasant numbness or tinkling, burning sensations, itching). Sexual and menstrual complaints are also common. The course of the disorder is chronic and fluctuating and is often associated with disruption of social, interpersonal and family behaviour.

2.7.2 Hypochondrical disorder

The essential feature is a persistent preoccupation with the possibility of having one or more serious and progressive physical disorders. The individuals show persistent somatic complaints or a persistent preoccupation with their physical appearance.

Normal or common place sensations are often considered by these individuals as abnormal and distressing, and attention is usually focused upon only one or two organs or systems of the body. Marked depression and anxiety are often present and may justify additional diagnosis.

There is persistent refusal to accept medical reassurance that there is no real physical cause for the symptoms in discussion.

2.7.3 Somatoform autonomic dysfunction

Symptoms are presented by the individual as if they were due to a physical disorder of a system or organ that is largely or completely under autonomic innervations and control, i.e. the cardiovascular, gastrointestinal, respiratory and urogenital systems.

The most common and significant complains are the ones referring to the cardiovascular system (cardiac neurosis or Da Costa's syndrome or neurocirculatory asthenia), to the respiratory system (hyperventilation, psychogenic cough), to the gastrointestinal system (gastric neurosis, neurotic diarrhoea, irritable bowel syndrome, flatulence) and also to the urogenital system (dysuria and increased frequency of micturition).

The symptoms are usually of two types neither of which indicates a physical disorder of the organ or system concerned. Firstly, there are complaints based upon objective signs of autonomic arousal, such as palpitations, sweating, flushing, tremor and expression of fear and distress about the possibility of a physical disorder. Secondly, there are subjective complaints of a non-specific or changing nature, such as fleeting aches and pains, sensations of burning, heaviness, tightness and feelings of being bloated and distended, which are referred by the individual to a specific organ or system.

2.7.4 Aeromedical Assessment of Neurosis and Somatoform Disorders

2.7.4.1 The initial applicant

If the applicant has suffered a psychiatric illness of significant severity requiring a period, or periods, of psychotropic medication, or has required admission to a psychiatric hospital or undergone prolonged out patient care, he should normally be assessed as unfit for both commercial flying and air traffic control duties. (Referral for formal psychiatric assessment may allow a fit assessment for a private pilot and Cabin crew in certain circumstances.)

2.7.4.2 Established flight crew

The established pilot has proved himself to be competent by successfully completing flying training. The decision as to his suitability to maintain a medical certificate may, therefore, be considered more sympathetically than is the case with the initial applicant.

- During the acute phase of any neurotic illness the presence of anxiety or depression is likely to interfere with decision making and the individual must be assessed as temporarily unfit to follow his profession until there has been full recovery.
- The use of psychotropic medication to treat psycho neurotic illness is incompatible with aviation duty and while any form of major or minor psychotropic drug aeromedical fitness is deemed to be suspended. This suspension must remain in force until a suitable period has elapsed following the cessation of medication to ensure that stability is maintained. Cases of cabin crew diagnosed with psycho neurotic illness may be permitted by the GCAA to return to flying duties, when satisfactory control is demonstrated by the use of medication.
- A single episode which clears completely in less than three months should be considered compatible with a return to flying.
- A protracted illness with poor response to treatment or characterised by relapses will normally lead to permanent unfit assessment.

3. Personality disorders

Personality disorders are always troublesome and are more likely to cause administrative or operational problems rather than frank medical problems. They imply lasting, deeply ingrained, inflexible behaviour patterns which, if severe enough, impair social interactions or produce symptomatic subjective distress in response to external stressors. In lesser form these are referred to as personality traits which exist for years in the ‘odd’, non-conforming personality and do not cause severe problems.

A number of specific personality disorders are identified including:

- Anti-social personality disorder (impulsive, aggressive, manipulative),
- Borderline personality disorder (impulsive, self-destructive, unstable),
- Dependent personality disorder (dependent, submissive, clinging);
- Histrionic personality disorder (emotional, dramatic, theatrical);
- Narcissistic personality disorder (boastful, egotistical, superiority complex);
- Obsessive –compulsive personality disorder (perfectionist, rigid, controlling);
- Paranoid personality disorder (suspicious, distrustful);
- Schizoid personality disorder (socially distant, detached), etc.

While personality trait are unique and may enable a person to excel in a particular field, individuals with identifiable personality disorders are likely to have attitudes or perform acts that may be prejudicial to fight

safety, such individuals fail to meet the psychiatric medical standards and requirements and will be disqualified from aeromedical certification.

Certification may be considered if a board of psychiatrist and psychologist with experience in aviation medicine- confirm that a Pilot with a personality disorder represents a low risk to aviation safety.

4. Alcohol screening tests

4. 1. Indications

1. Screening as part of over 60 medical certification

2. A part of the medical evaluation as determined by the AME during the regulatory medical examination (e.g. cases of cardiac arrhythmia, insomnia, chronic headache, depression or anxiety, liver disease and cases of uncontrolled hypertension or diabetes or increased suspicion especially in those with a family history of addiction)

3. Referral following an aviation incident or work related issues.

4. 3rd party notifications for suspected Drug or Alcohol misuse.

4.2 Screening tools:

4.2.1 A detailed interview and system review should be conducted with emphasis on the following:

- Alcohol intake – amount /type/how often
- Family history
- Physical dependence – withdrawal symptoms
- Sickness absence record-pattern of frequent, short term leave is often seen with alcohol-use disorder.
- Neurological issues
- Cardiac – arrhythmias / hypertension
- Gastroenterology – Gastritis/GORD
- Injuries- recurrent or unexplained
- Legal and social problems
- Marital disharmony
- Psychological problems

4.2.2 Examination

- Physical dependence – signs of withdrawal (e.g. irritability, restlessness, apprehension …)
- General appearance- complexion
- Liver damage – spider naevi, hepatomegaly
- Hypertension
- Pancreatitis
- Cardiomegaly, arrhythmias

4.2.3 Questionnaire

AUDIT (Alcohol Use Disorders Identification test) – score of 8 or more suggests that there could be a problem with alcohol.

It should be correlated with history and clinical examination and blood tests.

4.2.4 Laboratory testing

- **GGT (gamma-glutamyl trasferase):** Is raised in about 80% of heavy drinkers, but is not a completely specific marker for harmful use of alcohol.
- **MCV (mean corpuscular volume):** The MCV is raised above normal values in about 60% of alcohol dependent people and, like GGT, is not a completely specific marker. The value takes 1-3 months to return to normal following abstinence.
- **CDT (carbohydrate deficient transferring):** CDT has similar properties to GGT in so far its use as a screening test is concerned. It is more specific to heavy drinking than GGT, but perhaps less sensitive to intermittent "binge" drinking. In persons who consume significant quantities of alcohol (> 4 or 5 standard drinks per day for two weeks or more), CDT will increase and is an important marker for alcohol –use disorder. CDT usually increases within one week of the onset of heavy drinking and recovers 1 to 3 weeks after cessation of drinking. Any elevation of CDT requires immediate grounding, a liver ultrasound to assess for biliary disease and a full report from a substance abuse specialist to the GCAA regarding alcohol intake.

4.3 Protocol for rehabilitation /treatment / reinstatement and follow up

(a) If an alcohol-use is suspected in a pilot there must be documented evidence to support this.

(b) The evidence in the history or examination and /or a high AUDIT score and /or laboratory abnormalities that require further investigation, the pilot should be grounded.

(c) The AME should refer the pilot to substance abuse specialist to determine the diagnosis.

(d) If the substance abuse specialist assessment confirmed the diagnosis of alcohol –use disorder to FAA standards, then it will be required for the pilot to undertake a minimum 28 day in-patient rehabilitation stay under the Minnesota model at a recognised treatment centre.

(e) Aftercare and long-term follow-up. Treatment, even intensive in-patient care, is unlikely to result in recovery unless it is followed by ongoing assistance. In the workplace, this must include:

- Monitoring, preferably by an employee assistance professional or designated peer.
- Periodic re-evaluation by a substance abuse specialist, it will be determined on an individual basis by the treatment facility and the treating SAME.
- Support groups. Involvement in a group such as Alcoholics Anonymous (AA) can provide affected individuals with a continuing source of support during their ongoing rehabilitation process. Three support group meetings per week and a log of all meetings attended should be kept for review with SAME.
- Monthly Senior AME contact
- Monthly Blood test
- A minimum of fifteen unannounced breath alcohol testing per year, this may include the non-work related testing

(f) Reinstatement after successful treatment and rehabilitation

- The SAME should send all initial reports, investigation result, and substance abuse specialist report along with all documentation of successful follow up program to the GCAA.
- The GCAA will convene an aeromedical board consisting of one approved GCAA Psychiatrists, an approved Psychologist and two SAME.
- Simulator assessment should be part of the board evaluation for cognitive functions.
- The AMS will evaluate all the reports and if in the documentation of appropriate treatment and abstinence is acceptable the AMS will permit the pilot to return to flying duties with restricted licence. The OML restriction may be removed after 2 years upon documentation of successful abstinence.
- The follow up will be indefinitely.
- If relapse occurs at any time during the follow up program, the pilot will be removed permanently from flying duties.

5. DSH (deliberate self-harm)

It is not unknown, but uncommon, for an individual to use an aircraft as a means of committing suicide and a brief review of assessing an individual 'at risk' is relevant.

There are differences between those who successfully complete the act of suicide and those who survive after overdose or deliberate self-harm.

Those who commit suicide are more often male and the majority suffers from a psychiatric disorder. The act is carefully planned, precautions taken against discovery, and the method is usually violent. The majority is suffering from a depressive disorder, many have significant social problems and alcoholism is a feature in about 15% of cases. In the younger age groups personality disorders feature largely, often associated with alcohol or drug abuse, and adverse social factors.

Deliberate self-harm is usually an impulsive act, committed in such a way as to invite discovery.

Over dosage with minor tranquillisers, antidepressants and non-opiate analgesics are common. Here again personality disorders with alcohol and drug abuse are prominent features together with social isolation and deprivation, but frank psychiatric illness is uncommon. In assessing potential risk the following factors should be considered:

- a history of direct statement of intent:
- a history of previous self-harm;
- a previous or current depressive disorder, particularly those in the early phase of recovery;
- alcohol dependence, particularly where physical complications or severe social damage exists;
- Drug dependence;
- Social deprivation or loneliness.

At the initial selection interview those with a history of previous suicidal attempts should be very carefully and searchingly evaluated psychiatrically and it would be wise not to allow such individuals to enter a flying career.

Those who develop depressive illnesses should be excluded from flying and fully evaluated on recovery before reinstatement in a flying role. It is particularly important that those with alcohol dependence or abuse are assessed as temporarily unfit following diagnosis. Those individuals with significant personality disorders should be carefully excluded at the initial examination, if at all possible.

AMC1 MED.B.060 Psychology

(a) Where there is suspicion or established evidence that an applicant has a psychological disorder, the applicant should be referred for psychological opinion and advice.

(b) Established evidence should be verifiable information from an identifiable source which evokes doubts concerning the mental fitness or personality of a particular individual. Sources for this information can be accidents or incidents, problems in training or proficiency checks, delinquency or knowledge relevant to the safe exercise of the privileges of the applicable licence.

(c) The psychological evaluation may include a collection of biographical data, the administration of aptitude as well as personality tests and psychological interview.

(d) The psychologist should submit a written report to the AME, AeMC or licensing authority as appropriate, detailing his/her opinion and recommendation.

AMC1 MED.B.065 Neurology

(a) Epilepsy

1. A diagnosis of epilepsy is disqualifying, unless there is unequivocal evidence of a syndrome of benign childhood epilepsy associated with a very low risk of recurrence, and unless the applicant has been free of recurrence and off treatment for more than 10 years. One or more convulsive episodes after the age of 5 are disqualifying. In the case of an acute symptomatic seizure, which is considered to have a very low risk of recurrence, a fit assessment may be considered after neurological review.

2. An applicant may be assessed as fit by the licensing authority with a multi-pilot limitation if:

   (i) there is a history of a single afebrile epileptiform seizure;

   (ii) there has been no recurrence after at least 10 years off treatment;

   (iii) there is no evidence of continuing predisposition to epilepsy.

(b) Conditions with a high propensity for cerebral dysfunction

An applicant with a condition with a high propensity for cerebral dysfunction should be assessed as unfit. A fit assessment may be considered after full evaluation.

(c) Clinical EEG abnormalities

1. Electroencephalography is required when indicated by the applicant's history or on clinical grounds.

2. Epileptiform paroxysmal EEG abnormalities and focal slow waves should be disqualifying; in correlation with clinical history and other investigation

(d) Neurological disease

Any stationary or progressive disease of the nervous system which has caused or is likely to cause a significant disability is disqualifying. However, in case of minor functional losses associated with stationary disease, a fit assessment may be considered after full evaluation.

(e) Episode of disturbance of consciousness

In the case of a single episode of disturbance of consciousness, which can be satisfactorily explained, a fit assessment may be considered, but a recurrence should be disqualifying.

(f) Head injury

An applicant with a head injury which was severe enough to cause loss of consciousness or is associated with penetrating brain injury should be reviewed by a consultant neurologist. A fit assessment may be considered if there has been a full recovery and the risk of epilepsy is sufficiently low.

(g) Spinal or peripheral nerve injury, myopathies

An applicant with a history or diagnosis of spinal or peripheral nerve injury or myopathy should be assessed as unfit. A fit assessment may be considered if neurological review and musculoskeletal assessments are satisfactory.

GM1 MED.B.065 Neurology (1) Migraine

1.1 Common Migraine (Migraine without Aura)

Diagnosis depends on:

- Detailed history of headaches
- Usually an absence of significant neurological symptoms

Treatment usually does not include parenteral opiates or specific migraine drugs such as vascular active agents.

1.2 Classical Migraine

Is accompanies by any transient focal neurological and /or vascular phenomena that may

Include:

- Unilateral headache
- Hemiparesthesia, Hemiplegia
- Retinal /occipital phenomena, such as visual disturbance of various degree and scotoma
- Basilar artery phenomena
- Autonomic symptoms of nausea, vomiting etc.

Such migraines have variable periods of remission and rate of onset, and may completely incapacitate the sufferer. There is no universal exclusion of medication. Significant side effect should be explored and tier presence or absence documented.

1.3 Aeromedical disposition:

(a) Anyone with a history of migraine should not be selected for Class I certification; due to the unpredictability and disabling nature of the condition.

(b) Applicants presented for renewal with migraine, should be neurologically assessed. If no underlying disease is found and the individual remains free of further attacks for a period of 3 to 6 months, a return to flying may be approved with restricted licence for class I.

(c) if the migraine attacks are infrequent and due to a specific precipitatnt, and avoidance of this precipitants results in no further migraines for a period of more than 2 years.

(d) Frequent migraine attacks are incompatible with any form of flying.

2. TRAUMATIC BRAIN INJURY

2.1 General

Some element of head injury occurs in over 70% of individuals involved in automobile accidents and in at least 50% of all major trauma excluding burns. An estimated 80 to 90% of persons with head injury have mild trauma. Of those persons discharged with a good recovery from mild to moderate head injuries, about 10% have a continuing need for medical care services as a result of their head injury.

Traumatic Brain Injury (TBI) is a major cause of neurological disability in the licence holder population. Closed head injury is the most common, most often related to rapid deceleration

of the head (with or without impact). A combination of neurologic, cognitive, behavioural, and psychosocial variables are involved in the outcome of head injury, and the latter two variables are probably the most important. There are two major concerns over fitness for aviation – related duties following head trauma. One is the neuropsychological consequence of trauma in applicants who have not had any clear deficits and the other is the possibilities of Post Traumatic Epilepsy (PTE).

2.2 Consequences of traumatic Brain Injury

2.2.1 Neuropsychological consequence

The neuropsychological consequences are secondary to the effects of acceleration/deceleration forces on the skull and brain. Because of the anatomy involved, these forces cause their greatest focal damage to the orbital, frontal and anterior temporal areas of the brain. Associated with the cortical damage there is diffuse white matter damage.

The result of this is dysfunction in a number of functional executive activities of the brain.

These frequently are:

- Slowing of reaction time, impaired memory and deficient ability to perform constantly at a high level over time, particularly in settings of complex activities and choices.
- A high propensity for further mental decline with fatigue.
- Other problems include attention, initiation and proper sequencing of tasks, difficulty in planning and anticipating the future, and difficulty establishing automatic responses to a normal fear.
- The affected individual may not notice or care that the task is being poorly performed.
- Problems are exacerbated by stress, fatigue and pain and the handling of simultaneous emergency

tasks is particularly affected.

2.2.1.2 Prediction of Neuropsychological consequence

The most common way to predict the outcome of head injury is the duration of post-traumatic amnesia (PTA). Most individuals who have had a PTA of less than 30 minutes are likely to be fit within three months. Older individuals and/or those who have a history of previous concussion are of greater concern. A person with PTA lasting more than 30 minutes but less than 24 hours will likely be fit from a neuropsychological point of view after a longer time, probably one year.

2.2.2 Post-Concussion Syndrome

Post-concussion syndrome is characterised by a set of nonspecific symptoms including headache, insomnia, irritability, a non-specific dizziness, poor concentration, memory loss and other complaints. Neurological examination and imaging studies are normal. The condition is self-limited, generally resolving in weeks or months. The licence holder must be grounded until the time his symptoms subsided.

2.2.3 Focal Neurological Deficit

The major part of recovery from focal deficits such as hemiparesis, aphasia and other deficits takes place within six months of injury, though further recovery occurs at a slower pace over two to three years. Medical records and current neurological functioning will provide information regarding persistent deficit.

2.2.4 Posttraumatic Epilepsy (PTE)

PTE usually refers to late epilepsy, i.e., to seizures that develop several weeks or months after the head injury (1 to 3 months in most cases). Epilepsy is the most common delayed sequel of craniocerebral trauma, with an overall incidence of about 5 % in patients with closed head injuries and 50 % in those who had sustained a compound skull fracture and wound of the brain. The basis is nearly always a contusion or laceration of the cortex. As one might expect, the risk of developing posttraumatic epilepsy is also related to the overall severity of the closed head injury. The risk of seizures after severe head injury was 7 % within 1 year and 11.5 % in 5 years. If the injury was only moderate, the risk fell to 0.7% and 1.6 %, respectively.

After mild injury the incidence of seizures was not significantly greater than in the general population. In general, of those who develop post traumatic seizures, 50% will occur within one year and 70- 80% within two years. Thereafter the incidence is 3 - 5% per year up to ten years.

Once the first post-traumatic week (the period of early PTE) has passed, the risk of subsequent PTE decays exponentially. By two years, the residual risk is less than 20% of that immediately post-injury and at four years it is less than 10% of that initially present.

2.2.4.1 Post Traumatic Epilepsy Markers

- A past history of febrile convulsions in childhood and/or a family history of epilepsy doubles the risk associated with any other markers.
- Early post-traumatic epilepsy that occurs within the first week following injury carries a 25% risk of later epilepsy.
- Demonstrated haemorrhage within the brain substance, particularly the cortical part, is associated with 25-45% risk of PTE.
- Depressed fractures or presence of blood in the subarachnoid space are not reliable guides to risk of

PTE.

- The presence or absence of a post-traumatic amnesic interval of more than 24 hours, focal signs, and early post-traumatic epilepsy will increase the risk of PTE. (Any convulsive activity following the immediate effects of impact, however shortly thereafter these occur, should be considered as "early posttraumatic epilepsy").
- The presence of blood within **the parenchyma-** not in subarachnoid space**-** is of major concern, since PTE is believed to be an "iron driven" phenomenon.

2.3 Aeromedical status for head injury based on clinical and imaging studies

2.3.1 Mild Head Injury

This is characterised by:

- Transient loss or alteration of consciousness without any focal neurological deficit and with rapid return to alertness and orientation Post-traumatic amnesia (PTA) occurs when a person is conscious but ongoing events are not recorded in the memory. This can sometimes be very difficult to evaluate as there may be no witnesses or may be poor recall or record keeping. The assumption must always therefore err on the side of caution with regard to defining periods of amnesia or loss of consciousness. For a minor head injury the duration of this lapse must be a clearly documented period of amnesia being less than one hour; and there must be no Post-traumatic syndrome (PTS). PTS comprises a symptom complex including:-Dizziness/ Vertigo; Emotional impairment; Headaches; Neurological signs and or Intellectual/ Cognitive impairments.
- Normal CT scan and MRI i.e. no skull fractures or cerebral bleeding
- Normal neuropsychological testing

2.3.1.1 Aero medical disposition

With the above criteria **all satisfied**, the main determinant factor for certification decision will be the PTA duration.

- A clear documented history of PTA lasting 1 hour or less and no LOC, the applicants are generally considered to be fit to fly after four weeks.
- A clear documented history of PTA/LOC lasting 1-12 hours, the applicants may be granted restricted medical certification by one year.
- A clear documented history of PTA/LOC more than 12 hours a restricted certification can be considered at two years

In all cases, formal confirmation of neurological fitness should precede a return to flying and referral to the GCAA for a final decision is required.

2.3.2 Significant head injury

Presence of any of the following:

- PTA/LOC >12 hrs., and
- Focal neurological deficits
- Basal Skull fracture or Depressed fracture (Linear Fracture with intact dura not included)
- Surgical or traumatic penetration of the dura
- Neurological/intellectual impairment

- Any intracranial bleeding (Subdural Hematoma, Epidural Hematoma, Intracranial Hemorrhage, Intraventricular Hemorrhage, Subarachnoid Hemorrhage)
- Abnormal EEG

2.3.2.1 Aero medical disposition

In the presence of any of the above findings, the licence holder must be assessed unfit.

However, reconsideration of certification decision may be done by the GCAA a 2 years after the index event. In this case a senior Aeromedical Board will be conducted.

The main determinant factor for certification decision will be the:

- Extent and nature of any neurological deficit.
- Risk of post traumatic epilepsy

2.3.2.1.1 Certification Requirements:

i. Two Neurology consultations by Neurologists acceptable to the GCAA supporting recertification
ii. Comprehensive Neuro-psychological evaluations
iii. Brain imaging (CT or MRI) at index and no sooner than 2 years afterwards
iv. Normal Sleep deprivation / Photostimulation EEG.
v. Two practical flight tests including one at night during circadian lows
vi. Senior AME medical board

Final aeromedical disposition of medical certification and return to duties will be considered individually. Those applicants with a full clinical recovery **may** be considered for a fit assessment after 2 years following the above detailed rigorous assessment.

Presence of Epilepsy; Penetrating skull injuries; Debilitating neurological deficits; Reduced Cognitive functioning and or Brain abscess will be permanently disqualifying from all types of medical certification.

AMC1 MED.B.070 Visual system

(a) Eye examination

1. At each aero-medical revalidation examination, an assessment of the visual fitness should be undertaken and the eyes should be examined with regard to possible pathology.

2. All abnormal and doubtful cases should be referred to an ophthalmologist.

   Conditions which indicate ophthalmological examination include, but are not limited to, a substantial decrease in the uncorrected visual acuity, any decrease in best corrected visual acuity and/or the occurrence of eye disease, eye injury, or eye surgery.

3. Where specialist ophthalmological examinations are required for any significant reason, this should be imposed as a limitation on the medical certificate.

(b) Comprehensive eye examination

A comprehensive eye examination by an eye specialist is required at the initial examination. All abnormal and doubtful cases should be referred to an ophthalmologist. The examination should include:

1. history;
2. visual acuities - near, intermediate and distant vision (uncorrected and with best optical correction if needed);
3. examination of the external eye, anatomy, media (slit lamp) and fundoscopy;
4. ocular motility;
5. binocular vision;
6. colour vision;
7. visual fields;
8. tonometry on clinical indication; and
9. refraction hyperopic initial applicants with a hyperopia of more than +2 dioptres and under the age of 25 should undergo objective refraction in cycloplegia.

(c) Routine eye examination

A routine eye examination may be performed by an AME and should include:

1. history;
2. visual acuities - near, intermediate and distant vision (uncorrected and with best optical correction if needed);
3. examination of the external eye, anatomy, media and fundoscopy;
4. further examination on clinical indication.

(d) Refractive error

1. At initial examination an applicant may be assessed as fit with:

    (i) hypermetropia not exceeding +5.0 dioptres;

    (ii) myopia not exceeding –6.0 dioptres;

(iii) astigmatism not exceeding 2.0 dioptres;

(iv) anisometropia not exceeding 2.0 dioptres

provided that optimal correction has been considered and no significant pathology is demonstrated.

2. Initial applicants who do not meet the requirements in (1)(ii), (iii) and (iv) above should be referred to the licensing authority. A fit assessment may be considered following review by an ophthalmologist.

3. At revalidation an applicant may be assessed as fit with:

(i) hypermetropia not exceeding +5.0 dioptres;

(ii) myopia exceeding –6.0 dioptres;

(iii) astigmatism exceeding 2.0 dioptres;

(iv) anisometropia exceeding 2.0 dioptres

provided that optimal correction has been considered and no significant pathology is demonstrated.

4. If anisometropia exceeds 3.0 dioptres, contact lenses should be worn.

5. If the refractive error is +3.0 to +5.0 or –3.0 to –6.0 dioptres, there is astigmatism or anisometropia of more than 2 dioptres but less than 3 dioptres, a review should be undertaken 5 yearly by an eye specialist.

6. If the refractive error is greater than –6.0 dioptres, there is more than 3.0 dioptres of astigmatism or anisometropia exceeds 3.0 dioptres, a review should be undertaken 2 yearly by an eye specialist.

7. In cases (5) and (6) above, the applicant should supply the eye specialist's report to the AME. The report should be forwarded to the licensing authority as part of the medical examination report. All abnormal and doubtful cases should be referred to an ophthalmologist.

(e) Uncorrected visual acuity

No limits apply to uncorrected visual acuity.

(f) Substandard vision

1. Applicants with reduced central vision in one eye may be assessed as fit if the binocular visual field is normal and the underlying pathology is acceptable according to ophthalmological assessment. A satisfactory medical flight test and a multi-pilot limitation are required.

2. An applicant with acquired substandard vision in one eye may be assessed as fit with a multi-pilot limitation if:

    (i) the better eye achieves distant visual acuity of 6/6 (1.0), corrected or uncorrected;

    (ii) the better eye achieves intermediate visual acuity of N14 and N5 for near;

    (iii) in the case of acute loss of vision in one eye, a period of adaptation time has passed from the known point of visual loss, during which the applicant should be assessed as unfit;

    (iv) there is no significant ocular pathology; and

    (v) a medical flight test is satisfactory.

3. An applicant with a visual field defect may be assessed as fit if the binocular visual field is normal and the underlying pathology is acceptable to the licensing authority.

(g) Keratoconus

Applicants with keratoconus may be assessed as fit if the visual requirements are met with the use of corrective lenses and periodic review is undertaken by an ophthalmologist.

(h) Heterophoria

Applicants with heterophoria (imbalance of the ocular muscles) exceeding:

1. at 6 metres:

    2.0 prism dioptres in hyperphoria,

    10.0 prism dioptres in esophoria,

    8.0 prism dioptres in exophoria and

2. at 33 centimetres:

    1.0 prism dioptre in hyperphoria,

    8.0 prism dioptres in esophoria,

    12.0 prism dioptres in exophoria

should be assessed as unfit. The applicant should be reviewed by an ophthalmologist and if the fusional reserves are sufficient to prevent asthenopia and diplopia a fit assessment may be considered.

(i) Eye surgery

The assessment after eye surgery should include an ophthalmological examination.

1. After refractive surgery, a fit assessment may be considered, provided that:

   (i) pre-operative refraction was not greater than +5 dioptres;

   (ii) post-operative stability of refraction has been achieved (less than 0.75 dioptres variation diurnally);

   (iii) examination of the eye shows no post-operative complications;

   (iv) glare sensitivity is within normal standards;

   (v) mesopic contrast sensitivity is not impaired;

   (vi) review is undertaken by an eye specialist.

2. Cataract surgery entails unfitness. A fit assessment may be considered after 3 months.

3. Retinal surgery entails unfitness. A fit assessment may be considered 6 months after successful surgery. A fit assessment may be acceptable earlier after retinal laser therapy. Follow-up may be required.

4. Glaucoma surgery entails unfitness. A fit assessment may be considered 6 months after successful surgery. Follow-up may be required.

5. For (2), (3) and (4) above, a fit assessment may be considered earlier if recovery is complete.

(j) Correcting lenses

Correcting lenses should permit the licence holder to meet the visual requirements at all distances.

GM1 MED.B.070 Visual system

1. Medical management of LASER injuries guidelines

Laser beams represent a potential threat to mission effectiveness and flight safety because of their ability to damage aircraft sensors and the eye. Laser based systems and devices are proliferating and pose a threat to the eye, both temporarily and permanently, from friendly and hostile sources. The frequency of laser beam exposures is likely to increase.

Medical force protection and prevention in operational units should include training and awareness of the threat by direct flight surgeon (AME) involvement in flying safety and aircrew training programs. For example, awareness that many lasers, e.g. Class 2 and 3A pointers, although very bright, cause no more than momentary dazzle or temporary flash blindness effects may help reduce fear and anxiety associated with these events. On the other hand, more powerful lasers, to include laser pointers rated Class 3B or higher, are

potentially dangerous, especially when the source is at close range. Laser beams can be invisible in the form of infrared (IR) and ultraviolet (UV) wavelengths. The risk of permanent ocular injury diminishes at increasing distances from the source. However, laser beam exposures may disrupt operations during critical phases of flight and have psychological effects at distances far beyond those associated with ocular damage. Flight crew should be knowledgeable as to the entire laser beam threat spectrum, including appropriate steps to be taken if exposed.

1.1 Purpose:

The purpose of these guidelines is to provide guidelines and instructions for AME dealing with potential laser bean exposure in flight crew and ground personnel. The intent is to provide an evaluation and initial management process to assess and respond to laser beam exposures where ocular adnexal injury may have occurred.

1.2 Laser Effects on visual performance:

Lasers may interfere with vision either temporarily or permanently in one or both eyes. At low energy levels, lasers may produce temporary reduction in visual performance in critical tasks, such as flying aircraft. Also the glare induced by the laser scattering on scratches on the cockpit windscreen which can fog out landing lights and can be a risk to safe control of the craft. At higher energy levels they may produce serious long-term visual loss, even permanent blindness.

Pilots who sustain minimal injuries or even no injury from low energy laser exposures may develop serious psychological problems and become ineffective in the performance of their duties.

1.2.1 Eye Injuries:

Cornea	Retina
1. Ultraviolet and low energy far-infrared radiation can injure the epithelial layer of the cornea; a condition that is painful and visually handicapping. At lower powers, this injury is primarily due to a photochemical reaction. **A latency period of hours may exist** between the time of exposure and the development of the corneal pathology. Minimal corneal lesions heal within a few days, but meanwhile they produce a decrement in visual performance. 2. High energy far-infrared radiation is absorbed mainly by the cornea, producing immediate burns at all corneal layers .An infrared laser can produce a burn resulting in immediate visual incapacitation and may lead to permanent cornea scarring. Very high energy can perforate the cornea; this	1. Temporary changes in the ability to see can be produced without permanent damage. 2. Absorbed energy heats the retinal tissue. Heat from lasers causes thermal coagulation of the photoreceptor cells and other retinal structures. The surrounding retina will be threatened by inflammatory processes and edema. These processes result in scotoma (blind spots), varying in size depending on the extent of the retinal damage. 3. Sub retinal hemorrhage /Vitreous Hemorrhage, Extensive or centrally located hemorrhage can produce a significant loss of vision. 4. Retinal detachment – this occurs when the energy of the laser is enough to create a hole in the retina, and its onset will be from days to months after the injury

perforation may lead to loss of the eye.	5. Laser damage to the retinal/choroidal areas may produce brief, severe pain. 6. A major long-term effect of laser retinal injury is the scarring process which may degrade vision weeks or even months after the injury.

1.3 AME Role:

The key to evaluating and managing any laser eye injury or suspected laser beam exposure is immediate involvement of the AME. The AME is responsible for coordinating and determining the appropriate care and action to be taken. The AME should always approach a laser eye injury as a potentially serious ocular injury. An early consultation with an eye specialist is paramount for all suspecting case.

1.4 Evaluation of suspected Laser injuries by Eye Specialist:

1.4.1 History:

A detailed operational and medical history with respect to the nature and characteristics of the laser beam exposure. Important details include characteristics such as intensity, colour, constant or flicker nature of the light source, duration of exposure, location, estimated beam diameter, range, tracking, source, location (airborne or ground), glare, pain, photophobia, and any immediate or delayed symptoms. It is important to note that some laser beams are invisible to the human eye (e.g., UV and IR) and may induce sudden visual symptoms.

The use of personal protective equipment shall be documented if used (including glasses or contact lenses).

Past ocular and family eye histories should be included.

Use of the Laser Beam Incident Questionnaire will aid in both the medical assessment and intelligence aspects of the incident. The Laser Incident Questionnaire is meant to provide medical and laser experts with enough information to aid in initial treatment of exposed personnel. Involved personnel will undergo more extensive interviews by additional medical, operational, and military intelligence personnel.

Once the diagnosis of Laser eye injuries diagnosed, notifications should be made as soon as possible to the AME who shall notify the GCAA as soon as time and circumstances permit.

1.4.2 Physical examination

- In any suspected laser eye injury, the patient should be re-examined as clinically indicated, ideally in 24 hours, but at least within 72 hours.
- the Eye doctor shall use the GCAA Ophthalmology form (MED- 01)

    - External Examination of the skin around the eyes and its adnexa
    - Near Visual Acuity Test.
    - Distant Visual Acuity Test.

- Amsler Grid Test.
- Pupils.
- Stereopsis.
- Colour Vision.
- Slit Lamp.
- Retinal Examination
- **Coherence Tomography (OCT)**. Use of OCT can be very beneficial to aid in the determination of subtle retinal effects from laser beam exposure. OCT allows for examination of the nerve fibre layer, retinal pigment epithelium and choriocapillaris. It has been used to demonstrate and document retinal injuries by lasers when no symptomatic changes have been present. This type of the test should be considered and requested by the AME if a laser beam injury is suspected.
- Funds Fluorescein angiography

AMC1 MED B.075 Colour vision

(a) At revalidation, colour vision should be tested on clinical indication.

(b) The Ishihara test (24 plate version) is considered passed if the first 15 plates, presented in a random order, are identified without error.

(c) Those failing the Ishihara test should be examined by advanced colour vision testing approved by the GCAA (CAD).

GM1 MED B.075 Colour vision

1. Screening tests for Colour Vision

- **Frequency-** At initial Medical Certification and thereafter to be carried out every 5 years to age 40, then 2 yearly to age 65.
- **Approved screening test-**Ishihara, 24 plates

1.2 Screening test

1.2.1 Plate testing procedure

Reliable colour vision testing using the plates requires that a standardised procedure be followed carefully. The main points are;

i. Illumination

The preferred method used is the daylight or artificial daylight source which should give an illumination equivalent to the standard illumination ‘C’ or ‘D’ of CIE (Commission Intrenational e de I’E clairage).

ii. Position

The plates should be shown at right angles to the visual axis of the applicant at about 75 cm distance.

iii. Exposure time

Plates are exposed in random sequence and each plate is exposed for a maximum of five seconds.

1.2.2 Screening test result

i. Normal/colour safe applicant -The Ishihara test (24 plate version) is to be considered passed if the first 15 plates are identified without error, without uncertainty or hesitation (less than 3 seconds per plate)

ii. Colour unsafe, Class I and III cannot be certificated without advanced colour vision testing

2. Approved Advance test for initial class I is CAD test

2.1 Indication for advanced testing

i. Initial Applicants for Class I and III who fail the Ishihara's test, or

ii. Renewal Applicants who previously passed screening test and failed the current screening testing, or

iii. Holder of Foreign waiver at initial GCAA Medical application, or

iv. Current holder of GCAA Medical Class I & III, who had previously granted a waiver based on foreign waiver/or advance colour vision tests not approved by GCAA.

Note*: Current GCAA Licence Holders who had previously passed Anomaloscopy or Lantern testing acceptable to GCAA (Holmes Wright, Beynes, or Spectrolux) are not required to take CAD test.*

2.2 Result of advance colour vision testing

i. Colour safe: Applicants who fail the Ishihara's test but pass advanced testing

ii. Colour unsafe: An applicant who fails the advance colour perception tests

iii. Class II applicants who fails to meet the colour perception standards (i.e. who fail both the Ishihara plate and the CAD test, but who meets all other standards) is eligible for issue of an operationally restricted licence (Valid only for day flying only).

iv. Cabin crew class can be issued class II licence restricted to cabin crew duties only. They don't require having normal colour vision perception; so no extensive testing is required for their certification.

AMC1 MED.B.080 Otorhino-laryngology

(a) Hearing

1. The applicant should understand correctly conversational speech when tested with each ear at a distance of 2 metres from and with the applicant's back turned towards the AME.

2. The pure tone audiogram should cover the 500 Hz, 1000 Hz, 2000 Hz and 3000 Hz frequency thresholds.

3. An applicant with hypoacusis should be referred to the licensing authority. A fit assessment may be considered if a speech discrimination test or functional flight deck hearing test demonstrates satisfactory hearing ability. A vestibular function test may be appropriate.

4. If the hearing requirements can only be met with the use of hearing aids, the hearing aids should provide optimal hearing function, be well tolerated and suitable for aviation purposes.

(b) Comprehensive otorhinolaryngological examination

A comprehensive otorhino-laryngological examination should include:

1. history;

2. clinical examination including otoscopy, rhinoscopy, and examination of the mouth and throat;

3. tympanometry or equivalent;

4. clinical assessment of the vestibular system.

(c) Ear conditions

1. An applicant with an active pathological process, acute or chronic, of the internal or middle ear should be assessed as unfit. A fit assessment may be considered once the condition has stabilised or there has been a full recovery.

2. An applicant with an unhealed perforation or dysfunction of the tympanic membranes should be assessed as unfit. An applicant with a single dry perforation of non-infectious origin and which does not interfere with the normal function of the ear may be considered for a fit assessment.

(d) Vestibular disturbance

An applicant with disturbance of vestibular function should be assessed as unfit. A fit assessment may be considered after full recovery. The presence of spontaneous or positional nystagmus requires complete vestibular evaluation by an ENT specialist. Significant abnormal caloric or rotational vestibular responses are disqualifying. Abnormal vestibular responses should be assessed in their clinical context.

(e) Sinus dysfunction

An applicant with any dysfunction of the sinuses should be assessed as unfit until there has been full recovery.

(f) Oral/upper respiratory tract infections

A significant, acute or chronic infection of the oral cavity or upper respiratory tract is disqualifying. A fit assessment may be considered after full recovery.

(g) Speech disorder

A significant disorder of speech or voice is disqualifying.

GM1 MED.B.080 Otorhino-laryngology

1. Hearing Aids

For initial Class 1 applicants, hearing aids are not usually acceptable.

In an applicant who already holds a medical certificate, any type of hearing aid is acceptable for recertification, e.g. bone-anchored or intra-aural. Following insertion of the hearing aid, a functional hearing assessment must be performed and if satisfactory a return to certification is possible. A multi-crew restriction may be required for Class 1 applicants.

Note: For many pilots increasing the volume of the head set may be preferable and enhance hearing more than wearing hearing aids.

For removable hearing aids, audiometry, if required, should be undertaken both with and without hearing aids.

2. Ear Conditions

A fit assessment can be considered after full recovery from a condition affecting the ear following provision of a satisfactory ENT specialist report.

If there is incomplete recovery from the condition, evidence that the condition has stabilised for an appropriate period of time is required. The audiogram standards must be met or a satisfactory functional hearing assessment is required.

3. Perforation

Recertification is possible after a minimum period of six weeks following a single dry perforation of non-infectious origin. An ENT specialist report is required confirming complete healing and the pilot must be pain free. A satisfactory audiogram is required for Class 1 recertification.

4. Stapedectomy

To ensure full healing, recertification is only allowed a minimum of three months after surgery, subject to a satisfactory specialist report confirming no complications, the absence of dizziness, spontaneous or positional nystagmus and a satisfactory hearing result.

5. Grommet insertion

This is acceptable for certification at both initial and revalidation/renewal.

6. Benign Positional Vertigo/Labyrinthitis

In view of the recurrence risk of this condition and the sudden incapacitating nature of the symptoms, the earliest a pilot can be considered for recertification is after they have been symptom-free and off any treatment for at least 4 weeks. Class 1 holders require an OML for a minimum period of 3 months from

recertification. The use of any medication to treat vestibular symptoms, e.g. Betahistine is not acceptable for medical certification.

7. Meniere's Disease

A diagnosis of Meniere's Disease, untreated or treated is not acceptable for Class 1 or 2 medical initial or recertification.

8. Speech discrimination test or functional hearing test

This test should be based on the following ICAO guidance:

Hearing loss greater than the requirements may be acceptable provided that there is normal hearing performance against a background noise that reproduces or simulates the masking properties of the flight deck noise in the cockpit upon speech and beacon signals.

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. 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. In the speech material for discrimination testing, both aviation-relevant phrases and phonetically balanced words are normally used. Alternatively, a practical hearing test conducted in communication environment representative of the one for which the certificate holder's licence and ratings are valid may be used.

The Functional Hearing Test form should be used.

AMC1 MED.B.085 Dermatology

(a) Referral to the licensing authority should be made if doubt exists about the fitness of an applicant with eczema (exogenous and endogenous), severe psoriasis, bacterial infections, drug induced, or bullous eruptions or urticaria.

(b) Systemic effects of radiant or pharmacological treatment for a dermatological condition should be considered before a fit assessment can be considered.

(c) In cases where a dermatological condition is associated with a systemic illness, full consideration should be given to the underlying illness before a fit assessment may be considered.

AMC1 MED.B.090Oncology

(a) Applicants who underwent treatment for malignant disease may be assessed as fit by the licensing authority if:

1. there is no evidence of residual malignant disease after treatment;

2. time appropriate to the type of tumour has elapsed since the end of treatment;

3. the risk of inflight incapacitation from a recurrence or metastasis is sufficiently low;

4. there is no evidence of short or long-term sequelae from treatment. Special attention should be paid to applicants who have received anthracycline chemotherapy;

5. satisfactory oncology follow-up reports are provided to the licensing authority.

(b) A multi-pilot limitation should be applied as appropriate.

(c) Applicants with pre-malignant conditions of the skin may be assessed as fit if treated or excised as necessary and there is regular follow-up.

Section 3 - Specific requirements for class 2 medical certificates

AMC2 MED.B.010 Cardiovascular system

(a) Examination

Exercise electrocardiography

An exercise ECG when required as part of a cardiovascular assessment should be symptom-limited and completed to a minimum of Bruce Stage IV or equivalent.

(b) General

1. Cardiovascular risk factor assessment

   An accumulation of risk factors (smoking, family history, lipid abnormalities, hypertension, etc.) requires cardiovascular evaluation.

2. Cardiovascular assessment

   Reporting of resting and exercise electrocardiograms should be by the an approved specialist.

(c) Peripheral arterial disease

A fit assessment may be considered for an applicant with peripheral arterial disease, or after surgery for peripheral arterial disease, provided there is no significant functional impairment, any vascular risk factors have been reduced to an appropriate level, the applicant is receiving acceptable secondary prevention treatment, and there is no evidence of myocardial ischaemia.

(d) Aortic aneurysm

1. Applicants with an aneurysm of the thoracic or abdominal aorta may be assessed as fit, subject to satisfactory cardiological evaluation and regular follow-up.

2. Applicants may be assessed as fit after surgery for a thoracic or abdominal aortic aneurysm subject to satisfactory cardiological evaluation to exclude the presence of coronary artery disease.

(e) Cardiac valvular abnormalities

1. Applicants with previously unrecognised cardiac murmurs require further cardiological evaluation.

2. Applicants with minor cardiac valvular abnormalities may be assessed as fit.

(f) Valvular surgery

1. Applicants who have undergone cardiac valve replacement or repair may be assessed as fit if post-operative cardiac function and investigations are satisfactory and no anticoagulants are needed.

2. Where anticoagulation is needed after valvular surgery, a fit assessment with an OSL or OPL limitation may be considered after cardiological review. The review should show that the anticoagulation is stable. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range.

(g) Thromboembolic disorders

Arterial or venous thrombosis or pulmonary embolism are disqualifying whilst anticoagulation is being used as treatment. After 6 months of stable anticoagulation as prophylaxis, a fit assessment with an OSL or OPL limitation may be considered after review in consultation with the licensing authority. Anticoagulation should be considered stable if, within the last 6 months, at least 5 INR values are documented, of which at least 4 are within the INR target range. Pulmonary embolus should require full evaluation.

(h) Other cardiac disorders

1. Applicants with a primary or secondary abnormality of the pericardium, myocardium or endocardium may be assessed as unfit pending satisfactory cardiological evaluation.

2. Applicants with a congenital abnormality of the heart, including those who have undergone surgical correction, may be assessed as fit subject to satisfactory cardiological assessment. Cardiological follow-up may be necessary and should be determined in consultation with the licensing authority.

(i) Syncope

Applicants with a history of recurrent vasovagal syncope may be assessed as fit after a 6-month period without recurrence, provided that cardiological evaluation is satisfactory. Neurological review may be indicated.

(j) Blood pressure

1. When the blood pressure at examination consistently exceeds 160 mmHg systolic and/or 95 mmHg diastolic, with or without treatment, the applicant should be assessed as unfit.

2. The diagnosis of hypertension requires review of other potential vascular risk factors.

3. Applicants with symptomatic hypotension should be assessed as unfit.

4. Anti-hypertensive treatment should be compatible with flight safety.

5. Following initiation of medication for the control of blood pressure, applicants should be re-assessed to verify that the treatment is compatible with the safe exercise of the privileges of the licence held.

(k) Coronary artery disease

1. Chest pain of uncertain cause requires full investigation.

2. In suspected asymptomatic coronary artery disease cardiological evaluation should show no evidence of myocardial ischaemia or significant coronary artery stenosis.

3. After an ischaemic cardiac event, or revascularisation, applicants without symptoms should have reduced any vascular risk factors to an appropriate level. Medication, when used to control angina pectoris, is not acceptable. All applicants should be on acceptable secondary prevention treatment.

    (i) A coronary angiogram obtained around the time of, or during, the ischaemic myocardial event and a complete, detailed clinical report of the ischaemic event and of any operative procedures should be available to the AME.

        (A) There should be no stenosis more than 50 % in any major untreated vessel, in any vein or artery graft or at the site of an angioplasty/stent, except in a vessel subtending a myocardial infarction. More than two stenoses between 30 % and 50 % within the vascular tree should not be acceptable.

        (B) The whole coronary vascular tree should be assessed as satisfactory and particular attention should be paid to multiple stenoses and/or multiple revascularisations.

        (C) An untreated stenosis greater than 30 % in the left main or proximal left anterior descending coronary artery should not be acceptable.

    (ii) At least 6 months from the ischaemic myocardial event, including revascularisation, the following investigations should be completed (equivalent tests may be substituted):

        i. an exercise ECG showing neither evidence of myocardial ischaemia nor rhythm disturbance;

        (B) an echocardiogram showing satisfactory left ventricular function with no important abnormality of wall motion and a satisfactory left ventricular ejection fraction of 50 % or more;

        (C) in cases of angioplasty/stenting, a myocardial perfusion scan or stress echocardiogram which should show no evidence of reversible myocardial ischaemia. If there is doubt about revascularisation in myocardial infarction or bypass grafting, a perfusion scan should also be required;

        (D) further investigations, such as a 24-hour ECG, may be necessary to assess the risk of any significant rhythm disturbance.

    (iii) Periodic follow-up should include cardiological review.

        (A) After coronary artery bypass grafting, a myocardial perfusion scan (or satisfactory equivalent test) should be performed if there is any indication, and in all cases within five years from the procedure for a fit assessment without a safety pilot limitation.

        (B) In all cases, coronary angiography should be considered at any time if symptoms, signs or non-invasive tests indicate myocardial ischaemia.

    (iv) Successful completion of the six month or subsequent review will allow a fit assessment. Applicants may be assessed as fit with a safety pilot limitation having successfully completed only an exercise ECG.

4. Angina pectoris is disqualifying, whether or not it is abolished by medication.

(l) Rhythm and conduction disturbances

Any significant rhythm or conduction disturbance should require cardiological evaluation and an appropriate follow-up before a fit assessment may be considered. An OSL or OPL limitation should be considered as appropriate.

1. Ablation

A fit assessment may be considered following successful catheter ablation subject to satisfactory cardiological review undertaken at a minimum of 2 months after the ablation.

2. Supraventricular arrhythmias

(i) Applicants with significant disturbance of supraventricular rhythm, including sinoatrial dysfunction, whether intermittent or established, may be assessed as fit if cardiological evaluation is satisfactory.

(ii) Applicants with atrial fibrillation/flutter may be assessed as fit if cardiological evaluation is satisfactory.

(iii) Applicants with asymptomatic sinus pauses up to 2.5 seconds on resting electrocardiography may be assessed as fit if cardiological evaluation is satisfactory.

3. Heart block

(i) Applicants with first degree and Mobitz type 1 AV block may be assessed as fit.

(ii) Applicants with Mobitz type 2 AV block may be assessed as fit in the absence of distal conducting tissue disease.

4. Complete right bundle branch block

Applicants with complete right bundle branch block may be assessed as fit subject to satisfactory cardiological evaluation.

5. Complete left bundle branch block

Applicants with complete left bundle branch block may be assessed as fit subject to satisfactory cardiological assessment.

6. Ventricular pre-excitation

Asymptomatic applicants with ventricular pre-excitation may be assessed as fit subject to satisfactory cardiological evaluation.

7. Pacemaker

Applicants with a subendocardial pacemaker may be assessed as fit no sooner than 3 months after insertion provided:

(i) there is no other disqualifying condition;

(ii) a bipolar lead system is used, programmed in bipolar mode without automatic mode change of the device;

(iii) the applicant is not pacemaker dependent; and

(iv) the applicant has a regular follow-up, including a pacemaker check.

AMC2 MED.B.015 Respiratory system

(a) Chest radiography

Posterior/anterior chest radiography may be required if indicated on clinical grounds.

(b) Chronic obstructive airways disease

Applicants with only minor impairment of pulmonary function may be assessed as fit.

(c) Asthma

Applicants with asthma may be assessed as fit if the asthma is considered stable with satisfactory pulmonary function tests and medication is compatible with flight safety. Systemic steroids should be disqualifying.

(d) Inflammatory disease

Applicants with active inflammatory disease of the respiratory system should be assessed as unfit pending resolution of the condition.

(e) Sarcoidosis

1. Applicants with active sarcoidosis should be assessed as unfit. Investigation should be undertaken with respect to the possibility of systemic involvement. A fit assessment may be considered once the disease is inactive.

2. Applicants with cardiac sarcoid should be assessed as unfit.

(f) Pneumothorax

1. Applicants with spontaneous pneumothorax should be assessed as unfit. A fit assessment may be considered if respiratory evaluation is satisfactory six weeks following full recovery from a single spontaneous pneumothorax or following recovery from surgical intervention in the case of treatment for a recurrent pneumothorax.

2. A fit assessment following full recovery from a traumatic pneumothorax as a result of an accident or injury may be acceptable once full absorption of the pneumothorax is demonstrated.

(g) Thoracic surgery

Applicants requiring major thoracic surgery should be assessed as unfit until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(h) Sleep apnoea syndrome

Applicants with unsatisfactorily treated sleep apnoea syndrome should be assessed as unfit.

GM2 MED.B.015 Respiratory system

1. Obstructive Sleep Apnea Screening Guidelines

1.1. Obstructive Sleep Apnea protocol

1.1.1 OSA Screening is indicated in:

- History of Excessive Daytime Sleepiness
- History of Snoring or witnessed Apnoea
- Hypertension, Diabetes, Metabolic Syndrome
- Obesity or High Neck Circumference
- Complaints of frequent nocturnal awakenings
- Complaints of difficulty concentrating and Complaints of problems with memory
- Complaints of daytime sleepiness or fatigue

1.1.2 Method of Objective screening:

(i) physical examination including vital signs (blood pressure, pulse, respiration); height, weight, and body mass index (BMI); head, eye, ear, nose, and throat (HEENT); thyroid assessment; cardiovascular and pulmonary assessment, and psychological assessment for presence of depression

(ii) Neck Circumference corrected for height (as a percentage of predicted neck circumference for height) is a more useful predictor than general obesity or BMI. Neck Circumference measured in centimetres adjusted for hypertension (+4cm), habitual snoring (+3cm), reported choking or gasping most nights (+3cm) is a sensitive predictor of Obstructive Sleep Apnoea. Adjusted Neck Circumference (ANC) < 48 &/or ANC 43-48 in the presence of other risk factors is indicative of specialist referral.

(iii) The commonly used Epworth Sleepiness scale (ESS) is a simple validated measure of daytime sleepiness and has been shown to be both a reliable and consistent method of distinguishing those with potential sleep disorders from the normal population. ESC of <10, considered indicative of pathological sleepiness and specialist referral is required.

(iv) The gold standard diagnostic test is; nocturnal polysomnographic diagnostic testing (NPSG Sleep Study).

(v) When the diagnosis declared at GCAA examination, the AME must not issue the medical certificate and must temporarily suspend the licence holder.

(vi) Start Medical treatment to manage OSA, the GCAA accept the use of CPAP (Continuous Positive Airway Pressure).Presence of any associated risk factors, as Obesity, Hypertension, Thyroid, Diabetes must be addressed and treated as per GCAA protocol.

(viii) The minimum grounding period of 4 weeks after starting CPAP treatment will be required before returning the pilot to flying duties ,he may be returned to duty once satisfactory recovery established with the treatment, with no subjective symptoms and ESS < 10.The AME should defer the case to GCAA for Aeromedical certification decision.

(ix) The GCAA will issue the medical certificate with OSL restriction and follow up recommendation, which should include 6 monthly Pulmonologist review and 3 monthly AME review in case of associated high BMI.

(x) Once granted the restricted medical certificate the pilot will be instructed not to fly if they experience any problems with their treatment, or at any time obtain a self reported ESS of > 10.

(xi) The GCAA will not consider removal of the OSL restriction, until the time when the pilot's medical condition satisfactory controlled, and all associated risk factors are eliminated or controlled.

AMC2 MED.B.020 Digestive system

(a) Oesophageal varices

Applicants with oesophageal varices should be assessed as unfit.

(b) Pancreatitis

Applicants with pancreatitis should be assessed as unfit pending satisfactory recovery.

(c) Gallstones

1. Applicants with a single asymptomatic large gallstone or asymptomatic multiple gallstones may be assessed as fit.

2. Applicants with symptomatic single or multiple gallstones should be assessed as unfit. A fit assessment may be considered following gallstone removal.

(d) Inflammatory bowel disease

Applicants with an established diagnosis or history of chronic inflammatory bowel disease may be assessed as fit provided that the disease is stable and not likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(e) Peptic ulceration

Applicants with peptic ulceration should be assessed as unfit pending full recovery.

(f) Abdominal surgery

1. Abdominal surgery is disqualifying. A fit assessment may be considered if recovery is complete, the applicant is asymptomatic and there is only a minimal risk of secondary complication or recurrence.

2. Applicants who have undergone a surgical operation on the digestive tract or its adnexa, involving a total or partial excision or a diversion of any of these organs, should be assessed as unfit until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable licence(s).

AMC2 MED.B.025 Metabolic and endocrine systems

(a) Metabolic, nutritional or endocrine dysfunction

Metabolic, nutritional or endocrine dysfunction is disqualifying. A fit assessment may be considered if the condition is asymptomatic, clinically compensated and stable.

(b) Obesity

Obese applicants may be assessed as fit only if the excess weight is not likely to interfere with the safe exercise of the applicable licence(s).

(c) Addison's disease

Applicants with Addison's disease may be assessed as fit provided that cortisone is carried and available for use whilst exercising the privileges of the licence.

(d) Gout

Applicants with acute gout should be assessed as unfit until asymptomatic.

(e) Thyroid dysfunction

Applicants with thyroid disease may be assessed as fit once a stable euthyroid state is attained.

(f) Abnormal glucose metabolism

Glycosuria and abnormal blood glucose levels require investigation. A fit assessment may be considered if normal glucose tolerance is demonstrated (low renal threshold) or impaired glucose tolerance is fully controlled by diet and regularly reviewed.

(g) Diabetes mellitus

Applicants with diabetes mellitus may be assessed as fit. The use of antidiabetic medications that are not likely to cause hypoglycaemia may be acceptable.

GM2 MED.B.025 Metabolic and endocrine systems

For guidelines on fitness assessment and certification requirements please refer to GM1 MED.B.025 Metabolic and endocrine system.

2. Class 2 applicant with Type 2 diabetics fully controlled on diet alone may be fit for unrestricted medical certificates, subject to detailed follow-up at periodic medical examinations or at least annually.

(b) The use of oral hypoglycemic drugs may be acceptable for flying duties with certain limitation with its use as a single agent (e.g. Biguanides, Thiazolidinedione or Alpha-glucosidase inhibitors and Sitagliptin).

(c) Combination of agents may be considered on a case by case basis, provided there is no evidence of hypoglycaemia.

AMC2 MED.B.030 Haematology

(a) Abnormal haemoglobin

Haemoglobin should be tested when clinically indicated.

(b) Anaemia

Applicants with anaemia demonstrated by a reduced haemoglobin level or low haematocrit may be assessed as fit once the primary cause has been treated and the haemoglobin or haematocrit has stabilised at a satisfactory level.

(c) Polycythaemia

Applicants with polycythaemia may be assessed as fit if the condition is stable and no associated pathology is demonstrated.

(d) Haemoglobinopathy

Applicants with a haemoglobinopathy may be assessed as fit if minor thalassaemia or other haemoglobinopathy is diagnosed without a history of crises and where full functional capability is demonstrated.

(e) Coagulation and haemorrhagic disorders

Applicants with a coagulation or haemorrhagic disorder may be assessed as fit if there is no likelihood of significant bleeding.

(f) Thrombo-embolic disorders

Applicants with a thrombotic disorder may be assessed as fit if there is no likelihood of significant clotting episodes.

(g) Disorders of the lymphatic system

Applicants with significant enlargement of the lymphatic glands or haematological disease may be assessed as fit if the condition is unlikely to interfere with the safe exercise of the privileges of the applicable licence(s). Applicants may be assessed as fit in cases of acute infectious process which is fully recovered or Hodgkin's lymphoma or other lymphoid malignancy which has been treated and is in full remission.

(h) Leukaemia

1. Applicants with acute leukaemia may be assessed as fit once in established remission.

2. Applicants with chronic leukaemia may be assessed as fit after a period of demonstrated stability.

3. In cases (1) and (2) above there should be no history of central nervous system involvement and no continuing side effects from treatment of flight safety importance. Haemoglobin and platelet levels should be satisfactory. Regular follow- up is required.

(i) Splenomegaly

Applicants with splenomegaly may be assessed as fit if the enlargement is minimal, stable and no associated pathology is demonstrated or if the enlargement is minimal and associated with another acceptable condition.

AMC2 MED.B.035 Genitourinary system

(a) Renal disease

Applicants presenting with renal disease may be assessed as fit if blood pressure is satisfactory and renal function is acceptable. The requirement for dialysis is disqualifying.

(b) Urinary calculi

1. Applicants presenting with one or more urinary calculi should be assessed as unfit.

2. Applicants with an asymptomatic calculus or a history of renal colic require investigation.

3. While awaiting assessment or treatment, a fit assessment with a safety pilot limitation may be considered.

4. After successful treatment the applicant may be assessed as fit.

5. Applicants with parenchymal residual calculi may be assessed as fit.

(c) Renal/urological surgery

1. Applicants who have undergone a major surgical operation on the urinary tract or the urinary apparatus involving a total or partial excision or a diversion of any of its organs should be assessed as unfit until such time as the effects of the operation are no longer likely to cause incapacity in flight. After other urological surgery, a fit assessment may be considered if the applicant is completely asymptomatic, there is minimal risk of secondary complication or recurrence presenting with renal disease, if blood pressure is satisfactory and renal function is acceptable. The requirement for dialysis is disqualifying.

2. An applicant with compensated nephrectomy without hypertension or uraemia may be assessed as fit.

3. Applicants who have undergone renal transplantation may be considered for a fit assessment if it is fully compensated and with only minimal immuno-suppressive therapy.

4. Applicants who have undergone total cystectomy may be considered for a fit assessment if there is satisfactory urinary function, no infection and no recurrence of primary pathology.

AMC2 MED.B.040 Infectious diseases

(a) Tuberculosis

Applicants with active tuberculosis should be assessed as unfit until completion of therapy.

(b) HIV infection

HIV positive is disqualifying.

AMC2 MED.B.045 Obstetrics and gynaecology

(a) Gynaecological surgery

An applicant who has undergone a major gynaecological operation should be assessed as unfit until such time as the effects of the operation are not likely to interfere with the safe exercise of the privileges of the licence(s).

(b) Pregnancy

1. A pregnant licence holder may be assessed as fit during the first 26 weeks of gestation following satisfactory obstetric evaluation.

2. Licence privileges may be resumed upon satisfactory confirmation of full recovery following confinement or termination of pregnancy.

AMC2 MED.B.050 Musculoskeletal system

(a) An applicant with any significant sequela from disease, injury or congenital abnormality affecting the bones, joints, muscles or tendons with or without surgery should require full evaluation prior to fit assessment.

(b) In cases of limb deficiency, a fit assessment may be considered following a satisfactory medical flight test.

(c) An applicant with inflammatory, infiltrative, traumatic or degenerative disease of the musculoskeletal system may be assessed as fit, provided the condition is in remission and the applicant is taking no disqualifying medication and has satisfactorily completed a medical flight test. A limitation to specified aircraft type(s) may be required.

(d) Abnormal physique or muscular weakness may require a satisfactory medical flight test. A limitation to specified aircraft type(s) may be required.

AMC2 MED.B.055 Psychiatry

(a) Psychotic disorder

A history, or the occurrence, of a functional psychotic disorder is disqualifying unless in certain rare cases a cause can be unequivocally identified as one which is transient, has ceased and will not recur.

(b) Psychotropic substances

Use or abuse of psychotropic substances likely to affect flight safety is disqualifying. If a stable maintenance psychotropic medication is confirmed, a fit assessment with an OSL limitation may be considered.

(c) Schizophrenia, schizotypal or delusional disorder

An applicant with a history of schizophrenia, schizotypal or delusional disorder may only be considered fit if the original diagnosis was inappropriate or inaccurate as confirmed by psychiatric evaluation or, in the case of a single episode of delirium, provided that the applicant has suffered no permanent impairment.

(d) Disorders due to alcohol or other substance use

1. Mental or behavioural disorders due to alcohol or other substance use, with or without dependency, are disqualifying.

2. A fit assessment may be considered in consultation with the licensing authority after a period of two years documented sobriety or freedom from substance use. A fit assessment may be considered earlier with an OSL or OPL limitation. Depending on the individual case, treatment and review may include:

    (i) in-patient treatment of some weeks followed

    by:

        (A) review by a psychiatric specialist; and

        (B) ongoing review, including blood testing and peer reports, which may be required indefinitely.

GM2 MED B.055

Please refer GM1 MED.B.055,(1) Mood disorder for certification requirements . Class 2 may be certified with OSL restriction.

AMC2 MED.B.060 Psychology

Applicants with a psychological disorder may need to be referred for psychological or neuropsychiatric opinion and advice.

AMC2 MED.B.065 Neurology

(a) Epilepsy

An applicant may be assessed as fit if:

1. there is a history of a single afebrile epileptiform seizure, considered to have a very low risk of recurrence;

2. there has been no recurrence after at least 10 years off treatment;

3. there is no evidence of continuing predisposition to epilepsy.

(b) Conditions with a high propensity for cerebral dysfunction

An applicant with a condition with a high propensity for cerebral dysfunction should be assessed as unfit. A fit assessment may be considered after full evaluation.

(c) Neurological disease

Any stationary or progressive disease of the nervous system which has caused or is likely to cause a significant disability is disqualifying. In case of minor functional loss associated with stationary disease, a fit assessment may be considered after full evaluation.

(d) Head injury

An applicant with a head injury which was severe enough to cause loss of consciousness or is associated with penetrating brain injury may be assessed as fit if there has been a full recovery and the risk of epilepsy is sufficiently low.

AMC2 MED.B.070 Visual system

(a) Eye examination

1. At each aero-medical revalidation examination an assessment of the visual fitness of the licence holder should be undertaken and the eyes should be examined with regard to possible pathology. Conditions which indicate further ophthalmological examination include, but are not limited to, a substantial decrease in the uncorrected visual acuity, any decrease in best corrected visual acuity and/or the occurrence of eye disease, eye injury, or eye surgery.

2. At the initial assessment, the examination should include:

   (i) history;

   (ii) visual acuities - near, intermediate and distant vision (uncorrected and with best optical correction if needed);

   (iii) examination of the external eye, anatomy, media and fundoscopy;

(iv) ocular motility;

(v) binocular vision;

(vi) colour vision and visual fields;

(vii) further examination on clinical indication.

3. At the initial assessment the applicant should submit a copy of the recent spectacle prescription if visual correction is required to meet the visual requirements.

(b) Routine eye examination

A routine eye examination should include:

1. history;

2. visual acuities - near, intermediate and distant vision (uncorrected and with best optical correction if needed);

3. examination of the external eye, anatomy, media and fundoscopy;

4. further examination on clinical indication.

(c) Visual acuity

In an applicant with amblyopia, the visual acuity of the amblyopic eye should be 6/18 (0,3) or better. The applicant may be assessed as fit, provided the visual acuity in the other eye is 6/6 (1,0) or better, with or without correction, and no significant pathology can be demonstrated.

(d) Substandard vision

1. Reduced stereopsis, abnormal convergence not interfering with near vision and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia may be acceptable.

2. An applicant with substandard vision in one eye may be assessed as fit subject to a satisfactory flight test if the better eye:

(i) achieves distant visual acuity of 6/6 (1,0), corrected or uncorrected;

(ii) achieves intermediate visual acuity of N14 and N5 for near;

(iii) has no significant pathology.

3. An applicant with a visual field defect may be considered as fit if the binocular visual field is normal and the underlying pathology is acceptable.

(e) Eye surgery

1. The assessment after eye surgery should include an ophthalmological examination.

2. After refractive surgery a fit assessment may be considered provided that there is stability of refraction, there are no postoperative complications and no increase in glare sensitivity.

3. After cataract, retinal or glaucoma surgery a fit assessment may be considered once recovery is complete.

(f) Correcting lenses

Correcting lenses should permit the licence holder to meet the visual requirements at all distances.

AMC2 MED B.075 Colour vision

(a) The Ishihara test (24 plate version) is considered passed if the first 15 plates, presented in a random order, are identified without error.

(b) Those failing the Ishihara test should be examined by a GCAA approved advanced colour testing (CAD)

(c) Colour vision should be tested on clinical indication at revalidation or renewal examinations.

AMC2 MED.B.080 Otorhino-laryngology

(a) Hearing

1. The applicant should understand correctly conversational speech when tested with each ear at a distance of 2 metres from and with the applicant's back turned towards the AME.

2. An applicant with hypoacusis may be assessed as fit if a speech discrimination test or functional cockpit hearing test demonstrates satisfactory hearing ability. An applicant for an instrument rating with hypoacusis should be assessed in consultation with the licensing authority.

3. If the hearing requirements can be met only with the use of hearing aids, the hearing aids should provide optimal hearing function, be well tolerated and suitable for aviation purposes.

(b) Examination

An ear, nose and throat (ENT) examination should form part of all initial, revalidation and renewal examinations.

(c) Ear conditions

1. An applicant with an active pathological process, acute or chronic, of the internal or middle ear should be assessed as unfit until the condition has stabilised or there has been a full recovery.

2. An applicant with an unhealed perforation or dysfunction of the tympanic membranes should be assessed as unfit. An applicant with a single dry perforation of non-infectious origin which does not interfere with the normal function of the ear may be considered for a fit assessment.

(d) Vestibular disturbance

An applicant with disturbance of vestibular function should be assessed as unfit pending full recovery.

(e) Sinus dysfunction

An applicant with any dysfunction of the sinuses should be assessed as unfit pending full recovery.

(f) Oral/upper respiratory tract infections

A significant acute or chronic infection of the oral cavity or upper respiratory tract is disqualifying until full recovery.

(g) Speech disorder

A significant disorder of speech or voice should be disqualifying.

(h) Air passage restrictions

An applicant with significant restriction of the nasal air passage on either side, or significant malformation of the oral cavity or upper respiratory tract may be assessed as fit if ENT evaluation is satisfactory.

(i) Eustachian tube function

An applicant with significant dysfunction of the Eustachian tubes may be assessed as fit in consultation with the licensing authority.

AMC2 MED.B.085 Dermatology

In cases where a dermatological condition is associated with a systemic illness, full consideration should be given to the underlying illness before a fit assessment can be considered.

AMC MED.B.090 Oncology

(a) Applicants may be considered for a fit assessment after treatment for malignant disease if:

1. there is no evidence of residual malignant disease after treatment;

2. time appropriate to the type of tumour has elapsed since the end of treatment;

3. the risk of in-flight incapacitation from a recurrence or metastasis is sufficiently low;

4. there is no evidence of short or long-term sequelae from treatment that may adversely affect flight safety;

5. special attention is paid to applicants who have received anthracyline chemotherapy;

6. arrangements for an oncological follow-up have been made for an appropriate period of time.

(b) Applicants with pre-malignant conditions of the skin may be assessed as fit if treated or excised as necessary and there is a regular follow-up.

Section 4 - Specific requirements for LAPL medical certificates

AMC1 MED.B.095 Medical examination and/or assessment of applicants for LAPL medical certificates

When a specialist evaluation is required under this section, the aero-medical assessment of the applicant should be performed by an AeMC, an AME,

AMC2 MED.B.095 Cardiovascular system

(a) Examination

Pulse and blood pressure should be recorded at each examination.

(b) General

1. Cardiovascular risk factor assessment

An accumulation of risk factors (smoking, family history, lipid abnormalities, hypertension, etc.) requires cardiovascular evaluation.

2. Aortic aneurysm

Applicants with an aortic aneurysm may be assessed as fit subject to satisfactory cardiological evaluation and a regular follow-up.

3. Cardiac valvular abnormalities

Applicants with a cardiac murmur may be assessed as fit if the murmur is assessed as being of no pathological significance.

4. Valvular surgery

After cardiac valve replacement or repair a fit assessment may be considered if post-operative cardiac function and investigations are satisfactory. Anticoagulation, if needed, should be stable.

5. Other cardiac disorders:

   (i) Applicants with other cardiac disorders may be assessed as fit subject to satisfactory cardiological assessment.

   (ii) Applicants with symptomatic hypertrophic cardiomyopathy should be assessed as unfit.

(c) Blood pressure

1. When the blood pressure consistently exceeds 160 mmHg systolic and/or 95 mmHg diastolic, with or without treatment, the applicant should be assessed as unfit.

2. The initiation of medication for the control of blood pressure should require a period of temporary suspension of the medical certificate to establish the absence of significant side effects.

(d) Coronary artery disease

1. Applicants with suspected myocardial ischaemia should be investigated before a fit assessment can be considered.

2. Applicants with angina pectoris requiring medication for cardiac symptoms should be assessed as unfit.

3. After an ischaemic cardiac event, including myocardial infarction or revascularisation, applicants without symptoms should have reduced any vascular risk factors to an appropriate level. Medication, when used to control cardiac symptoms, is not acceptable. All applicants should be on acceptable secondary prevention treatment.

4. In cases under (1), (2) and (3) above, applicants who have had a satisfactory cardiological evaluation to include an exercise test or equivalent that is negative for ischaemia may be assessed as fit.

(e) Rhythm and conduction disturbances

1. Applicants with a significant disturbance of cardiac rhythm or conduction should be assessed as unfit unless a cardiological evaluation concludes that the disturbance is not likely to interfere with the safe exercise of the privileges of the LAPL.

2. Pre-excitation

   Applicants with ventricular pre-excitation may be assessed as fit subject to satisfactory cardiological evaluation. Applicants with ventricular pre-excitation associated with a significant arrhythmia should be assessed as unfit.

3. Pacemaker

   A fit assessment may be considered subject to satisfactory cardiological evaluation.

AMC3 MED.B.095 Respiratory system

(a) Asthma and chronic obstructive airways disease

Applicants with asthma or minor impairment of pulmonary function may be assessed as fit if the condition is considered stable with satisfactory pulmonary function and medication is compatible with flight safety. Systemic steroids may be disqualifying depending on dosage needed and corresponding side effects.

(b) Sarcoidosis

1. Applicants with active sarcoidosis should be assessed as unfit. Investigation should be undertaken with respect to the possibility of systemic involvement. A fit assessment may be considered once the disease is inactive.

2. Applicants with cardiac sarcoidosis should be assessed as unfit.

(c) Pneumothorax

1. Applicants with spontaneous pneumothorax may be assessed as fit subject to satisfactory respiratory evaluation following full recovery from a single spontaneous pneumothorax or following recovery from surgical treatment for a recurrent pneumothorax.

2. Applicants with traumatic pneumothorax may be assessed as fit following full recovery.

(d) Thoracic surgery

Applicants who have undergone major thoracic surgery may be assessed as fit following full recovery.

(e) Sleep apnoea syndrome/sleep disorder

Applicants with unsatisfactorily treated sleep apnoea syndrome should be assessed as unfit.

AMC4 MED.B.095 Digestive system

(a) Gallstones

Applicants with symptomatic gallstones should be assessed as unfit. A fit assessment may be considered following gallstone removal.

(b) Inflammatory bowel disease

Applicants with an established diagnosis or history of chronic inflammatory bowel disease may be assessed as fit provided that the disease is stable and not likely to interfere with the safe exercise of the privileges of the licence.

(c) Abdominal surgery

Applicants who have undergone a surgical operation on the digestive tract or its adnexae may be assessed as fit provided recovery is complete, they are asymptomatic and there is only a minimal risk of secondary complication or recurrence.

(d) Pancreatitis

Applicants with pancreatitis may be assessed as fit after satisfactory recovery.

AMC5 MED.B.095 Metabolic and endocrine systems

(a) Metabolic, nutritional or endocrine dysfunction

Applicants with metabolic, nutritional or endocrine dysfunction may be assessed as fit subject to demonstrated stability of the condition and satisfactory aero-medical evaluation.

(b) Obesity

Obese applicants may be assessed as fit if the excess weight is not likely to interfere with the safe exercise of the licence.

(c) Thyroid dysfunction

Applicants with thyroid disease may be assessed as fit once a stable euthyroid state is attained.

(d) Diabetes mellitus

1. The use of antidiabetic medications that are not likely to cause hypoglycaemia should be acceptable for a fit assessment.

2. Applicants with diabetes mellitus Type 1 should be assessed as unfit.

3. Applicants with diabetes mellitus Type 2 treated with insulin may be assessed as fit with limitations for revalidation if blood sugar control has been achieved and the process under (e) and (f) below is followed. An OSL limitation is required. A TML limitation for 12 months may be needed to ensure compliance with the follow-up requirements below. Licence privileges should be restricted to aeroplanes and sailplanes only.

(e) Aero-medical assessment by, or under the guidance of, the licensing authority:

1. A diabetology review at yearly intervals, including:

   (i) symptom review;

   (ii) review of data logging of blood sugar;

   (iii) cardiovascular status. Exercise ECG at age 40, at 5-yearly intervals thereafter and on clinical indication, including an accumulation of risk factors;

   (iv) nephropathy/ nephropathy status.

2. Ophthalmological review at yearly intervals, including:

(i) visual fields Humphrey-perimeter;

(ii) retinas full dilatation slit lamp and documentation;

(iii) cataract clinical screening.

The development of retinopathy requires a full ophthalmological review.

3. Blood testing at 6-monthly intervals:

(i) HbA1c; target is 7,5–8,5 %;

(ii) renal profile;

(iii) liver profile;

(iv) lipid profile.

4. Applicants should be assessed as temporarily unfit after:

(i) changes of medication/insulin leading to a change to the testing regime until stable blood sugar control can be demonstrated;

(ii) a single unexplained episode of severe hypoglycaemia until stable blood sugar control can be demonstrated.

5. Applicants should be assessed as unfit in the following cases:

(i) loss of hypoglycaemia awareness;

(ii) development of retinopathy with any visual field loss;

- significant nephropathy;

(iv) any other complication of the disease where flight safety may be jeopardised.

(f) Pilot responsibility

Blood sugar testing is carried out during non-operational and operational periods. A whole blood glucose measuring device with memory should be carried and used. Equipment for continuous glucose monitoring (CGMS) should not be used. Pilots should prove to the AME or AeMC or licensing authority that testing has been performed as indicated below and with which results.

1. Testing during non-operational periods: normally 3–4 times/day or as recommended by the treating physician, and on any awareness of hypoglycaemia.

2. Testing frequency during operational periods:

(i) 120 minutes before departure;

(ii) <30 minutes before departure;

- 60 minutes during flight;
- 30 minutes before landing.

3. Actions following glucose testing:

(i) 120 minutes before departure: if the test result is >15 mmol/l, piloting should not be commenced.

(ii) 10–15g of carbohydrate should be ingested and a re-test performed within 30 minutes if:

(A) any test result is <4,5 mmol/l;

(B) the pre-landing test measurement is missed or a subsequent go-around/diversion is performed.

GM1 MED.B.095 Diabetes mellitus Type 2 treated with insulin

(a) Pilots and their treating physician should be aware that if the HbA1c target level was set to normal (non-diabetic) levels, this will significantly increase the chance of hypoglycaemia. For safety reasons the target level of HbA1c is therefore set to 7,5–8,5 % even though there is evidence that lower HbA1c levels are correlated with fewer diabetic complications.

(b) The safety pilot should be briefed pre-flight on the potential condition of the pilot. The results of blood sugar testing before and during flight should be shared with the safety pilot for the acceptability of the values obtained.

AMC6 MED.B.095 Haematology

Applicants with a haematological condition, such as:

(a) abnormal haemoglobin including, but not limited to, anaemia, polycythaemia or haemoglobinopathy;

(b) coagulation, haemorrhagic or thrombotic disorder;

(c) significant lymphatic enlargement;

(d) acute or chronic leukaemia;

(e) enlargement of the spleen

may be assessed as fit subject to satisfactory aero-medical evaluation.

AMC7 MED.B.095 Genitourinary system

(a) Applicants with a genitourinary disorder, such as:

1. renal disease; or

2. one or more urinary calculi, or a history of renal colic

may be assessed as fit subject to satisfactory renal/urological evaluation.

- Applicants who have undergone a major surgical operation in the urinary apparatus may be assessed as fit following full recovery.

AMC8 MED.B.095 Infectious disease

HIV positive applicant is disqualified from flying.

AMC9 MED.B.095 Obstetrics and gynaecology

(a) Pregnancy

Holders of a LAPL medical certificate should only exercise the privileges of their licences until the 26th week of gestation under routine antenatal care.

(b) Applicants who have undergone a major gynaecological operation may be assessed as fit after full recovery.

AMC10 MED.B.095 Musculoskeletal system

Applicants should have satisfactory functional use of the musculoskeletal system to enable the safe exercise of the privileges of the licence.

AMC11 MED.B.095 Psychiatry

(a) Applicants with a mental or behavioural disorder due to alcohol or other substance use should be assessed as unfit pending recovery and freedom from substance use and subject to satisfactory psychiatric evaluation after treatment.

(b) Applicants with an established history or clinical diagnosis of schizophrenia, schizotypal or delusional disorder should be assessed as unfit.

(c) Psychotropic substances

Use or abuse of psychotropic substances likely to affect flight safety should be disqualifying. If a stable maintenance psychotropic medication is confirmed, a fit assessment with an appropriate limitation may be considered.

(d) Applicants with a psychiatric condition, such as:

1. mood disorder;

2. neurotic disorder;

3. personality disorder;

4. mental or behavioural disorder

should undergo satisfactory psychiatric evaluation before a fit assessment may be considered.

(e) Applicants with a history of significant or repeated acts of deliberate self-harm should undergo satisfactory psychiatric and/or psychological evaluation before a fit assessment can be considered.

AMC12 MED.B.095 Psychology

Applicants with a psychological disorder may need to be referred for psychological opinion and advice.

AMC13 MED.B.095 Neurology

(a) Epilepsy and seizures

1. Applicants with an established diagnosis of and under treatment for epilepsy should be assessed as unfit. A re-assessment after all treatment has been stopped for at least 5 years should include a neurological evaluation.

2. Applicants may be assessed as fit if:

(i) there is a history of a single afebrile epileptiform seizure considered to have a very low risk of recurrence; and

(ii) there has been no recurrence after at least 5 years off treatment; or

(iii) a cause has been identified and treated and there is no evidence of continuing predisposition to epilepsy.

(b) Neurological disease

1. Applicants with any stationary or progressive disease of the nervous system which has caused or is likely to cause a significant disability should be assessed as unfit. The AME or AeMC should assess these applicants taking into account the privileges of the licence held and the risk involved. An OPL limitation may be appropriate if a fit assessment is made.

2. In case of minor functional loss associated with stationary disease, a fit assessment may be considered after full evaluation.

(c) Head injury

Applicants with a head injury which was severe enough to cause loss of consciousness or is associated with penetrating brain injury may be assessed as fit if there has been a full recovery and the risk of epilepsy is sufficiently low.

(d) Spinal or peripheral nerve injury

Applicants with a history or diagnosis of spinal or peripheral nerve injury may be assessed as fit if neurological review and musculoskeletal assessments are satisfactory.

AMC14 MED.B.095 Visual system

(a) Applicants should not possess any abnormality of the function of the eyes or their adnexa or any active pathological condition, congenital or acquired, acute or chronic, or any sequelae of eye surgery or trauma, which is likely to interfere with the safe exercise of the privileges of the applicable licence(s).

(b) Eye examination

The examination should include visual acuities (near, intermediate and distant vision) and visual field.

(c) Visual acuity

1. Visual acuity with or without corrective lenses should be 6/9 (0,7) binocularly and 6/12 (0,5) in each eye.

2. Applicants who do not meet the required visual acuity should be assessed by an AME or AeMC, taking into account the privileges of the licence held and the risk involved.

3. Applicants should be able to read an N5 chart (or equivalent) at 30–50cms and an N14 chart (or equivalent) at 100cms, with correction if prescribed.

(d) Substandard vision

Applicants with substandard vision in one eye may be assessed as fit if the better eye:

1. achieves distant visual acuity of 6/6 (1,0), corrected or uncorrected;

2. achieves distant visual acuity less than 6/6 (1,0) but not less than 6/9 (0,7), after ophthalmological evaluation.

(e) Visual field defects

Applicants with a visual field defect may be assessed as fit if the binocular visual field or monocular visual field is normal.

(f) Eye surgery

1. After refractive surgery, a fit assessment may be considered, provided that there is stability of refraction, there are no post-operative complications and no significant increase in glare sensitivity.

2. After cataract, retinal or glaucoma surgery a fit assessment may be considered once recovery is complete.

(g) Correcting lenses

Correcting lenses should permit the licence holder to meet the visual requirements at all distances.

AMC15 MED.B.095 Colour vision

Applicants for a night rating should correctly identify 9 of the first 15 plates of the 24-plate edition of Ishihara pseudoisochromatic plates or should be colour safe.

AMC16 MED.B.095 Otorhino-laryngology

(a) Hearing

1. Applicants should understand correctly conversational speech when tested at a distance of 2 metres from and with the applicant's back turned towards the examiner.

2. Applicants with hypoacusis should demonstrate satisfactory functional hearing ability.

(b) Ear conditions

Applicants for a LAPL medical certificate with:

1. an active pathological process, acute or chronic, of the internal or middle ear;

2. unhealed perforation or dysfunction of the tympanic membrane(s);

3. disturbance of vestibular function;

4. significant restriction of the nasal passages;

5. sinus dysfunction;

6. significant malformation or significant, acute or chronic infection of the oral cavity or upper respiratory tract; or

7. significant disorder of speech or voice

should undergo further medical examination and assessment to establish that the condition does not interfere with the safe exercise of the privileges of the licence.

SUBPART C - Requirements for medical fitness of cabin crew

Section 1 - General requirements

AMC1 MED.C.005 Aero-medical assessments

(a) When conducting aero-medical examination and/or assessments of cabin crew, their medical fitness should be assessed with particular regard to their physical and mental ability to:

1. undergo the training required for cabin crew to acquire and maintain competence, e.g. actual fire-fighting, slide descending, using Protective Breathing Equipment (PBE) in a simulated smoke-filled environment, providing first aid;

2. manipulate the aircraft systems and emergency equipment to be used by cabin crew, e.g. cabin management systems, doors/exits, escape devices, fire extinguishers, taking also into account the type of aircraft operated e.g. narrow- bodied or wide-bodied, single/multi-deck, single/multi-crew operation;

3. continuously sustain the aircraft environment whilst performing duties, e.g. altitude, pressure, re-circulated air, noise; and the type of operations such as short/medium/long/ultralong haul; and

4. perform the required duties and responsibilities efficiently during normal and abnormal operations, and in emergency situations and psychologically demanding circumstances e.g. assistance to crew members and passengers in case of decompression; stress management, decision-making, crowd control and effective crew coordination, management of disruptive passengers and of security threats. When relevant, operating as single cabin crew should also be taken into account when assessing the medical fitness of cabin crew.

Section 2 - Requirements for aero-medical assessment of cabin crew

AMC1 MED.C.025 Content of aero-medical assessments

Aero-medical examinations and/or assessments of cabin crew members should be conducted according to the specific medical requirements in AMC2 to AMC18 MED.C.025.

AMC2 MED.C.025 Cardiovascular system

(a) Examination

1. A standard 12-lead resting electrocardiogram (ECG) and report should be completed on clinical indication, at the first examination after the age of 40 and then at least every five years after the age of 50. If cardiovascular risk factors such as smoking, abnormal cholesterol levels or obesity are present, the intervals of resting ECGs should be reduced to two years.

2. Extended cardiovascular assessment should be required when clinically indicated.

(b) Cardiovascular system - general

1. Cabin crew members with any of the following conditions:

(i) aneurysm of the thoracic or supra-renal abdominal aorta, before surgery;

(ii) significant functional abnormality of any of the heart valves; or

(iii) heart or heart/lung transplantation should be assessed as unfit.

2. Cabin crew members with an established diagnosis of one of the following conditions:

(i) peripheral arterial disease before or after surgery;

(ii) aneurysm of the abdominal aorta, before or after surgery;

- minor cardiac valvular abnormalities;

(iv) after cardiac valve surgery;

(v) abnormality of the pericardium, myocardium or endocardium;

(vi) congenital abnormality of the heart, before or after corrective surgery;

(vii) a cardiovascular condition requiring systemic anticoagulant therapy;

(viii) recurrent vasovagal syncope;

(ix) arterial or venous thrombosis; or

(x) pulmonary embolism

should be evaluated by a cardiologist before a fit assessment can be considered.

(c) Blood pressure

Blood pressure should be recorded at each examination.

1. The blood pressure should be within normal limits.

2. The initiation of medication for the control of blood pressure should require a period of temporary suspension of fitness to establish the absence of any significant side effects.

(d) Coronary artery disease

1. Cabin crew members with:

(i) cardiac ischaemia;

(ii) symptomatic coronary artery disease; or

(iii) symptoms of coronary artery disease controlled by medication should be assessed as unfit.

2. Cabin crew members who are asymptomatic after myocardial infarction or surgery for coronary artery disease should have fully recovered before a fit assessment can be considered.

(e) Rhythm/conduction disturbances

1. Cabin crew members with any significant disturbance of cardiac conduction or rhythm should undergo cardiological evaluation before a fit assessment can be considered.

2. Cabin crew members with a history of:

(i) ablation therapy; or

(ii) pacemaker implantation

should undergo satisfactory cardiovascular evaluation before a fit assessment can be made.

3. Cabin crew members with:

(iii) symptomatic sinoatrial disease;

(iv) complete atrioventricular block;

(v) symptomatic QT prolongation;

(vi) an automatic implantable defibrillating system; or

(v) a ventricular anti-tachycardia pacemaker should be assessed as unfit.

AMC3 MED.C.025 Respiratory system

(a) Cabin crew members with significant impairment of pulmonary function should be assessed as unfit. A fit assessment may be considered once pulmonary function has recovered and is satisfactory.

(b) Cabin crew members should be required to undergo pulmonary function tests on clinical indication.

(c) Cabin crew members with a history or established diagnosis of:

1. asthma;

2. active inflammatory disease of the respiratory system;

3. active sarcoidosis;

4. pneumothorax;

5. sleep apnoea syndrome/sleep disorder; or

6. major thoracic surgery

should undergo respiratory evaluation with a satisfactory result before a fit assessment can be considered.

(d) Cabin crew members who have undergone a pneumonectomy should be assessed as unfit.

AMC4 MED.C.025 Digestive system

(a) Cabin crew members with any sequelae of disease or surgical intervention in any part of the digestive tract or its adnexa likely to cause incapacitation in flight, in particular any obstruction due to stricture or compression, should be assessed as unfit.

(b) Cabin crew members should be free from herniae that might give rise to incapacitating symptoms.

(c) Cabin crew members with disorders of the gastro-intestinal system, including:

1. recurrent dyspeptic disorder requiring medication;

2. pancreatitis;

3. symptomatic gallstones;

4. an established diagnosis or history of chronic inflammatory bowel disease; or

5. after surgical operation on the digestive tract or its adnexa, including surgery involving total or partial excision or a diversion of any of these organs

may be assessed as fit subject to satisfactory evaluation after successful treatment and full recovery after surgery.

AMC5 MED.C.025 Metabolic and endocrine systems

(a) Cabin crew members should not possess any functional or structural metabolic, nutritional or endocrine disorder which is likely to interfere with the safe exercise of their duties and responsibilities.

(b) Cabin crew members with metabolic, nutritional or endocrine dysfunction may be assessed as fit, subject to demonstrated stability of the condition and satisfactory aero- medical evaluation.

(c) Diabetes mellitus

1. Cabin crew members with diabetes mellitus requiring insulin may be assessed as fit if it can be demonstrated that adequate blood sugar control has been achieved and hypoglycaemia awareness is established and maintained. Limitations should be imposed as appropriate. A requirement to undergo specific regular medical examinations (SIC) and a restriction to operate only in multi-cabin crew operations should be placed as a minimum.

2. Cabin crew members with diabetes mellitus not requiring insulin may be assessed as fit if it can be demonstrated that adequate blood sugar control has been achieved and hypoglycaemia awareness, if applicable considering the medication, is achieved.

AMC6 MED.C.025 Haematology

Cabin crew members with a haematological condition, such as:

(a) abnormal haemoglobin including, but not limited to, anaemia, polycythaemia or haemoglobinopathy;

(b) coagulation, haemorrhagic or thrombotic disorder;

(c) significant lymphatic enlargement;

(d) acute or chronic leukaemia; or

(e) enlargement of the spleen

may be assessed as fit subject to satisfactory aero-medical evaluation.

AMC7 MED.C.025 Genitourinary system

(a) Urine analysis should form part of every aero-medical examination and/or assessment. The urine should not contain any abnormal element(s) considered to be of pathological significance.

(b) Cabin crew members with any sequela of disease or surgical procedures on the kidneys or the urinary tract, in particular any obstruction due to stricture or compression likely to cause incapacitation should be assessed as unfit.

(c) Cabin crew members with a genitourinary disorder, such as:

1. renal disease; or

2. a history of renal colic due to one or more urinary calculi

may be assessed as fit subject to satisfactory renal/urological evaluation.

(d) Cabin crew members who have undergone a major surgical operation in the urinary apparatus involving a total or partial excision or a diversion of its organs should be assessed as unfit and be re-assessed after full recovery before a fit assessment can be made.

AMC8 MED.C.025 Infectious disease

Cabin crew members who are HIV positive will not be assessed as fit.

AMC9 MED.C.025 Obstetrics and gynaecology

(a) Cabin crew members who have undergone a major gynaecological operation should be assessed as unfit until full recovery.

(b) Pregnancy

1. A pregnant cabin crew member may be assessed as fit only during the first 16 weeks of gestation following review of the obstetric evaluation by the AME.

2. A limitation not to perform duties as single cabin crew member should be considered.

3. The AME should provide written advice to the cabin crew member and supervising physician regarding potentially significant complications of pregnancy resulting from flying duties.

AMC10 MED.C.025 Musculoskeletal system

(a) A cabin crew member should have sufficient standing height, arm and leg length and muscular strength for the safe exercise of their duties and responsibilities.

(b) A cabin crew member should have satisfactory functional use of the musculoskeletal system.

AMC11 MED.C.025 Psychiatry

(a) Cabin crew members with a mental or behavioural disorder due to alcohol or other problematic substance use should be assessed as unfit pending recovery and freedom from problematic substance use and subject to satisfactory psychiatric evaluation.

(b) Cabin crew members with an established history or clinical diagnosis of schizophrenia, schizotypal or delusional disorder should be assessed as unfit.

(c) Cabin crew members with a psychiatric condition such as:

1. mood disorder;
2. neurotic disorder;
3. personality disorder; or
4. mental or behavioural disorder

should undergo satisfactory psychiatric evaluation before a fit assessment can be made.

(d) Cabin crew members with a history of a single or repeated acts of deliberate self-harm should be assessed as unfit. Cabin crew members should undergo satisfactory psychiatric evaluation before a fit assessment can be considered.

AMC12 MED.C.025 Psychology

(a) Where there is established evidence that a cabin crew member has a psychological disorder, he/she should be referred for psychological opinion and advice.

1. The psychological evaluation may include a collection of biographical data, the review of aptitudes, and personality tests and psychological interview.
2. The psychologist should submit a report to the AME or OHMP, detailing the results and recommendation.

(d) The cabin crew member may be assessed as fit to perform cabin crew duties, with limitation if and as appropriate.

AMC13 MED.C.025 Neurology

(a) Cabin crew members with an established history or clinical diagnosis of:

1. epilepsy; or
2. recurring episodes of disturbance of consciousness of uncertain cause

should be assessed as unfit.

(b) Cabin crew members with an established history or clinical diagnosis of:

1. epilepsy without recurrence after five years of age and without treatment for more than ten years;

2. epileptiform EEG abnormalities and focal slow waves;

3. progressive or non-progressive disease of the nervous system;

4. a single episode of disturbance of consciousness of uncertain cause;

5. loss of consciousness after head injury;

6. penetrating brain injury; or

7. spinal or peripheral nerve injury

should undergo further evaluation before a fit assessment can be considered.

AMC14 MED.C.025 Visual system

(a) Examination

1. a routine eye examination should form part of the initial and all further assessments and/or examinations; and

2. an extended eye examination should be undertaken when clinically indicated.

(b) Distant visual acuity, with or without correction, should be with both eyes 6/9 or better.

(c) A cabin crew member should be able to read an N5 chart (or equivalent) at 30–50 cm, with correction if prescribed.

(d) Cabin crew members should be required to have normal fields of vision and normal binocular function.

(e) Cabin crew members who have undergone refractive surgery may be assessed as fit subject to satisfactory ophthalmic evaluation.

(f) Cabin crew members with diplopia should be assessed as unfit.

(g) Spectacles and contact lenses:

If satisfactory visual function is achieved only with the use of correction:

1. in the case of myopia, spectacles or contact lenses should be worn whilst on duty;

2. in the case of hyperopia, spectacles or contact lenses should be readily available for immediate use;

3. the correction should provide optimal visual function and be well tolerated;

4. orthokeratologic lenses should not be used.

AMC15 MED.C.025 Colour vision

Cabin crew members should be able to correctly identify 9 of the first 15 plates of the 24-plate edition of Ishihara pseudoisochromatic plates. Alternatively, cabin crew members should demonstrate that they are colour safe.

AMC16 MED.C.025 Otorhino-laryngology

(a) Hearing should be satisfactory for the safe exercise of cabin crew duties and responsibilities. Cabin crew with hypoacusis should demonstrate satisfactory functional hearing abilities.

(b) Examination

1. An ear, nose and throat (ENT) examination should form part of all examinations and/or assessments.
2. Hearing should be tested at all assessments and/or examinations:

   (i) the cabin crew member should understand correctly conversational speech when tested with each ear at a distance of 2 meters from and with the cabin crew member's back turned towards the examiner;

   (ii) notwithstanding (i) above, hearing should be tested with pure tone audiometry at the initial examination and when clinically indicated;;

   (iii) at initial examination the cabin crew member should not have a hearing loss of more than 35 dB at any of the frequencies 500 Hz, 1 000 Hz or 2 000 Hz, or more than 50 dB at 3 000 Hz, in either ear separately.

(c) Cabin crew members with:

1. an active pathological process, acute or chronic, of the internal or middle ear;

2. unhealed perforation or dysfunction of the tympanic membrane(s);

3. disturbance of vestibular function;

4. significant restriction of the nasal passages;

5. sinus dysfunction;

6. significant malformation or significant, acute or chronic infection of the oral cavity or upper respiratory tract;

7. significant disorder of speech or voice

should undergo further medical examination and assessment to establish that the condition does not interfere with the safe exercise of their duties and responsibilities.

AMC17 MED.C.025 Dermatology

In cases where a dermatological condition is associated with a systemic illness, full consideration should be given to the underlying illness before a fit assessment may be made.

AMC18 MED.C.025 Oncology

(a) After treatment for malignant disease, cabin crew members should undergo satisfactory oncological and aero-medical evaluation before a fit assessment may be considered.

(b) Cabin crew members with an established history or clinical diagnosis of intracerebral malignant tumour should be assessed as unfit. Considering the histology of the tumour, a fit assessment may be considered after successful treatment and full recovery.

GM1 MED.C.025 Content of aero-medical assessments

(a) When conducting aero-medical examinations and/or assessments, typical cabin crew duties as listed in (b) and (c), particularly those to be performed during abnormal operations and emergency situations, and cabin crew responsibilities to the travelling public should be considered in order to identify:

1. any physical and/or mental conditions that could be detrimental to the performance of the duties required from cabin crew; and

2. which examination(s), test(s) or investigation(s) should be undergone to complete an appropriate aero-medical assessment.

(b) Main cabin crew duties and responsibilities during day-to-day normal operations

1. During pre/post-flight ground operations with/without passengers on board:

(vii) monitoring of situation inside the aircraft cabin and awareness of conditions outside the aircraft including observation of visible aircraft surfaces and information to flight crew of any surface contamination such as ice or snow;

(ii) assistance to special categories of passengers (SCPs) such as infants and children (accompanied or unaccompanied), persons with disabilities or reduced mobility, medical cases with or without medical escort, and inadmissible, deportees and passengers in custody;

(viii) observation of passengers (any suspicious behaviour, passengers under the influence of alcohol and/or drugs, mentally disturbed), observation of potential able-bodied persons, crowd control during boarding and disembarkation;

(iv) safe stowage of cabin luggage, safety demonstrations and cabin secured checks, management of passengers and ground services during re-fuelling, observation of use of portable electronic devices;

(v) preparedness to carry out safety and emergency duties at any time, and security alertness.

2. During flight:

(i) operation and monitoring of aircraft systems, surveillance of the cabin, lavatories, galleys, crew areas and flight crew compartment;

(ii) coordination with flight crew on situation in the cabin and turbulence events/effects;

(ix) management and observation of passengers (consumption of alcohol, behaviour, potential medical issues), observation of use of portable electronic devices;

(iv) safety and security awareness and preparedness to carry out safety and emergency duties at any time, and cabin secured checks prior to landing.

(c) Main cabin crew duties and responsibilities during abnormal and emergency operations

(1) In case of planned or unplanned emergency evacuation: briefing and/or commands to passengers including SCPs and selection and briefing to able-bodied persons; crowd control monitoring and evacuation conduct including in the absence of command from the flight crew; post-evacuation duties including assistance, first aid and management of survivors and survival in particular environment; activation of applicable communication means towards search and rescue services.

(2) In case of decompression: checking of crew members, passengers, cabin, lavatories, galleys, crew rest areas and flight crew compartment, and administering oxygen to crew members and passengers as necessary.

(3) In case of pilot incapacitation: secure pilot in his/her seat or remove from flight crew compartment; administer first aid and assist operating pilot as required.

(4) In case of fire or smoke: identify source/cause/type of fire/smoke to perform the necessary required actions; coordinate with other cabin crew members and flight crew; select appropriate extinguisher/agent and fight the fire using portable breathing equipment (PBE), gloves, and protective clothing as required; management of necessary passengers movement if possible; instructions to passengers to prevent smoke inhalation/suffocation; give first aid as necessary; monitor the affected area until landing; preparation for possible emergency landing.

(5) In case of first aid and medical emergencies: assistance to crew members and/or passengers; correct assessment and correct use of therapeutic oxygen, defibrillator, first-aid kits/emergency medical kit contents as required; management of events, of incapacitated person(s) and of other passengers; coordination and effective communication with other crew members, in particular when medical advice is transmitted by frequency to flight crew or by a telecommunication connection.

(6) In case of disruptive passenger behaviour: passenger management as appropriate including use of restraint technique as considered required.

(7) In case of security threats (bomb threat on ground or in-flight and/or hijack): control of cabin areas and passengers' management as required by the type of threat, management of suspicious device, protection of flight crew compartment door.

(8) In case of handling of dangerous goods: observing safety procedures when handling the affected device, in particular when handling chemical substances that are leaking; protection and management of self and passengers and effective coordination and communication with other crew members.

Section 3- Additional requirements for applicants for, and holders of, a cabin crew licence

AMC1 MED.C.030 Cabin crew medical report

The cabin crew medical report to be provided in writing to the applicants for, and holders of, a cabin crew licence after completion of each aero-medical assessment should be issued:

3. in the national language(s) and/or in English; and

(b) according to the format below, or another format if all, and only, the elements specified below are provided.

CABIN CREW MEDICAL REPORT FOR CABIN CREW ATTESTATION (CCA) APPLICANT OR HOLDER		
(1)	State where the aero-medical assessment of the GCCA applicant/holder was conducted:	
(2)	Name of GCCA applicant/holder:	
(3)	Nationality of GCCA applicant/holder:	
(4)	Date and place of birth of GCCA applicant/holder: (*dd/mm/yyyy*)	
(5)	Expiry date of the previous aero-medical assessment: (*dd/mm/yyyy*)	
(6)	Date of the aero-medical assessment: (*dd/mm/yyyy*)	
(7)	Aero-medical assessment: (*fit or unfit*)	
(8)	Limitation(s) if applicable:	
(9)	Date of the next required aero-medical assessment: (*dd/mm/yyyy*)	
(10)	Date of issue and signature of the AME, who issued the cabin crew medical report:	
(11)	Seal or stamp:	
(12)	Signature of GCCA applicant/holder:	

AMC1 MED.C.035 Limitations

When assessing whether the holder of a cabin crew licence may be able to perform cabin crew duties safely if complying with one or more limitations, the following possible limitations should be considered:

(a) a restriction to operate only in multi-cabin crew operations (MCL);

(b) a restriction to specified aircraft type(s) (OAL) or to a specified type of operation (OOL);

(c) a requirement to undergo the next aero-medical examination and/or assessment at an earlier date than required by MED.C.005(b) (TML);

(d) a requirement to undergo specific regular medical examination(s) (SIC);

(e) a requirement for visual correction (CVL), or by means of corrective lenses only (CCL);

(f) a requirement to use hearing aids (HAL); and

(g) special restriction as specified (SSL).

SUBPART D- Aero-medical examiners (AMEs)

AMC1 MED.D.010 Requirements for the initial issue of an AME certificate

(a) Basic and advanced training course for AMEs

The basic training course for AMEs should consist of 60 hours theoretical and practical training, including specific examination techniques. The advanced training course for AMEs should consist of another 60 hours of theoretical and practical training, including specific examination techniques.

(b) The syllabus for the basic training course should cover at least the following subjects:

— Introduction to aviation medicine;

— Physics of atmosphere and space;

— Basic aeronautical knowledge;

— Aviation physiology; including demonstration and practical;

— Ophthalmology, including demonstration and practical;

— Otorhinolaryngology, including demonstration and practical;

— Cardiology and general medicine; including demonstration and practical;

— Neurology; including demonstration and practical;

— Psychiatry in aviation medicine; including demonstration and practical;

— Psychology;

— Dentistry;

— Accidents, escape and survival;

— Legislation, rules and regulations;

— Air evacuation, including demonstration and practical;

— Medication and flying.

— Pilot working environment;

— Human factors in aviation, including demonstration and practical;

— Tropical medicine;

— Hygiene, including demonstration and practical;

— Space medicine.

(c) Practical training in an AeMC should be under the guidance and supervision of the head of the AeMC.

(d) After the successful completion of the practical training, a report of demonstrated competency should be issued.

GM1 MED.D.030 Refresher training in aviation medicine

(a) During the period of authorisation, an AME should attend 20 hours of refresher training.

(b) A proportionate number of refresher training hours should be provided by, or conducted under the direct supervision of the GCAA or the Medical Inspector.

(c) Attendance at scientific meetings, congresses and flight deck experience may be approved by the GCAA for a specified number of hours against the training obligations of the AME.

(d) Scientific meetings that should be accredited by the GCAA are:

1. International Academy of Aviation and Space Medicine Annual Congresses;

2. Aerospace Medical Association Annual Scientific Meetings; and

3. other scientific meetings, as organised or approved by the Medical Assessor.

(e) Other refresher training may consist of:

1. flight deck experience;

2. jump seat experience;

3. simulator experience; and

4. aircraft piloting.

GM 1 MED.D.010 Prerequisite for the issue of an AME certificate

1. AME designation

1.1 Documentation and administrative procedure for designating AME

(a) Expression of Intent: All applicants for the designation of AME shall apply in writing expressing the intent to practice as an AME and requesting to be licensed as a GCAA designated AME. The application shall be made to the Head of Aeromedical section, Civil Aviation Authority, U.A.E.

(b) First Correspondence from the GCAA: On receipt of the informal application the requisite GCAA AME designation application form GCAA LIF-MED-010 & LIF-MED-008 will be sent to the candidate along with list of required equipment (see GM 1 MED.D.010), within a period of 10 working days.

(c) Application: The applicant should fill the formal application form and return it to the Licensing and Aeromedical department, supplying all the necessary supporting documents.

(d) Facility Survey: After reviewing the documents, Provided the candidate is selected for designation the GCAA will inform the candidate and will setup a date and time for the facility survey. Once the facility survey **is** satisfactorily completed the GCAA shall inform the applicant in writing of the disposal of his or her application and at this stage he shall make any payment required.

(e) Before finalising the application, the candidate may be required to undertake a competency evaluation exams and/or an interview with the Head of aeromedical section.

(f) Once selected for designation, the following items should be sent to the physician:

(i). Letter of approval from the GCAA,

(ii). Aeromedical Examiner Designation Card,

(iii). Facility approval certificate,

(iv). AME stamp and the official GCAA forms,

(v). AME resources,

(vi). guidance material and supplies.

AME Designation cards shall expire 3 years after the date issued. Facility approval shall expire 1 year after the date issued. The Aeromedical Inspector should arrange for a training for the designated examiner on the use of E-Medical system.

(g) Requirements for the Overseas Facility Survey: For the approval of the overseas medical facilities the individual or the organisation requesting the approval would be required to make all the necessary arrangements for the GCAA official conducting the survey.

(h) Once the AME leave the business or his service is terminated that particular number will be blocked and cannot be used by other AME. Each stamp is intended for the exclusive use of the individual examiner to whom it is issued and must not be used by any other practitioner. In case of lost stamp or Designated AME Card, the AME is responsible to inform the GCAA immediately.

Note 1: The designee shall be informed that misuse of the Medical Certificateand Civil Aviation Medical Examination Report, could have a detrimental effect on air safety. Accordingly security of these forms must be maintained.

Note 2: GCAA forms and supplies may be obtained from the Licensing and Aeromedical Department/ or GCAA official website addressing the intent to practice as an AME and requesting to be licensed as a GCAA

1.2 Renewal procedure

(a) Thirty days before expiration of designation, the AME shall apply to the Licensing and Aeromedical department, forwarding GCAA MED Form -10 with a cheque of 300 Dirham and total numbers of examinations done per Classes of medical and total number of boards done during his designation.

(b) The Aeromedical Inspector shall check the CME record for all the AME applying for renewal, if the record is satisfactory, and the AME performance report during this period of designation is satisfactory, the Aeromedical Inspector recommend his designation renewal.

(c) Formal interview with the Aeromedical Inspector or exam may be required for some AMEs who meets designation criteria but the performance report is un- satisfactory.

(d) In case of disqualification for renewal a letter of regret along with the returned cheque will be dispatched to the physician within a period of 10 working days.

(e) Physicians who's completed GCAA MED form -10 for re-designation is not received within 30 days will not be re-designated. The Chief of Licensing and Aeromedical Department shall be notified of those physicians who decline or fail to be re-designated.

(f) Physicians who continue to work as UAE designated AME with expired designation will be subjected to penalties, which may vary from warning letter to permanent suspension.

(g) Once the designated AME reach the age of 65 years, his designation will not be renewed.

1.3 Termination of non-renewal of designation

The GCAA may terminate or not renew an AME designation

Termination or non-renewal of designation may be based in whole or in part on the following criteria;

(a) No examinations performed after 24 months of initial designation.

(b) Performance of less than ten examinations per year to maintain proficiency.

(c) Disregard or failure to demonstrate the knowledge of UAE rules, regulations, GCAA policies, and procedures.

(d) Careless or incomplete reporting of the results of medical certification examinations.

(e) Failure to comply with the mandatory AME training requirements.

(f) Movement of the location of practice.

(g) Unprofessional office maintenance and appearance.

(h) Unprofessional performance of examinations.

(i) Failure to promptly mail reports of medical examinations to the GCAA.

(j) Loss, restriction, or limitation of a licence to practice medicine.

(k) Any action that compromises public trust or interferes with the AME's ability to carry out the responsibilities of his or her designation.

(l) Any illness or medical condition that may affect the physician's sound professional judgment or ability to schedule or perform examinations.

(m) Arrest, indictment, or conviction for violation of a law.

(n) Request by the physician for termination of designation.

(o) Any other reason the GCAA deems appropriate.

1.4 Approved GCAA Specialists

In the selection and retention of designated Specialists, the GCAA will designate only professionally qualified and appropriately licensed physicians.

1.4.1 Responsibility of Approved Specialist

(a) Personally conduct physical examination in accordance the best practices.

(b) Investigate the medical case, and if appropriate treat the pilots with problems.

(c) Recommend the issuance or denial of the GCAA medical certificates in accordance with the current medical provisions subject to reconsideration by the GCAA AME and Aeromedical section.

(d) When the Specialist does not have sufficient information, or is unsure of whether he/she should recommend the issue of a medical certificate, he may refer the case to another Specialist in the same field, but final report must be submitted through the approved specialist.

(e) Upon GCAA request, the Approved Specialist may be involved in medical review board as a member of, to review medical assessment for a particular applicant if the medical standards is not met in his particular fields

(f) Some Approved Specialist may be involved in giving lectures on medical subjects related to their specialty and provide clinical demonstration on examination techniques at AME seminars.

1.4.2 Qualifications and Training

(a) The applicant must possess an unrestricted licence to practice medicine in the geographical area in which the designation is sought, issued either by Health Authority of the region.

(b) The applicant must have clinical experience in the speciality field of at least 5 years.

(c) The applicant must hold a qualification in Aviation or Aerospace Medicine, or if the Specialist is commercial or private pilots himself.

(d) The applicant must be engaged in the practice of medicine at an established office address.

(e) The applicant's past professional performance and personal conduct shall be suitable for a position of responsibility and trust.

(f) A final interview might be conducted by the Aeromedical Inspector before a decision can be made in individual cases where the applicant is not aviation medicine qualified or experienced.

1.4.3 Distribution

Initially one specialist in each field will be approved in each emirate although further designations may be granted if deemed necessary.

1.4.4 Documentation and Administrative Procedures

Prospective applicants should apply in writing expressing the intent to practice as an approved specialist. The application shall be made to the head of aeromedical section and, General Civil Aviation Authority, U.A.E. along with the application copy of current CV and aero-medical training certification.

Based on the initial evaluation of the documents the Aeromedical section may request the applicant to undertake a competency examination and /or interview with the Aeromedical section.

Once the applicant is chosen by the GCAA to be an approved specialist, they will be requested to pay the appropriate fee to licensing Department in order to proceed to final approval.

Once selected for designation, the following items shall be sent to the physician: A letter of approval from the GCAA as a recognised specialist; Designation Card with a unique GCAA reference number and the official GCAA forms and supplies including a GCAA stamp. Designation cards shall expire 3 years after the date issued and will only be re-issued if the specialist is up to date with the CME requirements of a designated aero-medical examiner and demonstrated an appropriate level of competence as a GCAA designated specialist.

1.4.5 Professionalism

To properly discharge the duties associated with these responsibilities, the Approved Specialist shall maintain familiarity with general medical knowledge applicable to aviation. They shall have detailed knowledge and understanding of UAE regulations, policies, and procedures related to medical certification. They should also be familiar with the GCAA medical provisions, and this publication. The AME should be thoroughly familiar with instructions as to techniques of examination, medical assessment, and certification of the airman.

1.4.6 Continuing Education /Refresher Training

As a requirement for continued designation, the Approved specialist must attend 20 hours approved refresher training, or scientific meeting related directly to his Specialist. ; Plus at least 5 hours related to Aviation medicine.

1.4.6 Renewal procedure

(a) The specialist should follow the same administrative procedure as for the initial application.

(b) Based on the performance record the documents the Aeromedical section may request the applicant to undertake a competency examination and /or interview with the Aeromedical section.

(c) The final decision of the continuation of the designation is the function of the aeromedical section.

2. Medical facility requirement

For the conduct of the medical examination, Examiner's shall have adequate facilities for performing the required examinations and possess or agree to obtain the following equipment prior to conducting any GCAA examinations.

(a) The facility shall be approved by the Ministry of health or other Health Authorities wherever applicable.

(b) Each facility should have at least one GCAA designated AME available to function at it.

(c) Standard Snellen Test and Near Vision Acuity Test Card vision testing.

(d) Colour Vision Test Apparatus. Ishihara, 24 plate editions.

(e) Standard physician diagnostic instruments and aids including those necessary to perform urinalysis.

(f) Electrocardiographic equipment. All Examiners must have access to digital electrocardiographic equipment with electronic transmission capability.

(g) Audiometric equipment. All Examiners must have access to audiometric equipment or a capability of referring applicants to other medical facilities for audiometric testing.

(h) Laboratory equipments which should be available within the facility include those for routine aviation medicals namely blood and urine tests. Other required tests to be done in the clinic laboratory by a trained technician or if not available, at another laboratory within a reasonable driving distance from the main facility.

(i) X-Ray facilities and Drug screening facilities must either be available on premises or within a reasonable driving distance from the main facility.

(j) Pulmonary function test machine (Spirometry) and Peak expiratory flow rate, these machine should be an available within all the facilities.

(k) A suitable computer, document scanner, modem and software package for communication with GCAA, as the process of e-work will be established for data transfer to the GCAA in the coming year.

3. AeMC requirements

(a) Availability of SAME designated by the AMS as Accountable manger.

1. Accountable Manger is SAME, high performer, very well qualified, experienced in the field and can easily be identified and define the competency profile important to their success.

2. GCAA Requirements for designation of Accountable manger:

(i) Shall be SAME

(ii) Of more than 5 years' experience as Aviation specialist

(iii) of excellent performance report within GCAA record

(iv) who should be engaged in the aviation medicine work ,i.e. performing more than 200 class 1 medical in one year

(v) Experience working within the UAE as GCAA AME, of good understanding to the local law and regulation of aviation medicine

2. Responsibilities of Accountable Manger

(i) The AM keeps all the AMEs records,

(ii) provides training for AMEs on GCAA regulation,

(iii) Keeps track of scheduled reviews with AMEs and the regulator, and when problems arise, looks at the pattern of mistakes and the documentation.

(iv) Supervise the GCAA examination,

(v) Review the re-instatement forms personally

(vi) AM need to identify their star performers as well as the few whose performance is unacceptable.

(vii) Supervising all the AMEs medical examinations

(viii) Releasing the Reinstatements for all licence holders

(ix) Issuing of any variation under the GCAA AMC and inserting or removal of any limitation on medical certificate

(x) Training for all AMEs in GCAA regulatory matters and remedial AvMed training for those AMEs not meeting GCAA standards.

(xi) Focal point for all GCAA communication

(b) Availability of SAME to deputise the Accountable manger on his absence. The number of deputies should match with work demand.

(c) Presence of internal standardisation process and documentation.

3.1 SOP

Standards Operation Procedure which is detailed, written instructions to achieve uniformity of the performance of a specific function, it is a written process or a way for the AMEs to perform the task of GCAA examination and assessment the same way each time it is completed. It is used to:

(a) Identify the responsible person for each task.

(b) Describe actions (i.e. what is to be completed).

(c) Train staff (new AME, Admin assistance, Nurses) on the processes

(d) Monitor the clinic and AME performance.

3.1.1 Benefits of SOP

(a) It will ensure that all GCAA Aviation medicine activities conducted within the AeMC follows the updated GCAA regulation, Evidence Based Medicine, international best practices in Aviation medicine and the organisational policies; to protect the rights for all licence holders attending GCAA examination at this centre.

(b) Provides autonomy within the clinical site. Improves the quality of the data collected, thereby improving the quality of any research in the field.

(c) Utilised as a reference and guideline as to how research will be conducted within the clinical site on any particular medical condition before issuing or denying any medical certificate.

(d) Excellent training source for new AMEs

3.1.2 Essential elements of SOP

Header – title, original version date, revision date, effective date, approved by

- Purpose – why one has the policy
- Responsibilities – who the policy pertains to
- Instruction/Procedures – how to accomplish the items of the policy
- References – what the policy is based on
- Appendix – source documents/case report forms

3.2 Internal verification process

It is essential for any approved AeMC to develop an internal Verification process to ensure the compliance of all AMEs with the approved standards in relation to all GCAA Examination, assessment, diagnosis and management before making any fitness decisions.

This is to ensure that given the same or a similar piece of evidence the AMI and verifiers (in this context Accountable manger) would come to the same conclusions.

(a) The Accountable Manger is responsible to develop an internal Audit procedure to confirm:

1. Compliance of all AMEs with GCAA regulation, and
2. The AeMC approved SOP.
3. Performance of AVMED Nurses involved in special investigation part of the GCAA examination.
4. Ensure the compliance of personnel involved in GCAA examination with the code of conduct.

(b) The Accountable manger should monitor each activity within the centre on periodic review and document the audit reports securely within the facility for GCAA review and any other audit may be required for quality reason.

(c) The Accountable Manger will apply any quality improvement actions required to develop the processes where necessary and detail these in the report provided to the AMS for review and approval.

(d) The Nurses should have a sufficient training on AV MED and documented acceptable competency level in the performed special investigation:

1. CAD test
2. Visual acuity testing
3. Ishihara plates test
4. Urine dipstick test
5. Urine drug testing
6. ECG
7. Audiogram
8. Spirometry/PEF

(e) Sufficient number of Admin staff aware about all GCAA procedures

(f) Availability of CPD/CME program within the centre – directly related to GCAA activities.

(g) Presence of Code of practice (professional ethics) within the facility.

1. It is styled as a code of professional responsibility, which will discuss difficult issues, difficult decisions that will often need to be made, and provide a clear account of what behaviour is considered "ethical" or "correct" or "right" in the circumstances.
2. A code of practice is a good way to state clearly any organisation's position on important subjects like confidentiality, equality, ethics, contracts, conflict of interest and duty of care.

(h) Presence of sufficient number of good performer AMEs who will be permitted to do class 1 and /or cabin crew medicals.