هيئة الطيران المدني
Civil Aviation Authority

CAR FCL-3

Civil Aviation Regulation

Aviation Medical Requirements

Effective: 10th October 2023

Approved by: HE Eng. Naif Ali Hamed Al Abri
(President of CAA)

Intentionally Left Blank

Corrigendum of Amendments

No.	Ref	Description
01	02	This regulation has been completely reviewed and renumbered.
02	03	This regulation has been updated to include the subject matter of CAN 4-12 which is shown as CAR FCL-3.253 with Guidance Material and forms pertaining to alcohol assessment are shown in Appendix 12.
03	04	➢ New definitions added to CAR FCL-3.005 – Incapacitation and Technician. ➢ CAR FCL-3.010 has been renumbered to CAR FCL-3.133. ➢ CAR FCL-3.015 has been renumbered to CAR FCL-3.010. ➢ CAR FCL-3.010(a)(2) is a new paragraph with a supporting AMC to CAR FCL-3.010(a)(2) Decrease in medical fitness. ➢ CAR FCL-3.015 is a new regulation concerning types of medication and their applicable requirements. ➢ New para (c) added to CAR FCL-3.130 which covers Code of Practice. ➢ CAR FCL-3.180 has now become para (a) within CAR FCL-3.280 and CAR FCL-3.180 is now reserved for later use. ➢ New Appendices 15, 16 and 17 have been added – new forms. ➢ The "List of Effective Pages" has been deleted as the Regulation will be published digitally including all pages which are considered to be current.
04	05	➢ Amended: CAR FCL-3.120 Authorisation ➢ Amended: CAR FCL-3.175 Consequences of Falsification and Negligence; ➢ Added: CAR FCL-3.180 Deferment; ➢ Enhanced: CAR FCL-3.205 Medical assessor (MAs); ➢ Amended: CAR FCL-3.225 General Medical Requirements; ➢ Removed: GM to FCL-3.225 General Medical Requirements; ➢ Enhanced: CAR FCL-3.235 Medical certificates

Intentionally Left Blank

Table of Contents

Intentionally Left Blank

Glossary of Terms or Abbreviations

The following terms or acronyms may be used in any manual or document published by the CAA. Reproduction in part or whole is allowed without prior approval. The Document Control Office reserves the rights to include such a listing in any CAA manual or document prior to publishing.

AeMC	Aeromedical Centre
ACAS	Airborne Collision Avoidance System
ACC	Area Control Centre
ACCID	Accident
ADREP	Accident/Incident Reporting System
AFIS	Aerodrome Flight Information Service
AFTN	Aeronautical Fixed Telecommunication Network
AIC	Aeronautical Information Circular
AIP	Aeronautical Information Publication
AIS	Aeronautical Information Service
A/C	Aircraft
AME	Aeromedical Examiner
AMSL	Above Mean Sea Level
AOC	Air Operator Certificate
APP	Approach Control Office
ARO	Air Traffic Services Reporting Office
ATC	Air Traffic Control
ATS	Air Traffic Service
CAA	Civil Aviation Authority
CAR	Civil Aviation Regulation
CFMU	Central Flow Management Unit
COM	Communications/Equipment
FIC	Flight Information Centre
FIS	Flight Information Service
GM	Guidance Material
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
INCID	Serious Incident
ISA	International standard atmosphere
MAs	Medical Assessor
NOTAM	Notice to Airmen
NPA	Notice of Proposed Amendment
OTSB	Oman Transport Safety Bureau
PL	Policy Lead
RNAV	Area Navigation
RPA	Remote Piloted Aircraft
SAME	Senior Aeromedical Examiner
SODA	Statement of Demonstrated Ability
SRA	Surveillance Radar Approach
SSR	Secondary Surveillance Radar
TCAS	Traffic Alert and Collision Avoidance System
TL	Technical Lead
UTC	Universal Time Coordinated
VHF	Very High Frequency
WX	Weather

Intentionally Left Blank

FOREWORD

(a) Enforcement Procedures ensuring compliance against Civil Aviation Regulation have been issued by the Civil Aviation Authority of Oman (hereinafter referred as CAA or "the Authority") under the provisions of the Civil Aviation Law of the Sultanate of Oman.

(b) This CAR has been modelled upon the latest amendments to ICAO Annex 1 with additional sub-divisions where considered appropriate.

(c) Definitions and abbreviations of terms used in CAR FCL-3 that are considered generally applicable are contained in CAR–1, Definitions and Abbreviations. However, definitions and abbreviations of terms used in CAR FCL-3 that are specific to a Subpart of CAR FCL-3 are normally given in the Subpart concerned or, exceptionally, in the associated compliance or interpretative material.

(d) CAR FCL-3 prescribes these requirements:
   (1) The applicable medical standards required for the conducting of aviation medicals by certified Aviation Medical Examiners.
   (2) The applicable punitive actions that can and will be enforced by the Authority against recognised actions of non-compliance.

(e) Amendments to the text in CAR FCL-3 in revised editions are issued as a complete amendment of pages contained within.

(f) The editing practices used in this document are as follows:
   (1) 'Shall' is used to indicate a mandatory requirement and may appear in CARs.
   (2) 'Should' is used to indicate a recommendation
   (3) 'May' is used to indicate discretion by the Authority, or the industry as appropriate.
   (4) 'Will' indicates a mandatory requirement and is used to advise of action incumbent on the Authority.

Note: The use of the male gender implies the female gender and vice versa.

Intentionally Left Blank

SUBPART A — GENERAL

CAR FCL-3.001 Applicability

The CAA shall be the competent authority:

(a) For aero-medical centres (AeMC);

(b) For senior aeromedical examiner (SAME);

(c) For aero-medical examiners (AME);

(d) For approved specialist.

CAR FCL-3.005 Definitions

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.

Applicant: means a person applying for, or being the holder of, a medical certificate who undergoes an aero-medical assessment of fitness to exercise the privileges of the license, or to carry out cabin crew safety duties.

Medical Assessor (MAs): A physician, appointed by the Licensing Authority, qualified and experienced in the practice of aviation medicine and competent in evaluating and assessing medical conditions of flight safety significance.

Aeromedical Board (AMB): an organizational element within the Authority responsible for the oversight and management of the Aviation Medical Examiner (AME) system, develop, and establish policies, procedures, standards, and regulations governing the AME system. (Refer to Aeromedical Guidance Manual)

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

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 recognize pathological conditions.

Examination' means an inspection, palpation, percussion, auscultation or other means of investigation especially for diagnosing disease.

Incapacitation' in this manual, the term "incapacitation" means any reduction in medical fitness to a degree or of a nature that is likely to jeopardize flight safety.

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 CAA that issued the license, or to which a person applies for the issue of a license, or, when a person has not yet applied for the issue of a license, the CAA in accordance with this Chapter.

Limitation' means a condition placed on the medical certificate, license or cabin crew medical report that shall be complied with whilst exercising the privileges of the license, or cabin crew License.

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

Technician' Must be a person holding a qualification allowing them to perform medical support or investigative services in a medical laboratory or medical facility.

CAR FCL-3.010 Decrease in medical fitness.

(a) License holders shall not exercise the privileges of their license 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) have knowingly been in contact with another person who has subsequently tested positive to any highly infectious virus or transmittable disease prior to commencing a flight duty period. (See AMC to CAR FCL-3.010(a)(2))
  (3) take or use any prescribed or non-prescribed medication which is likely to interfere with the safe exercise of the privileges of the applicable license;
  (4) receive any medical, surgical or other treatment (such as acupuncture, homeopathy, hypnotherapy and several other disciplines) that is likely to interfere with flight safety.

(b) License 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;
  (8) Transient Ischemic Attack;
  (9) coronary angiography;
  (10) abnormal heart rhythms including atrial fibrillation/flutter;
  (11) have any loss of consciousness.

(c) When a license holder of a medical certificate seeks the advice of an AeMC or AME, the AeMC or AME shall assess the medical fitness of the license holder and decide whether they are fit to resume the exercise of their privileges in accordance with the process established by the CAA.

(d) Cabin crew members shall not perform duties on an aircraft and, where applicable, shall not exercise the privileges of their cabin crew license 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)(11), cabin crew members shall, without undue delay, seek the advice of an AME, or AeMC as applicable. The AME, or AeMC shall assess the medical fitness of the cabin crew members and decide whether they are fit to resume their safety duties in accordance with the process established by the CAA.

AMC to CAR FCL-3.010(a)(2) Decrease in medical fitness

(a) If a license holder receives notification that they have been in contact with a person who has subsequently tested positive to the symptoms of a known highly infectious virus or transmittable disease (such as Covid-19, SAR-V, Ebola or any newly diagnosed virus or disease) & develop any symptoms or signs suggestive of illness, shall be required to follow the instruction published by the world health organization and local health authorities prior cleared fit for flight duties.

(b) In the event of a Flight Crew member or Cabin Crew member begins to suffer from the symptoms of any diagnosed highly infectious virus or transmittable disease shall, if practicable, isolate themselves from other crew members and passengers to minimize the passage of that possible virus or disease.

(c) In extreme cases, an in-flight diversion may be required if a member of the flight crew must isolate themselves, in which case, all members of the flight crew shall observe the applicable or recommended quarantine measures upon arrival at the diversion aerodrome.

CAR FCL-3.015 Medication

(a) Any medication can cause side effects, some of which may impair the safe performance of flying duties. Equally, symptoms of colds, sore throats, diarrhea and other abdominal upsets may cause little or no problem whilst on the ground but may distract the pilot or cabin crew member and degrade their performance whilst on duty. The in-flight environment may also increase the severity of symptoms which may only be minor whilst on the ground. Therefore, one issue with medication and flying is the underlying condition and, in addition, the symptoms may be compounded by the side effects of the medication prescribed or bought over the counter for treatment.

Note: The following provides guidance to pilots and cabin crew in assessing whether expert aero-medical advice from an AME, AeMC, or aviation medical assessor is required.

(b) Before taking any medication and acting as a pilot or cabin crew member, the following three basic questions should be satisfactorily answered:
   (1) Do I feel fit to fly?
   (2) Do I really need to take medication at all?
   (3) Have I given this particular medication a personal trial on the ground to ensure that it will not have any adverse effects on my ability to fly?

(c) Confirming the absence of adverse effects may well need expert aero-medical advice.

(d) The following are some widely used medicines with a description of their compatibility with flying duties:
   (1) ***Antibiotics.*** Antibiotics may have short-term or delayed side effects which can affect pilot or cabin crew performance. More significantly, however, their use usually indicates that an infection is present and, thus, the effects of this infection may mean that a pilot or cabin crew member is not fit to fly and shall obtain expert aero-medical advice.
   (2) ***Anti-malaria drugs.*** The decision on the need for anti-malaria drugs depends on the geographical areas to be visited, and the risk that the pilot or cabin crew member has of being exposed to mosquitoes and of developing malaria. An expert medical opinion shall be obtained to establish whether anti-malaria drugs are needed and what kind of drugs should be used. Most of the anti-malaria drugs (atovaquone plus proguanil, chloroquine, doxycycline) are compatible with flying duties.

   However, adverse effects associated with mefloquine include insomnia, strange dreams, mood changes, nausea, diarrhoea and headaches. In addition, mefloquine

may cause spatial disorientation and lack of fine coordination and is, therefore, not compatible with flying duties.

(3) ***Antihistamines.*** Antihistamines can cause drowsiness. They are widely used in 'cold cures' and in treatment of hay fever, asthma and allergic rashes. They may be in tablet form or a constituent of nose drops or sprays. In many cases, the condition itself may preclude flying, so that, if treatment is necessary, expert aero-medical advice shall be sought so that so-called non-sedative antihistamines, which do not degrade human performance, can be prescribed.

(4) ***Cough medicines.*** Antitussives often contain codeine, dextromethorfan or pseudoephedrine which are not compatible with flying duties. However, mucolytic agents (e.g. carbocysteine) are well-tolerated and are compatible with flying duties.

(5) ***Decongestants.*** Nasal decongestants with no effect on alertness may be compatible with flying duties. However, as the underlying condition requiring the use of decongestants may be incompatible with flying duties, expert aero-medical advice shall be sought. For example, oedema of the mucosal membranes causes difficulties in equalizing the pressure in the ears or sinuses.

(6) ***Nasal corticosteroids*** are commonly used to treat hay fever, and they are compatible with flying duties.

(7) ***Common pain killers and antifebrile drugs.*** Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) and paracetamol, commonly used to treat pain, fever or headaches, may be compatible with flying duties. However, the pilot or cabin crew member shall give affirmative answers to the three basic questions listed in (b) before using the medication and carrying out flying duties.

(8) ***Strong analgesics.*** The more potent analgesics including codeine are opiate derivatives, and may produce a significant decrement in human performance and, therefore, are not compatible with flying duties

(9) ***Anti-ulcer medicines.*** Gastric secretion inhibitors such as H2 antagonists (e.g. ranitidine, cimetidine) or proton pump inhibitors (e.g. omeprazole) may be acceptable after diagnosis of the pathological condition. It is important that a pilot or cabin crew member seek a medical diagnosis and not self-treat the dyspeptic symptoms.

(10) ***Anti-diarrhoeal drugs.*** Loperamide is one of the more common anti-diarrhoeal drugs and is usually safe to take whilst flying. However, the diarrhoea itself often makes the pilot and cabin crew member unfit for flying duties.

(11) ***Hormonal contraceptives and hormone replacement therapy*** usually have no adverse effects and are compatible with flying duties.

(12) ***Erectile dysfunction medication.*** This medication may cause disturbances in colour vision and dizziness. There shall be at least 6 hours between taking sildenafil and flying duty; and 36 hours between taking vardenafil or tadalafil and flying duty.

(13) ***Smoking cessation.*** Nicotine replacement therapy may be acceptable. However, other medication affecting the central nervous system ***(buproprion, varenicline) is not acceptable*** for pilots.

(14) ***High blood pressure medication.*** Most anti-hypertensive drugs are compatible with flying duties However, if the level of blood pressure is such that drug therapy is required, the pilot or cabin crew member shall be monitored for any side effects before carrying out flying duties. Therefore, consultation with the AME, AeMC, or aviation medical assessor as applicable, is required.

(15) ***Asthma medication.*** Asthma has to be clinically stable before a pilot or cabin crew member can return to flying duties. The use of respiratory aerosols or powders, such as corticosteroids, beta-2-agonists or chromoglycic acid may be compatible with flying duties. However, the use of oral steroids or theophylline derivatives is incompatible

with flying duty. Pilots or cabin crew members using medication for asthma shall consult the AME, AeMC, or aviation medical assessor, as applicable.

(16) ***Tranquillisers and sedatives.*** The inability to react, due to the use of this group of medicines, has been a contributory cause to fatal aircraft accidents. In addition, the underlying condition for which these medications have been prescribed will almost certainly mean that the mental state of a pilot or cabin crew member is not compatible with flying duties.

(17) ***Sleeping tablets.*** Sleeping tablets dull the senses, may cause confusion and slow reaction times. The duration of effect may vary from individual to individual and may be unduly prolonged. Expert aero-medical advice shall be obtained before using sleeping tablets.

(18) ***Melatonin.*** Melatonin is a hormone that is involved with the regulation of the circadian rhythm. In some countries it is a prescription medicine, whereas in most other countries it is regarded as a 'dietary supplement' and can be bought without any prescription. The results from the efficiency of melatonin in treatment of jet lag or sleep disorders have been contradictory. Expert aero-medical advice shall be obtained.

(19) ***Coffee and other caffeinated drinks*** may be acceptable, but excessive coffee drinking may have harmful effects, including disturbance of the heart's rhythm. Other stimulants including caffeine pills, amphetamines, etc. (often known as 'pep' pills) used to maintain wakefulness or suppress appetite can be habit forming. Susceptibility to different stimulants varies from one individual to another, and all may cause dangerous overconfidence. Overdosage causes headaches, dizziness and mental disturbance. Thus, extreme caution shall be exercised to avoid the symptoms of over-use of these stimulants.

(20) ***Anaesthetics.*** Following local, general, dental and other anaesthetics, a period of time shall elapse before returning to flying. The period will vary considerably from individual to individual, but a pilot or cabin crew member shall not fly for at least twelve (12) hours after a local anaesthetic, and for at least forty-eight (48) hours after a general, spinal or epidural anaesthetic.

(e) ***Many preparations on the market nowadays contain a combination of medicines.*** It is, therefore, essential that if there is any new medication or dosage, however slight, the effect should be observed by the pilot or the cabin crew member on the ground prior to flying. It should be noted that medication which would not normally affect pilot or cabin crew performance may do so in individuals who are 'oversensitive' to a particular preparation. Individuals are, therefore, advised not to take any medicines before or during flight unless they are completely familiar with their effects on their own bodies. In cases of doubt, pilots and cabin crew members shall consult an AME, AeMC, or aviation medical assessor, as applicable.

(f) ***Other treatments***. Alternative or complementary medicine, such as acupuncture, homeopathy, hypnotherapy and several other disciplines, is developing and gaining greater credibility. Such treatments are more acceptable in some States than others. There is a need to ensure that 'other treatments', as well as the underlying condition, are declared and considered by the AME, AeMC, or aviation medical assessor, as applicable, for assessing fitness.

CAR FCL-3.020 Reinstatement after a decrease in medical fitness

(a) Reinstatement process after inter-current illness, injury/or pregnancy:

(1) As soon as it is ascertained by the AME that the applicant is medically fit to discharge his /her duties safely (a process which may need expert advice, or a series of medical

investigations etc.), he shall immediately inform the CAA for reinstatement and send all the supporting documentation.

(2) The CAA will process the re-instatement request received from the AME within thirty (30) working days, provided all the medical reports submitted are acceptable.

(3) The CAA will make the re-instatement decision and determine if any further investigation is required. In such cases, the aircrew/ATC medicals will be kept pending until it is resolved.

(b) Reinstatement Process after Confirmation of Pregnancy.

(1) The suspension of the license may be lifted by the CAA after the first trimester, when the obstetrician – who is aware of all aviation activities, certifies that the license holder has no significant medical contra-indications related to pregnancy, and the AME confirms her as meeting the standards. The reinstatement of the license depends on the duties of the license holders and also on the aircraft type, the type of the operation and nature of cockpit duties. The exercise of the license privileges in such circumstances may involve imposition of operational limitation.

Note: The risk of acute incapacitation from premature labour exceeds 1% after twenty-six (26) weeks' gestation, consequently all medical certificates holders are advised not to exercise license privileges after twenty-six (26) weeks' gestation.

(2) Class 1 and 2 medical certificate holders are formally deemed medically unfit to exercise license privileges from twenty-six (26) weeks' gestations until cleared by post-partum assessment by appropriate obstetrician with the following:

i. The Obstetrician supervising the pregnancy certifies that the license holder is fit for duties during this period and

ii. Suitable administrative arrangements are made which ensure that sudden incapacitation of an affected license holder due to premature labour will not adversely affect the safety of air navigation.

iii. Following delivery, applicants are required to obtain a clearance from the AME before returning to their duties. Depending on the stage of a pregnancy at which the event occurs, such clearance may be required following a miscarriage, still birth or termination of the pregnancy. Following a normal delivery, clearance to resume duties should be appropriate at six weeks' post-partum.

(3) Class 3 medical certificate holders are formally deemed medically unfit to exercise license privileges from thirty-four (34) weeks' gestation until cleared by post –partum assessment by appropriate obstetrician with the following:

i. The Obstetrician supervising the pregnancy certifies that the license holder is fit for duties during this period and

ii. Suitable administrative arrangements are made which ensure that sudden incapacitation of an affected license holder due to premature labour will not adversely affect the safety of air navigation.

iii. Following delivery, applicants are required to obtain a clearance from the AME before returning to their duties. Depending on the stage of a pregnancy at which the event occurs, such clearance may be required following a miscarriage, still birth or termination of the pregnancy. Following a normal delivery, clearance to resume duties should be appropriate at six (6) weeks post-partum.

Note: Following termination of pregnancy or abortion the ATC applicant are required to obtain a clearance from the AME before returning to their duties.

(4) Cabin crew class medical certificate holders are formally deemed medically unfit to exercise license privileges from 16 weeks' gestations until cleared by post-partum assessment by appropriate obstetrician with the following:

i. The Obstetrician supervising the pregnancy certifies that the license holder is fit for duties during this period and
ii. Suitable administrative arrangements are made which ensure that sudden incapacitation of an affected license holder due to premature labour will not adversely affect the safety of air navigation.
iii. Following delivery, applicants are required to obtain a clearance from the AME before returning to their duties. Depending on the stage of a pregnancy at which the event occurs, such clearance may be required following a miscarriage, still birth or termination of the pregnancy. Following a normal delivery, clearance to resume duties should be appropriate at six (6) weeks post-partum.

Note: Reinstatement of medical certificate by senior AME. The senior AME may be delegated the task of direct reinstatement of medical certificate for all classes of medical applications.

(c) The procedure of reinstatement through SAME.
(1) Initial examination by designated examiners
(2) Complete fitness to work form using E-Mail system.
(3) Attach all investigations and relevant reports.
(4) 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.
(5) The request form will be sent to the CAA Medical Assessor through the email for final review.
(6) In case where the Senior AME requires the addition of certain limitation or remarks on the MC, they can do so and then they should print new MC which reflects new changes along with the temporary SIC letter if required signed by the Senior AME. All the documentations request/reports/copy of new MC/letter should be sent to AMS for review.
(7) Following review, the CAA Medical Assessor reserves the right to request further information or a change to limitations imposed by the Senior AME.

(d) Fast track procedure
(1) This procedure is applied to all CAA medical applications received (initial or renewal medical certificates, referred medical applications, rejected medical application, Reinstatement request and Board review documents).
(2) The CAA Medical Assessor will process all above applications as a routine application in accordance with the licensing internal procedure which may take up to one month to be reviewed and finalised; if the license holder /or his company prefer to process it at the earliest time then a procedure of fast tract should be applied.
(3) For the fast tract request, the CAA Medical Assessor will process the request within 10 working days.
(4) The CAA Medical Assessor will not process any request of reinstatement through their e-mails, all the request should be send to Aeromedical@caa.gov.om
(5) The payment should be submitted before the initiation of the fast track process, and the ten (10) days process will start from date of payment. Companies that already have an invoice system with the CAA will be invoiced by end of the month.
(6) During public holidays – the CAA AMS will not process any re-instatement requests. For any urgent request ONLY THE SENIOR AMEs can review the request, and return the license holder to aviation duties. In this case the senior AME should carry the responsibility before the CAA, and the CAA Medical Assessor will review same reinstatements request thereafter.

(7) Facility or individual applications requests whether initial or renewal will follow the same process.

CAR FCL-3.025 Use of Psychoactive Substances

(a) In the context of aviation, any use of psychoactive substances, even when prescribed in accordance with best medical practice for a medical condition and used in amounts that allow normal daily activities to be carried out as usual, is likely to jeopardize flight safety. The term "problematic use", which is employed in regulatory aviation medicine, is defined in Drugs and Alcohol Management Program (CAR-99).

(b) License holders shall not intend to exercise and /or exercise the privileges of their license and related rating while under the influence of psychoactive substance which might render them unable to safely and properly exercise these privileges.

(c) License holder shall not engage in any problematic use of substances.

(d) Problematic use of substances. The use of one or more psychoactive substances by aviation personnel in a way that:
   (1) constitutes a direct hazard to the user or endangers the lives, health or welfare of others; and/or
   (2) causes or worsens an occupational, social, mental or physical problem or disorder.

(e) It is important to distinguish between the terms "under the influence of any psychoactive substance" and "engage in any problematic use of substances" The former relates to any person who has recently taken a psychoactive substance (such as some alcohol) and for that reason is temporarily unsafe, whereas the latter relates to a person who is a habitual user of psychoactive substances and consequently is unsafe, also between uses.

(f) Holders of licenses provided for in this Regulation shall not exercise the privileges of their licenses and related ratings while under the influence of any psychoactive substance which might render them unable to safely and properly exercise these privileges. Holders of licenses provided for in this Regulation shall not engage in any problematic use of substances.

(g) All license holders who engage in any kind of problematic use of substances when identified shall be removed from their safety sensitive aviation activity (SSAA). Return to the safety sensitive aviation activity may be considered after successful treatment or, in cases where no treatment is necessary, after cessation of the problematic use of substances and upon determination that the person's continued performance of the function is unlikely to jeopardize safety.

(h) License holder shall not use a prescribed medication without permission from the AME and/or CAA.

(i) License holder shall not use an over-the-counter (OTC) or non-prescribed medicine which is incompatible with aviation duties.

(j) License holders shall not use any prescribed or non-prescribed therapeutic or preventative medication with any effect or side-effect which would entail a degree of functional incapacity which is likely to interfere with the safe operation of an aircraft or with the safe performance of aviation duties.

(k) License holders shall not drink alcohol within the 12-hours prior to the specified reporting time for duty or the commencement of standby.

(l) License holders shall declare the use of any medication in the declaration form prior to screening test.

(m) All applicants for CAA initial medical certification are required to undertake a pre-employment psychoactive substance screening test.

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

(o) Initial applicant for CAA medical certification and CAA license holders shall always submit to an Alcohol screening or Drug screening when they are asked to do so by their Employer, AME, recognized laboratory or CAA. Refusal to Take Test by an employee will constitute a positive test result.

(p) License holders shall be subjected to random test to indicate the use of Alcohol and /or psychoactive substances.

(q) License holders may be subjected to reasonable suspicion testing to indicate the use of Alcohol/or psychoactive substance.

(r) All positive confirmatory test results shall be reviewed by a CAA approved Medical Review Officer (MRO) for verification and validation purposes.

(s) License holders shall not report for duty or remain on duty with blood alcohol level in excess of 0.02 promille or greater.

(t) License holders shall not drink alcohol within the 12-hours prior to the specified reporting time for duty or the commencement of standby.

Note: Guidance on suitable methods of identification (which may include biochemical testing on such occasions as pre-employment, upon reasonable suspicion, after accidents/incidents, at intervals, and at random) A definition of psychoactive substances is given in the Drugs & Alcohol Management Program.

CAR FCL-3.030 Drug and Alcohol Management Program

(See GM to CAR FCL-3.035)

The Drugs & Alcohol Management Program is fully covered in CAR-99; however medical practitioners are expected to be mindful of the requirements of that regulation when conducting medical assessments under the provisions of CAR FCL-3.

(a) During the course of conducting a medical assessment and the AME or SAME become aware of a possible abuse of either alcohol or a psychoactive substance the examining doctor shall request the applicant to submit to a random Drug and Alcohol Test.
   (1) The screening shall consist of a urine sample collected at CAA approved medical facility and analysed by a recognised laboratory for amphetamines, barbiturates, benzodiazepines, cannabis, opiates and other psychoactive substances.
   (2) Random & reasonable suspicion testing for Psychoactive Substances – refer to Drugs & Alcohol Management Program or any other publication that would supersede Drugs & Alcohol Management Program
   (3) Any test information obtained by the CAA under paragraphs (1) and (2) above may be evaluated in determining a person's qualifications for any CAA license or possible violations of this Chapter and may be used as the basis for suspension or sanctions against that license holder as well as used as evidence in any legal proceeding.

GM to FCL-3.030 Drug and Alcohol Management Program

(a) In addition to the requirements of CAR-99, the Authority considers the following circumstances as a Refusal to test

(1) Refusal to submit to drug or alcohol test whether as random, pre-employment, post – incident or reasonable suspension test.

(2) Failure to appear for any test within a reasonable time (20 - 30 minutes), as determined by the employer (random, reasonable suspension, post-incident or follow up requirements), after being directed to do so by the employer.

(3) Failure to remain at the testing site until the testing process is complete, and /or failure to cooperate with any part of the testing process and /or failure to take a second test when directed to do so.

(4) Failure to provide a urine or breath sample for any test required by the CAA.

(5) Failure to permit the observation or monitoring of the employee providing a urine sample.

(6) Failure to provide a sufficient urine or breath sample when directed, and it has been determined, through a required medical evaluation, that there was not adequate medical explanation for the failure.

(7) Failure to sign the declaration form before the testing /or failure to sign the testing result form after the testing.

(8) Providing a specimen that is verified as adulterated or substituted.

(9) Failure to cooperate with any part of the testing process (e.g., refuse to empty pockets when directed by the collector, behave in a confrontational way that disrupts the collection process, fail to wash hands after being directed to do so by the collector).

SUBPART B — APPROVAL OF SERVICE PROVIDERS

Designation of an Aeromedical Centre (AeMC). Aeromedical Examiner (AME), Senior Aeromedical examiner (SAME), and Approved Specialist.

CAR FCL-3.050 Scope of Designated AME and SAME, and AeMC

(a) Issue, revalidate, revoke or renew Class 1, Class 2, Class 3 and Cabin Crew medical certificates and to conduct the relevant medical examinations and assessments.

(b) Issue or denial of the CAA medical certificates in accordance with CAR FCL-3 subject to evaluation and reconsideration by the CAA.

(c) Issue or denial of a Combined Medical/Student Pilot Certificates subject to evaluation and reconsideration by the CAA Medical Assessor (MAs).

(d) Defer a medical certification decision to the CAA when the AME does not have sufficient information, or is unsure of whether he/she should issue a medical certificate, deferral is recommended by CAA regulations.

CAR FCL-3.055 Aeromedical Centres (AeMCs)

When a Medical Organization which is practicing medicine in Sultanate of Oman wishes to be authorized by the CAA as an AeMC they shall apply in writing to the Director of Flight Safety Department requesting to be licensed as a CAA designated AeMC.

Aeromedical centres (AeMCs) will be designated and authorized, or reauthorized, at the discretion of the CAA for a period not exceeding ONE (1) year.

In addition to the requirements to be qualified for the issue of aviation medical certificates, including initial Class 1 medical certificates, Class 2, Class 3, over sixty-years (60) of age, and Cabin Crew medical certificates an AeMC shall be:

(a) Located within the national boundaries of the Sultanate of Oman and attached to or in liaison with a designated hospital or a medical institute;

(b) Engaged in clinical aviation medicine and related activities;

(c) Headed by an Authorized Senior Medical Examiner (SAME), responsible for coordinating assessment results and signing reports and certificates, and shall have at least one staff physicians with advanced training and experience in aviation medicine;

(d) Equipped with medico-technical facilities for extensive aeromedical examinations.

CAR FCL-3.060 AeMC Requirements:

(a) The availability of at least one SAME designated as Head of the aeromedical centre in the medical organization approved as an aeromedical centre by the CAA is a must to conduct the airman certification for Class 1 and above sixty-years of age certification.

(b) The availability of at least one or more AME in the AeMC who can conduct Class 1 certificate under the direct supervision by SAME (Head of aero medical centre).

(c) Availability of SAME to deputise as the Head of Aeromedical centre during his absence as the position holder.

(d) An approved manual of Standards Operation Procedures (SOP) is available to all staff.

CAR FCL-3.065 Authorized Medical Examiners (AMEs)

Designation Aviation Medical Examiner (AME) and Senior AME (SAME).

(a) The Authority will designate and authorize Medical Examiners (AMEs), qualified and licensed in the practice of medicine. Physicians resident outside the Sultanate of Oman wishing to become AMEs for the purpose of CAR–FCL-3 may apply to the Authority. Following appointment, the AME shall report to and be supervised by the CAA Medical Assessor. For Class 1 initial and over sixty-years applicants such AMEs shall be restricted to carrying out standard periodic revalidation/renewal assessments, and shall have an advanced course in aviation medicine.

(b) Applicants who are practicing medicine as general practice, or specialists who have successfully completed a basic training course in aviation medicine, including practical training in the examination methods and aero-medical assessments, within Sultanate of Oman wishes to be authorized by the CAA as an AME shall apply in writing to Director of Flight Safety Department requesting to be licensed as a CAA designated AME.

(c) Applicants who are practicing medicine as general practice, or specialists who have successfully completed an advanced training course in aviation medicine, including practical training in the examination methods and aero-medical assessments, within Sultanate of Oman wishes to be authorized by the CAA as a SAME shall apply in writing to Director of Flight Safety Department requesting to be licensed as a CAA designated SAME.

CAR FCL-3.070 Renewal AME Designation

(a) The AME designation will spontaneously be renewed if the following is satisfactory:

(1) The AME shall apply in written to the CAA Flight Safety Department and Medical Assessor (MAs) one month before expiration along with renewal fee.

(2) Continuous Training in aviation medicine as the following:

i. During the period of authorization, an AME should attend fifteen (15) hours of continuous medical education with at least five (5) hours/annually related to aviation medicine.

ii. A proportionate number of refresher training hours should be provided by, or conducted under the direct supervision of the Medical Assessor (MAs) or by the CAA.

iii. Attendance at scientific meetings, congresses and flight deck experience may be approved by the CAA for a specified number of hours against the training obligations of the AME.

iv. The applicant has completed the required number of airman examinations per Class.

v. Their performance was satisfactory during last designation as per the report of the CAA Medical Assessor (MAs) based on the AME record,

vi. In case the performance report is unsatisfactory, a formal interview with the Medical Assessor (MAs) or exam may be required for some AMEs who fail to meet the designated criteria.

vii. Denial of renewal will be sent to the Applicant along the required fee if he/she were disqualified within fifteen (15) days.

viii. Physicians who continue to work as CAA AME with expired designation will be subjected to penalties, which may vary from warning letter to termination of the designation.

CAR FCL-3.075 Privileges of Aeromedical examiner (AME)

(a) The Duties of the designated aero-medical examiner (AME) are to examine initial applicant for and holder of, airman medical certificate to determine whether or not they meet the CAA medical standards for Class 2, Class 3 and Cabin Crew.

(b) Revalidate, renewal, defer, or deny airman medical certificates Class 1 (refer CAR-FCL-3.080), Class 2, Class 3 and Cabin Crew to holders of such certificates whether or not they meet the CAA medical standards.

(c) Issue, revalidate, defer, or deny airman medical certificates Class 2, Class 3 and Cabin Crew to applicant or holders of such certificates whether or not they meet the CAA medical standards.

(d) A medical certificate issued by an Examiner is considered to be affirmed as issued unless, within sixty (60) days after date of issuance (date of examination), it is reversed by the CAA Medical Assessor (MAs).

(e) However, if the CAA requests additional information from the applicant within sixty (60) days after the issuance, the above-named officials have sixty (60) days after receipt of the additional information to reverse the issuance.

CAR FCL-3.080 Requirements for the AME to extend privileges to act as a SAME.

(a) Conducted at least forty (40) examinations for the issue, revalidation or renewal of Class 2, and Class 3, medical certificates or equivalent over a period of no more than one year's prior to the application;

(b) Successfully completed an advanced training course in aviation medicine, including practical training in the examination methods and aero-medical assessments;

(c) Have successfully completed practical training of a duration of at least five (5) days, by head of an AeMC or SAME under the supervision of the CAA Medical Assessor (MAs).

(d) During the period of authorization, an AME should attend five (5) hours/annually of continuous medical education related to aviation medicine, approved by the CAA Medical Assessor (MAs).

CAR FCL-3.085 Designation of a Senior Aeromedical Examiners (SAME) certificate

(a) Applicants for a SAME certificate with the privileges for the initial issue, revalidation and renewal of Class 1, and over sixty-years of age medical certificates shall be:
   (1) Fully qualified and licensed for the practice of medicine and hold a Certificate of Completion of specialist training related to aviation medicine;
   (2) Have a Diploma in Aviation medicine/or equivalent (not less than 120hrs);
   (3) Three years' experience in aviation medicine.
   (4) Two years' experience as the CAA designated Examiner for Class 1 medical certificate.

(b) Demonstrate to the CAA that
   (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, and over sixty-years of age applicants.

(4) Acceptable level of competency in assessment and examination for Class 1, over sixty-years of age medical certificate.

CAR FCL-3.090 Privileges of Senior Aeromedical examiner (SAME)

(a) The Duties of the designated senior aero-medical examiner (SAME) are to examine initial applicant for and holder of airman medical certificate to determine whether or not they meet the CAA medical standards for Class 1, Class 2, Class 3, for over age of sixty-years (60) of age certificate, and cabin crew.

(b) Issue, revalidate, defer, or deny airman medical certificates to initial applicant for or holders of such certificates whether or not they meet the CAA medical standards.

CAR FCL-3.095 Continuous Training in Aviation Medicine.

(a) During the period of authorization, an AME should attend fifteen (15) hours of continuous medical education with at least five (5) hours/annually related to aviation medicine.

(b) A proportionate number of refresher training hours should be provided by, or conducted under the direct supervision of the CAA the Medical Assessor (MAs).

(c) Attendance at scientific meetings, congresses and flight deck experience may be approved by the CAA for a specified number of hours against the training obligations of the AME.

(d) Scientific meetings that shall be accredited by the CAA are:
   (1) International Academy of Aviation and Space Medicine Annual Congresses;
   (2) Aerospace Medical Association Annual Scientific Meetings; and
   (3) Other scientific meetings, as organized or approved by the Medical Assessor (MAs).
   (4) Other refresher training approved by the CAA may consist of:
      i. flight deck experience;
      ii. jump seat experience;
      iii. simulator experience; and
      iv. aircraft piloting.

CAR FCL-3.100 Designation for Medical Specialist.

(a) Reference to the international practice in Aviation Industry, the CAA shall designate two Medical physicians specialized in different branches of medical science who are holding an unrestricted license to practice medicine in the geographical area in which the designation is sought, or issued by the Health Authority of the area that he/she practice his business to evaluate the fitness of an Airman who suffer from acute or chronic illness in coordination between the Medical Assessor (MAs) and AME.

(b) The specialist must attend a course in Aviation medicine before the approval of his/her designation.

(c) Upon the discretion of the DFS a Limited period of exception not exceeding six (6) months is allowed for the approved specialist to practice his/her designation before the attendance at an aviation medicine course subject, to provide assessments under the direct supervision of the CAA Medical Assessor.

(d) The specialist must practice his profession in an established clinic, hospital, or Medical centre.

(e) The Medical Assessor (MAs) must evaluate all documents, conduct an interview, and survey the office, hospital, Medical centre, and his/her past professional performance and personal conduct.

(f) Provide the above requirement are satisfactory A letter of designation along with the CAA designation certificate and ID with specific number, and CAA stamp shall be delivered to his/her office within two weeks after payment of the requested fee.

(g) The designation shall be satisfactory for a position of responsibility and trust.

(h) The designation expires two (2) years after the date issued and will only be renewed if the specialist is up to date with the CME requirements of a designated aero-medical examiner and the performance was satisfactory during last designation as per the report of the CAA Medical Assessor (MAs) based on his/her record.

CAR FCL-3.105 Privileges of Approved Specialist.

(a) Airman physical examination must be done by the specialist personally in accordance the best practices.
   (1) Thorough Investigation of the medical case, and if appropriate treat the pilots with problems.
   (2) Recommend the issuance or denial of the CAA medical certificates in accordance with the current medical guidance subject to reconsideration by the CAA Medical Assessor (MAs) based on the recommendation of the review committee assigned by the PAC Medical Assessor (MAs) if necessary.
   (3) If the Specialist does not have sufficient information, or is unsure of whether he/she should recommend the issue of a medical certificate, he/she may refer the case to another Specialist in the same field, but final report must be submitted through the approved specialist.
   (4) The Approved Specialist may be involved in medical review committee upon the request of the CAA Medical Assessor (MAs) as a member of, to review medical assessment for a particular airman if the medical standards are not met in his particular fields.
   (5) Upon the request of the CAA Some Approved Specialist may be involved in giving lectures on medical subjects related to their field of specialists.

CAR FCL-3.110 The Performance Report of the Specialist will be based on the Following Criteria:

(a) Designated specialist must attend fifteen (15) hours approved continuous medical education, related directly to his Specialist area; at least five (5) hours/ annually related to Aviation medicine to keep familiarity with general medical knowledge applicable to aviation.

(b) The competency to the knowledge and understanding of Oman and CAA regulations, policies, and procedures related to medical certification, and CAA medical guidance and the publication.

(c) The ability and capability to follow thoroughly the instruction regarding the technique of examination, medical assessment, and certification of the airman.

CAR FCL-3.115 Designation for Medical Investigation and Diagnostic Facility

(a) Reference to the international practice in Aviation Industry, the CAA shall designate two Medical diagnostic facilities in different branches of medical science who are holding an

unrestricted license to practice medical investigation and diagnostic facility in the geographical area in which the designation is sought, or issued by the Health Authority of the area that he/she practice his business to do the required investigations or diagnostic tools of an Airman who suffer from acute or chronic illness in coordination between the Medical Assessor (MAs), AME, and AeMC

(b) The Facility shall have an annual maintenance and calibration programme of the instruments and tools used which is supported by certificates stating when this maintenance was conducted.

(c) The Technician must practice his profession in an established clinic, Hospital, Medical centre or private facility

(d) The Medical Assessor (MAs) must evaluate all documents, conduct an interview, and survey the facility, and the past professional performance and personal conduct.

(e) Provide the above requirement are satisfactory A letter of designation along with the CAA designation certificate and ID with specific number, and CAA stamp shall be delivered to the facility within two weeks after pay the requested fee.

(f) The designation shall be satisfactory for a position of responsibility and trust.

(g) The designation expires two (2) years after the date issued and will only be renewed if the facility is up to date with the CME requirements of a technician and the performance was satisfactory during last designation as per the report of the CAA Medical Assessor (MAs) based on the record.

CAR FCL-3.120 Authorisation.

An AME will be authorized for a period not exceeding two (2) years. Authorization to perform medical examinations may be for Class 1, Class 2, Class 3 and Cabin Crew or all at the discretion of the Authority. To maintain proficiency and retain authorization, an AME shall complete at least ten aeromedical examinations each year. For re-authorization the AME shall have completed an adequate number of aeromedical examinations to the satisfaction of the Aeromedical Section and shall also have undertaken relevant training during the period of authorization.

CAR FCL-3.125 Obligations of the AeMC, AME, SAME,

(a) When conducting aero-medical examinations and aero-medical assessments as required in this CAR, the AeMC, and or the AME shall:
   (1) Ensure that communication with the applicant can be established without language barriers;
   (2) Make the applicant aware of the consequences of providing incomplete, inaccurate or false statements on their medical history;
   (3) Notify the licensing authority, or, in the case of cabin crew attestation holders, notify the competent authority, if the applicant provides incomplete, inaccurate or false statements on their medical history;
   (4) Notify the licensing authority if an applicant withdraws the application for a medical certificate at any stage of the process.

(b) After completion of the aero-medical examinations and assessments, the AeMC, AME shall.
   (1) Inform the applicant whether he or she is fit, unfit or referred to the Medical Assessor (MAs) of the licensing authority, AeMC or AME, as applicable;
   (2) Inform the applicant of any limitation that may restrict flight training or the privileges of his or her license, as applicable;

(3) If the applicant has been assessed as unfit, inform his /her right to have the decision reviewed in accordance with the procedures of the competent authority;
(4) In the case of applicants for a medical certificate, submit without delay to the CAA Medical Assessor (MAs) a signed, or electronically authenticated, report containing the detailed results of the aero-medical examinations and assessments as required for the Class of medical certificate and a copy of the application form, the examination form, and the medical certificate; Within fifteen (15) days from the date of issuance the medical certificate
(5) Inform the applicant of his or her responsibilities in the case of decrease in medical fitness.

(c) AeMCs, and AMEs shall submit to the CAA Medical Assessor, upon request, all aero-medical records and reports, and any other relevant information, when required for:
(1) medical certification;
(2) oversight functions.

(d) AeMCs, and AMEs shall maintain records with details of medical examinations and assessments performed in accordance with this regulation and their results in accordance with state and local legislation.

(e) If the medical examination is carried out by two or more AMEs, only the AME who initiated the examination shall be responsible for coordinating the results of the examination, evaluating the findings with regard to medical fitness, and signing the report. In case of absence of the one who initiated the examination, the other AME shall request the Authority to complete the examination

(f) If the medical examination is carried out by two AMEs working within same or in different facility because of the unavailability of the AME who had initiated the examination, the transfer of application shall be done through the CAA Medical Assessor office and the second AME is responsible for coordinating the results of the examination, evaluating the findings with regard to medical fitness, and signing the report.

CAR FCL-3.130 Obligations of Approved Specialist.

(a) During the assessment of an Airman, the AME finds the airman suffers from a Medical problem that required further investigation shall refer the Airman to be examined by a specialist, he/she has to and inform the CAA Medical Assessor (MAs) of the finding by writing within forty-eight (48) hours.
(1) Airman physical examination must be done by the specialist personally in accordance with the best practices.
(2) Thorough Investigation of the medical case, and if appropriate treat the pilot according to the medical condition.
(3) Recommend the issuance or denial of the CAA medical certificates in accordance with the current medical guidance subject to reconsideration by the CAA medical review committee assigned by the PAC Medical Assessor (MAs).
(4) If the Specialist does not have sufficient information, or 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.
(5) The Approved Specialist may be involved in medical review committee upon the request of the CAA Medical Assessor (MAs) as a member of, to review medical assessment for a particular airman if the medical standards are not met in his particular fields.
(6) Upon the request of the CAA some Approved Specialist may be involved in giving lectures on medical subjects related to their field of specialists.

(b) **Risk Based Audit Program on AME Performance**

(1) The CAA is adopting a new strategy for evaluating the designated AME using the concepts and principles of Safety Management System (SMS). The new system will use objectives tools along with audit findings and evidences from daily review of applications.
(2) All elements will be used to fill the risk assessment form.
(3) The (AMS) will use a scientific methodology to identify, assesses, controls and monitors medical certification and its safety risks throughout the CAA approved clinics.
(4) This methodology will be used to prioritize risks and to assist in the allocation of resources for the selection and implementation of required risk controls.
(5) This process will determine area of audits and percentage of reviewed applications.
(6) For an effective risk assessment implementation, all current designated examiners are required to appear for an exam to clearly identify the overall level of knowledge of CAA rules and regulations.

(c) **AME Code of Practice**

(1) ***Code of practice (professional ethics)*** The Aeromedical section will adopt a code of professional responsibility relating to aviation medicine practiced within the boundaries of the Sultanate of Oman.
(2) This code of practice will discuss difficult issues and difficult decisions that will often need to be made, and provide a clear account of what behaviour is considered “correct" or "right" in the circumstances.
(3) The AME's shall clearly state their position on important subjects like equality, ethics, contracts, conflict of interest and duty of care. This code of practice applies to all designated examiners by the CAA including the AME, Senior AME and Specialists.

Note: Failure to follow this guidance will put your designation at risk.

CAR FCL-3.133 Medical confidentiality

(a) All persons involved in medical examination, assessment and certification shall ensure that medical confidentiality is respected at all times and all medical reports and records shall be securely held with accessibility restricted to personnel authorized by the CAA.

(b) The AME is committed to maintaining the highest degree of integrity in all his/her dealings with potential, current and past clients, both in terms of normal commercial confidentiality, and the protection of all personal information received in the course of providing the CAA examination services concerned. The AME should:
(1) Protect and promote the health of his/her license holders/Applicant and the public health.
(2) Treat all license holders/Applicant as individuals and respect their dignity.
(3) Treat license holders/Applicant politely and considerately.
(4) Respect license holders/Applicant’ rights to confidentiality.
(5) Act without delay if he/she has good reason to believe that his/her colleague may be putting patients or public health at risk.

(c) Identify the relevant legal and ethical considerations, to help him/her make the aeromedical disposition decisions that respect license holders’, privacy, autonomy and choices and that also benefit the wider aviation community. If in doubt, he/she should seek the advice of experienced colleagues, or the CAA Aeromedical section as a regulatory body.

(d) Inform patients about disclosures for regulatory purposes to the CAA MAs for review and get the patient’s express consent for this purpose.

(e) Understand that confidentiality is an important duty, but it is not absolute. He/she can disclose personal information if:

(1) it is required by law,
(2) it is justified in the public interest.

CAR FCL-3.135 Ethics

(a) All CAA services shall be done honestly and honourably, and designated peoples are expected to do the same. The AME advice, strategic assistance and the methods imparted through his/her training, take proper account of ethical considerations, together with the protection and enhancement of the moral position of the license holders and the AME.

The AME shall:
(1) Provide a good standard of practice and care;
(2) Keep his/her professional knowledge and skills up to date;
(3) Recognize and work within the limits of his/her competency;
(4) Work with colleagues in the ways that best serve the license holders/Applicant' interests;
(5) Work in partnership with the license holders/Applicant;
(6) Listen to license holders and respond to their concerns about their licensing issues; and
(7) Respect license holders' right to reach decisions with the health management team about their treatment and care which does not contradict his licensing issue.

CAR FCL-3.140 Duty of care

(a) The AME's actions and advice will always conform to relevant law, and all businesses related to civil aviation activities shall avoid causing any adverse effect on the human rights of people in the organizations they deal with, the local and wider aviation environments, and the safety of society at large.

(b) The AME is personally accountable for his/her professional practice and shall always be prepared to justify his/her decisions and actions.

CAR FCL-3.145 Conflict of interest

Due to the sensitive nature of this particular aviation regulatory services, designated examiner generally shall try to avoid any dealings with license holders seeking help when they don't meet the CAA requirements. A possible conflict of interest exists when the AME has a material personal interest, either direct or indirect, in a proposed transaction involving the aviation activity.

When the AME has an interest in a transaction being considered by the examinee, the AME shall disclose that conflict before the Authority decides the action on the matter.

CAR FCL-3.150 Quality assurance

The AME shall maintain the quality of what he/she does through constant ongoing review with CAA staff, of all aims, activities, outcomes and the cost-effectiveness of every activity. Regular review meetings and regular progress reports shall be maintained.

CAR FCL-3.155 Professional conduct

All activities shall be conducted professionally and with integrity. The AME shall take great care to be completely objective in his/her judgment and any recommendations that he/she give, so that issues are never influenced by anything other than the best and proper interests of the aviation community.

CAR FCL-3.160 Equality and discrimination

The AME shall be fair and objective in his/her advice and actions, and shall endeavour not to be influenced in his/her decisions, actions or recommendations by issues of gender, race, creed, colour, age, personality or personal disability.

CAR FCL-3.165 Number and location of AeMC and AME

The Authority will determine the number and location of examiners it requires, taking account of the number and geographic distribution of its pilot population.

CAR FCL-3.170 Falsification and Negligence

(a) Cases of falsification is an illegal act. This is true whether the false statement is made by the applicant, the Examiner, or both. In view of the pressures sometimes placed on the Examiners by their regular patients to ignore a disqualifying physical defect that the physician knows to exist. It is important that all Examiners be aware of possible consequences of such conduct.

(b) Any negligence or wrongful certification, which would permit a medically unfit pilot, ATC and Cabin Crew might create a serious safety hazard for the public, for the Government, and for the Examiner. If the examination is fast and the Examiner fails to find a disqualifying medical illness that should have been discovered during a thorough and careful examination, the Examiner may bear the responsibility for the consequences of such action.

CAR FCL-3.175 Consequences of Falsification and Negligence

The case of Falsification and/or Negligence is an illegal act, which may create a flying safety hazard and serious effect for public, such an act requires the CAA Medical Assessor to conduct an immediate investigation and take an appropriate enforcement action.

CAR FCL-3.180 Deferment

Circumstances in which the prescribed renewal of a license holder operating in an area distant from designated medical examination facilities may be deferred at the discretion of the CAA, provided that such deferment shall only be made as an exception and shall not exceed:

(a) two consecutive periods each of three months in the case of a flight crew member of an aircraft engaged in commercial operations provided that in each case a favourable medical report is obtained after examination by a designated medical examiner of the area concerned, or, in cases where such a designated medical examiner is not available, by a physician legally qualified to practice medicine in that area;

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

(c) in the case of a private pilot, a single period not exceeding 24 months where the medical examination is carried out by an examiner designated by other ICAO member states in which the applicant is temporarily located.

(d) The report of the medical examination performed for (a) & (c) above, shall be sent to the CAA.

CAR FCL-3.185 Evidence of medical fitness

(a) The various ways in which Contracting States provide license holders with evidence that they meet the medical requirements are outlined as follows:
   (1) To satisfy the licensing requirements of medical fitness for the issue of various types of licenses.
   (2) The applicant must meet certain appropriate medical requirements which are specified as four Classes of Medical Assessment.
   (3) The Licensing Authority issues the license holder with the appropriate Medical Assessment, Class 1, Class 2, Class 3, or Cabin Crew medical certificates.

(b) Two basic principles are essential when assessing an applicant's medical fitness for aviation duties as specified in Annex 1, Chapter 6, "Medical Provisions for Licensing," namely:
   (1) The applicant shall be physically, psychologically and mentally capable of performing the duties of the license or rating applied for or held.
   (2) There shall be no medical reasons which make the applicant liable to incapacitation while performing duties.

Note 1: The main objective of the CAR FCL-3 is to provide guidance material and present concepts on how to achieve these principles by assessing symptoms and signs that occur commonly in medical examinations for the aviation licenses but which have not been or cannot be included in detail in Annex 1.

Note 2: It is also envisaged that the guidance material will help ensure international uniformity in the implementation of the SARPs.

Intentionally Left Blank

SUBPART C — GENERAL REQUIREMENTS

SECTION 1 – General

Guidelines for conducting Medical Examinations and Assessments for the Medical Certification of Pilots, ATC, and Cabin Crew.

CAR FCL-3.200 Aeromedical Board (AMB)

(a) ***Establishment***

(1) The Civil Aviation Authority has established an Aeromedical Board (AMB) as the organizational element within the Authority responsible for the oversight and management of the Aviation Medical Examiner (AME) system, develop, and establish policies, procedures, standards, and regulations governing the AME system. (Refer to Aeromedical Guidance Manual).

(b) ***Flexibility***

Variation and review policy

(1) *CAA Review.* If the medical requirements prescribed in this CAR FCL-3 (Medical) for a particular license are not fully met by an applicant, the appropriate medical certificate shall not be issued, revalidated or renewed by the AeMC or AME but the decision shall be referred to the Authority. If there are provisions in CAR -FCL-3 (Medical) that the individual under certain conditions (as indicated by the use of should or may) can be considered fit, a variation a flexibility may be granted by the Authority. The AMB and or MAs may issue, revalidate or renew a medical certificate after due consideration has been given to the requirements, and acceptable means of compliance.

i. The appropriate Medical Assessment shall not be issued or renewed unless the following conditions are fulfilled:

A. Accredited medical conclusion indicates that in special circumstances the applicant's failure to meet any requirement, whether numerical or otherwise, is such that exercise of the privileges of the license applied for is not likely to jeopardize flight safety.

B. Relevant ability, skill and experience of the applicant and operational conditions have been given due consideration; and

C. The license is endorsed with any special limitation or limitations when the safe performance of the license holder's duties is dependent on compliance with such limitation or limitations.

(2) Where the issue of a certificate will require more than one limitation, condition or variation, the additive and interactive effects upon flight safety must be considered by the CAA before a certificate can be issued.

(3) ***Airman Appeal***

i. Request for Reconsideration

ii. An Examiner's denial of a medical certificate is not a final CAA denial. An applicant may ask for reconsideration of an Examiner's denial by submitting a request of petition in writing within sixty (60) days to:

Director of Flight Safety Department
Civil Aviation Authority
Sultanate of Oman

iii. By not later than sixty (60) days after the service of the letter of Denial, the applicant may request, in writing, that the Director Flight Safety (DFS) provide for

reconsideration of the decision to denial. The request for review may be accompanied by supporting medical evidence;

iv. The DFS will transfer the appeal request to the CAA Medical Assessor (MAs) for review. If the MAs finds that the applicant is not qualified, the applicant is denied and Referred for further reconsideration and appeal procedures by AMB as per the petition of the applicant.

v. Within sixty (60) days of receipt of a request for petition, a written final decision either affirming or reversing the decision to withdraw will be issued.

(c) ***Aero medical Board Members*** will consist of:

(1) Director General;
(2) Director Flight Safety;
(3) Chief of Licensing section;
(4) Medical Assessor (MAs);
(5) Two Senior medical examiners;
(6) Representative from the operation department of the concerned operator (if required).

CAR FCL-3.205 Medical assessor (MAs).

(a) The Civil aviation authority shall use the service of one or more medical assessor(s) to undertake the tasks described in this Section. The medical assessor shall be qualified in medicine and have:

(1) Bachelor of Medicine and Surgery

(2) Experience in medicine of at least 5 years;

(3) Specific training in aviation medicine; and

(4) Experience in medical certification.

EXPERIENCE AND KNOWLEDGE

Medical assessors shall have practical experience in the field of medicine, surgery, aviation medicine and Aeromedical examiner of not less than Five (5) years . Fully aware theoretically and practically of all international regulations and laws governing civil aviation so that he can deal with the issues raised with full professionalism to achieve the highest standards of aviation safety.

The following should count towards maintaining medical professional competence:

(1) Undertaking regular refresher training;

(2) Participating in international aviation medicine conferences.

(3) Having practical knowledge and experience of the aviation environment in which the holders of license and ratings carry out their duties at least once every 5 years.

(b) The Medical assessor evaluate medical reports submitted to the Licensing Authority by medical examiners.

(c) Medical assessors are expected to maintain the currency of their professional knowledge.

(d) The role of the medical assessor and the evaluation of medical reports are further outlined in Aeromedical Guidance Manual.

(e) The medical examiner shall be required to submit sufficient medical information and documents to the Licensing Authority to enable the MAs to undertake accurate and proper Medical Assessment Review, Monitoring and audit.

Note: The purpose of such auditing is to ensure that medical examiners meet applicable standards for good medical practice and aeromedical risk assessment.

(f) Medical assessors, because of their functions as employees of or consultants to the Licensing Authority and as supervisor for the designated medical examiners, should have advanced training in the specialty of aviation medicine and extensive experience in regulatory and clinical civil aviation medicine.

(g) In addition to evaluating medical reports submitted to the Licensing Authority and making final assessments in borderline cases, the medical assessor shall be in charge of Accredited Medical Conclusions. An important duty of the medical assessor is the safeguarding of medical confidentiality, although pertinent medical information may be presented by the medical assessor to other officials of the Licensing Authority when justified by operational concerns or when an Accredited Medical Conclusion is sought. Also, the audit of medical reports by designated medical examiners and refresher training of medical examiners will fall within the remit of the medical assessor.

SECTION 2 – Examinations and Certifications

CAR FCL-3.215 Aeromedical examinations

(a) For Class 1 medical certificates. Initial examinations for a Class 1 medical certificate shall be carried out at an AeMC under the supervision of a SAME. Revalidation and renewal examinations may be delegated to an AME.

(b) For Class 2, Class 3, and Cabin Crew medical certificates. Initial, revalidation and renewal examinations for a Class 2, Class 3, and Cabin crew medical certificate shall be carried out at an AeMC or by an AME.

(c) The applicant shall complete the appropriate application form. On completing a medical examination, the AME shall submit without delay a signed full report with all supported documents to the CAA (OFFICE OF MAs) in the case of all Class 1, Class 2, Class 3 and Cabin crew examinations, except that, in the case of an AeMC, the accountable manager, or SAME of the AeMC may sign the reports and certificates on the basis of assessments made by staff physicians of the AeMC.

(d) Periodic Requirements. A summary of special investigations required at initial, routine revalidation or renewal, and extended revalidation and renewal examinations.

CAR FCL-3.220 Aeromedical Certification

Introduction

(a) Two basic principles are essential when assessing an applicant's medical fitness for aviation duties as specified in ICAO Annex 1, Chapter 6, "Medical Provisions for Licensing," namely:
   (1) The applicant shall be physically, psychologically and mentally capable of performing the duties of the license or rating applied for or held.
   (2) There shall be no medical reasons which make the applicant liable to incapacitation while performing duties.

(b) The main objective of the Manual of Civil Aviation Medicine is to provide guidance material and present concepts on how to achieve these principles by assessing symptoms and signs that occur commonly in medical examinations for the aviation licenses but which have not been or cannot be included in detail in ICAO Annex 1.

(c) It is also envisaged that the guidance material will help ensure international uniformity in the implementation of the SARPs.

(d) The foregoing two basic principles are explicitly detailed in the general, (all-embracing) Chapter 6, paragraph 6.2.2 from ICAO Annex 1, which states as follows:
   (1) Physical, psychological and mental requirements – An applicant for any class of Medical Assessment shall be required to be free from:
      i. Any abnormality, congenital or acquired; or
      ii. Any active, latent, acute or chronic disability; or
      iii. Any wound, injury or sequelae from operation; or
      iv. Any effect or side-effect of any prescribed or non-prescribed therapeutic, diagnostic or preventive medication taken;
      v. Any psychological or psychiatric illness which might affect the Performance and Awareness, Cognition, and Behaviour might be affecting flying and public safety;

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

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

(e) The requirements for medical assessments in ICAO Annex 1, Chapter 6, are listed under subheadings as follows:

(1) Physical, psychological and mental requirements, covering matters of a general medical certification nature which apply to all types of licenses.

(2) Visual acuity test requirements, detailing general visual acuity test requirements applicable to all categories of license.

(3) Colour perception requirements, detailing general colour perception requirements applicable to all categories of licenses.

(4) Hearing test requirements, detailing general hearing requirements applicable for all categories of licenses.

CAR FCL-3.225 General Medical Requirements

(a) The applicant for a Medical Assessment shall provide the medical examiner with a personally certified statement of medical facts concerning personal, family and hereditary history. The applicant shall be made aware of the necessity for giving a statement that is as complete and accurate as the applicant's knowledge permits, and any false statement shall be dealt with as falsification.

(b) The level of medical fitness to be met for the renewal of a Medical Assessment shall be the same as that for the initial assessment except where otherwise specifically stated.

(c) The medical examination shall determine that no physical, mental, psychological condition exists which may reduce the applicant's medical fitness to a significant degree during the period of validity of the Medical Assessment.

Note: The medical requirements of ICAO Annex 1 are not concerned with social considerations or medical conditions of importance for employment. Nevertheless, on initial issue of a Medical Assessment, it would be poor medical practice to encourage an applicant to pursue flight training if the minimum requirements of Annex 1 are barely met, especially in cases where further deterioration might be expected or is likely to occur. Likewise, it would be poor practice to disregard the preventive aspects of the regulatory examination for renewal.

(d) The Standards and Recommended Practices established in any medical guidance, on their own, shall be sufficiently detailed to cover all possible individual situations. Of necessity, many decisions relating to the evaluation of medical fitness must be left to the judgement of the individual medical examiner.

(e) The evaluation must, therefore, be based on a medical examination conducted throughout in accordance with the highest standards of medical practice.

Predisposing factors for disease, such as obesity and smoking, may be important for determining whether further evaluation or investigation is necessary in an individual case. In cases where the applicant does not fully meet the medical requirements and in complicated and unusual cases, the evaluation may have to be deferred to the CAA and the case submitted to the Medical Assessor (MAs) of the Authority for final evaluation. In such cases, due regard must be given to

the privileges granted by the license applied for or held by the applicant for the Medical Assessment, and the conditions under which the license holder is going to exercise those privileges in carrying out assigned duties.

(f) Basic safety management principles, when applied to the medical assessment process of licence holders, that as a minimum include:

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

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

(g) The AeMC shall establish, document, implement and maintain a management system that includes the items addressed in CAR-ORA.GEN.200.

(h) The CAA shall implement appropriate aviation-related health promotion for license holders subject to medical assessment to reduce feature medical risk to flight safety.

GM to CAR FCL-3.225(h) Health Promotion Program

Aviation-related health promotion for license holders to reduce future medical risks to flight safety

Civil Aviation Authority require to include health promotion activities in the medical assessment process, with the aim of reducing longer-term health risks. By the identification of remediable and treatable risk factors and conditions, it is possible to reduce the long-term health risks to flying crew members & controllers.

It is therefore a requirement that at the conclusion of the medical, DAMEs provide feedback to applicants on their health status. Advice should be given about any modifiable risk factors identified. Medical Record System (MRS) provides trend data on matters such as blood pressure and weight and should be used to support recommendations.

DAMEs are not expected to become involved in treatment (unless the applicant is also a patient), but should provide a referral for the applicant, to attend their regular treating doctor. This should explain the areas of concern.

Referrals or other actions taken must be recorded at the end of the medical in MRS. It is recommended to use the MRS templates, which will ensure a record is kept and available for future applications. This is an ICAO Standard, and will therefore be auditable.

By promoting a healthy lifestyle, it is possible to help ensure that flying crews / ATCOs pose a minimal risk to safety from the beginning of their career until they retire. This can be accomplished if they:

- Maintain a healthy heart
- Develop mental health resilience
- Adopt a low risk strategy towards alcohol
- Avoid illicit drugs
- Adopt cancer avoidance habits
- Manage diet and weight
- Manage risks associated with accidental injury
- Get sufficient sleep
- Understand and reduce travel-related risks
- Protect their hearing and vision

Understanding cardiovascular risk

- Get active – dose response (150 minutes' moderate exercise vs 75 minutes intense)
- Understand you blood fat levels

- Manage your blood pressure
- Eat a healthy diet
- Maintain a healthy weight
- Understand the risk of diabetes
- Stop smoking
- Talk to your pilot / ATCO about why we are so interested in the
- CVS!
- ……heart attack, stroke, hypertension, arrhythmias

Note: ICAO has issued guidance material to states on health promotion and has published a book for pilots with the title "Fitness to fly – a medical guide for pilots".

CAR FCL-3.230 Who May Be Certified

(a) Age Requirements

(1) There is no age restriction or aviation experience requirement for medical certification.

(2) Any applicant who qualifies medically may be issued a Medical Certificate regardless of age.

(3) There are, however, minimum age requirements for the various airman certificates, Pilots and Flight Instructors, and Ground Inspectors are as follows:

i. Airline transport pilot (ATP) certificate: twenty-one (21) years.
ii. Commercial pilot certificate (CPL): eighteen (18) years.
iii. Multi-crew pilot license (MPL): eighteen (18) years.
iv. Private pilot certificate (PPL): powered aircraft – seventeen (17) years.
v. Gliders and balloons pilots: sixteen (16) years.

CAR FCL-3.235 Medical certificates

(a) Flight crew, ATC and cabin crew license are issued to applicants who have met the relevant technical and theoretical standards. A valid medical certificate appropriate for the Class of license must accompany the license for the license holder legally to exercise the privileges of the license.

(b) A medical certificate shall only be issued, revalidated or renewed once the Applicant meet required medical standards and/or assessments including those pertaining to medical history unless otherwise authorized by the CAA.

(c) **Requirement for medical certificate**

(1) **Medical certificates**

i. A student pilot shall not fly solo unless that student pilot holds a medical certificate, as required for the relevant license.
ii. Applicants for and holders of a private pilot license (PPL), or a balloon pilot license (BPL) shall hold at least a Class 2 medical certificate.
iii. Applicants for and holders of an SPL or a BPL involved in commercial or balloon flights shall hold at least a Class 2 medical certificate.
iv. If a night rating is added to a PPL the license holder shall be colour safe.
v. Applicants for and holders of a commercial pilot license (CPL), a multi-crew pilot license (MPL), or an airline transport pilot license (ATPL) shall hold a Class 1 medical certificate.

vi. If an instrument rating is added to a PPL, the license holder shall undertake pure tone audiometry examinations in accordance with the periodicity and the standard required for Class 1 medical certificate holders.
vii. Applicants for and holders of an air traffic controller license, student air traffic controller license, or shall hold a Class 3 medical certificate.
viii. A license holder shall not at any time hold more than one medical certificate issued in accordance with this Chapter.
ix. A license holder shall not exercise the privileges of his/her license unless he/she holds a current medical assessment appropriate to the license. A Class 1 medical certificate shall include the privileges and validity of a Class 2 medical certificate.

(2) **Application and Declaration for a medical certificate**

i. Applications for a medical certificate shall be made in a Hard Copy or electronic format established by the CAA.
ii. Applicants for a medical certificate shall provide the AeMC or AME as applicable, with:
    A. proof of their identity;
    B. a signed CAA Approved Declaration form:
        - of medical facts concerning their medical history;
        - as to whether they have previously undergone an examination for a medical certificate and, if so, the date, place and result of the last examination;
        - whether a Medical Assessment has previously been refused, revoked or suspended and, if so, the reason for such refusal, revocation or suspension.
iii. When applying for a revalidation or renewal of the medical certificate, applicants shall present the most recent medical certificate to the AeMC or AME prior to the relevant examinations

(3) **Application for a medical certificate**

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

(4) **Issue, revalidation and renewal of medical certificates**

i. 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.
ii. Initial issue:
    A. Class 1 medical certificates shall be issued by an AeMC.
    B. Over 60 Applicant medical certificate shall be issued by an AeMC.
    C. Class 3 medical certificates shall be issued by an AeMC or an AME.
    D. Class 2 medical certificates shall be issued by an AeMC or an AME.
    E. Cabin Crew medical certificate shall be issued by an AeMC or an AME
iii. Revalidation and renewal:
Class 1, Class 2, Class 3 and Cabin Crew medical certificates shall be revalidated or renewed by an AeMC or an AME.
    A. The AeMC or AME shall only issue, revalidate or renew a medical certificate if:
    B. 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

C. 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.

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

v. The CAA may approve the issue or re-issue a medical certificate, as applicable, if:
   A. a case is referred;
   B. it has identified that corrections to the information on the certificate are necessary

vi. When, in the opinion of the Aeromedical Examiner, the applicant's medical condition does not meet the applicable medical standards prescribed in this Chapter, a medical certificate shall not be issued or renewed unless, the following conditions are fulfilled:
   A. an 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 license applied for is not likely to jeopardize flight safety;
   B. relevant ability, skill and experience of the applicant and operational conditions have been given due consideration;
   C. the license is endorsed with any special limitation or limitations ensuring the safe performance of the license holder's duties.

vii. Pursuant to (vii), the CAA may approve or deny the medical certificate or appoint an Aeromedical Evaluation Board when further evaluation is required for the CAA to conclude on the case.

viii. If the opinion of the CAA, the case under evaluation by the appointed Aeromedical Evaluation Board could be resolved prior to final decision by the Aeromedical Evaluation Board, then the CAA may decide to dissolve prematurely the Aeromedical Evaluation Board and take final decision on the case.

(1) **Special Issue, revalidation and renewal of medical certificates**

Aircrew personnel and applicants who do not meet Medical standards prescribed in this Chapter may be granted a medical certificate under alternative means of compliance (with Special issuance letter or SODA). And this Medical certification may be granted on the need of the service, consistent with training, experience, performance, and proven safety of the aircrew personnel.

i. **Issue Pre-requisites of Medical Certification under this paragraph**
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 does not exceed 1 % annual incapacitation risk.
   B. The disqualifying defect does not pose a risk of sudden incapacitation.
   C. It does 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 is not subject to aggravation by flying duties.
   E. It is 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 should 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.

ii. 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:**
- Deny the certification and refer the case to the CAA for decision along with the supporting documents, or
- Recommend to convene Aeromedical Evaluation Board, or
- 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 CAA endorsement and granting of a Medical certificate by Licensing & Aeromedical Section. The AME should use the service, whenever applicable, of locally CAA recognised or designated specialists.

iii. The AME then will prepare the request to the CAA, with the following items:

A. Complete application
B. A detailed history, review of systems, and physical findings associated with the defect should be recorded on the physical exam:
- All supporting documentation required by the appropriate Aeromedical section of the Licensing Department (i.e. laboratory, radiology, consultant reports...)
- AME's recommended disposition
- Applicant's most recent flight Assessment check – if applicable
- All information required for continuation of previous waivers/deviations – whenever applicable

C. The Aeromedical Inspector will review the Aeromedical summary and associated reports and approve/deny the issue of medical certificates, or, will appoint Aeromedical Evaluation board and will notify the applicant of its intent to convene a medical evaluation board.

CAR FCL-3.240 Aeromedical Evaluation Board

(a) A special board consists of members appointed by the Medical Assessor. 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 Medical Assessor will appoint three AME doctors to act as members of this board. The AME who has been dealing with the case and most involved will be a member of the board.

(c) The CAA will authorize the President to consult with other experts in the medical community to conduct a proper evaluation of the applicant's medical condition.

(d) It is the responsibility of the treating AME to present all the clinical details and relevant investigations to the board members.

(e) The Medical Assessor (MAs) will usually make conclusions based on the Medical Evaluation Board recommendation report received from the President.

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

(g) The President of the board should compile a final report to the CAA that:
   (1) Presents the details of the clinical problem and the board recommendations.
   (2) Outlines any investigations done.
   (3) Includes all reports from external specialists.
   (4) 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.
   (5) The final board reports should be reviewed and signed by all members

(h) The Medical Assessor (MAs) 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 CAA will hold the final decision and The Medical Assessor (MAs) will recommend the issue of Medical certificate

(i) The Medical Assessor (MAs) will issue special authorization, or SODA (Statement of Demonstrated Ability)

(j) Medical Assessor (MAs) specifies the Class of medical certificate authorized to be issued and may do any of the following:
   (1) Authorize the AME to Issue a medical certificate with or without limitation/s.
   (2) Issue an Authorization for Special issuance.
   (3) Issue SODA.
   (4) Revoke the certificate.

(k) **Follow up Action**

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

A person who has been granted a Medical certificate based on a special medical flight or practical test need not take the test again during later physical examinations unless the CAA 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.

(l) **Withdrawal of medical certificate issued under this paragraph**

If non -compliance is reported, then the Medical certificate granted as per the special issuance litter to a person who does not meet the applicable medical provisions may be withdrawn at any time if:
   (1) There is adverse change in the holder's medical condition;
   (2) The holder fails to comply with a statement of functional limitations or operational limitations issued as a condition of certification;
   (3) The holder fails to comply with the periodic follow up requirements endorsed on his/her Medical certificate as per the special issuance litter as a condition of certification;
   (4) Public safety would be endangered by the holder's exercise of his license privileges;
   (5) The holder fails to provide medical information reasonably needed by the CAA for certification.

(6) If the Medical certificate is withdrawn the following procedures apply
(7) The holder of the Medical certificate will be served a letter of withdrawal, stating the reason for the action;
(8) By not later than thirty (30) days after the service of the letter of withdrawal, the holder of the Medical certificate may request, in writing, the CAA for review of the decision to withdraw by the AMB. The request for review should be accompanied by supporting medical evidence to the flight safety department
(9) Within sixty (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,

(m) **Renewal & Revalidation medical certification issued under the paragraph above**

The AME is permitted to re-issue a medical certificate for an applicant who has a medical condition that is disqualifying under current medical provisions and was extensively evaluated through Aeromedical board and was given a Medical certificate with certain limitation through a **Special Issuance Letter**. The Applicant should 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 CAA Medical Assessor.

(1) **Validity**

i. Class 1 medical certificates shall be valid for a period of maximum twelve (12) months.
ii. The period of validity of Class 1 medical certificates shall be reduced to six (6) months for license holders who:
    A. are engaged in single-pilot commercial air transport operations carrying passengers and have reached the age of forty (40);
    B. have reached the age of sixty (60).
iii. Class 3 medical certificates shall be valid for a period of twenty-four (24) months.
iv. The period of validity of Class 3 medical certificates shall be reduced to twelve (12) months for license holders who have reached the age of 40. A medical certificate issued prior to reaching the age of 40 shall cease to be valid when the license holder reaches the age of forty-one (41).
v. Class 2 medical certificates shall be valid for a period of up to:
    A. Sixty (60) months until the license holder reaches the age of 40. A medical certificate issued prior to reaching the age of 40 shall cease to be valid after the license holder reaches the age of 42;
    B. Twenty-four (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 license holder reaches the age of 51; and
    C. Twelve (12) months after the age of 50.
vi. The validity period of a medical certificate, including any associated examination or special investigation, shall be:
    A. determined by the age of the applicant at the date when the medical examination takes place; and
    B. 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
vii. The validity period of a medical certificate may be extended, at the discretion of the CAA, up to forty-five (45) days.

(2) **Revalidation**
Examinations and/or assessments for the revalidation of a medical certificate may be undertaken up to forty-five (45) days prior to the expiry date of the medical certificate.

(3) **Renewal**
   i. If the holder of a medical certificate does not comply with (b), a renewal examination and/or assessment shall be required.
   ii. In the case of Class 1, Class 2 and Class 3 medical certificates:
      A. if the medical certificate has expired for more than two (2) years, the AeMC or AME shall only conduct the renewal examination after assessment of the aero-medical records of the applicant;
      B. if the medical certificate has expired for more than five (5) years, the examination requirements for initial issue shall apply and the assessment shall be based on the revalidation requirements.

(4) The holder of a pilot license who has attained the age of 60 years shall not act as a pilot of an aircraft engaged in commercial air transport or private operation unless he meets the CAA over 60 medical examination requirements.

(5) **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 and or possible extenuating medical circumstances/findings.

CAR FCL-3.245 Classes of Medical Certificate (Assessment)

Four Classes of Medical Assessment shall be established as follows;

(a) Class 1 Medical Assessment;
Applies to applicants for and holders of:
   (1) Commercial pilot licenses airplane and helicopter.
   (2) Multi-crew pilot licenses airplane
   (3) Airline transport pilot licenses airplane and helicopter

(b) Class 2 Medical Assessment;
Applies to applicants for and holders of:
   (1) Private pilot licenses airplane and helicopter
   (2) Free balloon pilot licenses
   (3) Student pilot license
   (4) Flight engineer licenses

(c) Class 3 Medical Assessments;
Applies to applicants for, and holders of:
   (1) Air traffic controller licenses.
   (2) RPA licenses for large RPAs (drones)

(d) Cabin Crew Medical Assessment
Applies to applicants for and holders of:
   (1) Cabin crew licenses

CAR FCL-3.250 Duration of Validity

The Medical assessment issued in accordance with CAR FCL-3.235 shall be valid from the date of the examination for a period not greater than the validity period stated in the following table:

License type	Class	Validity
ATPL Under 40	1	12 months
ATPL Over 40	1	12 months
ATPL Over 60	1	6 months
ATPL Over 40 Single crew	1	6 months
CPL Under 40	1	12 months
CPL Over 40	1	12 months
CPL Over 60	1	6 months
Free balloon pilot license Under 40	2	60 months
Free balloon pilot license Over 40	2	24 months
Flight Engineer	2	12 months
Private Pilot Under 40	2	60 months
Private Pilot Over 40	2	24 months
Private Pilot Over 50	2	12 months
Student Pilot	2	24 months
ATCO Under 40	3	24 months
ATCO Over 40	3	12 months
RPA Under 40	3	24 months
RPA Over 40	3	12 months
Cabin Crew Under 40	Cabin crew	60 months
Cabin Crew Over 40	Cabin Crew	24 months

(1) Special consideration for validity, revalidation and renewal of medical certificates

i. Regardless of the validity periods stated above, the CAA Medical Assessor may in an individual case require this period to be shortened.

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

iii. A medical condition, although compatible with licensing, may be of a nature where frequent medical check-ups are required. In such cases the period of validity of the Medical Assessment may be reduced to ensure adequate monitoring of the condition in question.

iv. An AME or SAME may conduct a medical examination for the applicant at any time before the expiry of the license for either predetermined medical reasons or at the request of the applicant providing the renewal has no negative impact on the safety aspect of the certificate being issued.

GM to FCL-3.250 Duration of Validity

(1) If a Class 1 ATPL holder has a renewal aeromedical examination conducted on the 15 September 2018 with a Date of Birth as 06 December 1958, the candidate, on this date, is still under sixty (60) so he does not require to undergo the next medical within the next 6 months, however because he will turn 60 on the 06 December 2018, the validity of the medical certificate will be reduced from 12 to 06 months. In other words, from the date of 06 December 2018 the candidate would require to have a medical within 6 months, this would render the date of expiry of the medical assessment issued on 15 September 2018 to be 15 Mar 2019.

(2) When calculated in accordance with above, the period of validity will, for the last month counted, include the day that has the same calendar number as the date of the medical examination or, if that month has no day with that number, the last day of that month.

(3) It is advisable to let the calendar day on which the medical assessment expires remain constant year after year by allowing the expiry date of the current medical assessment to be the beginning of the new validity period under the proviso that the medical examination takes places during the period of validity of the current medical assessment but no more than forty-five (45) days before it expires.

CAR FCL-3.253 Medical Certification Requirements for over Sixty (60) Years

(See GM to CAR FCL-3.253)

In addition to the change in frequency of medical examinations stated in CAR FCL-3.250, when an applicant for a medical certificate has passed their 60th birthday the following requirements for all classes of medicals are to be implemented with immediate effect.

(1) Initial issuance of over 60th birthday medical certificate requirements.

(a) All initial over 60 medical certifications shall be done at the approved AeMC.

(b) 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 should include:

i. A psychological evaluation, which shall be conducted by a psychologist who has the privileges to conduct the neurocognitive assessment.

ii. Medical examination by a SAME or SAME equivalent which should include alcohol screening test ***[See CAR FCL-3.530(C) CAR FCL-3.935(d) for alcohol screening and Appendix 12 for associated forms]***.

iii. An extended eye examination by an ophthalmologist.

iv. Fasting blood glucose and a glucose tolerance test in cases where the initial test is abnormal.

v. Lipid profile.

vi. Cardiac evaluation by stress ECG.

vii. Haemoglobin.

viii. Prostate test (either USG or PSA)

(2) ***Revalidation Requirements.*** Renewal of over 60 medical certificates can be conducted at any recognised AeMC. The license holder will undergo, in addition to the usual medical assessment requirements;

(a) Every 6 months;

i. An ECG.

ii. Fasting blood Glucose

iii. Lipid profile

iv. Haemoglobin

(b) Every 12 months;

i. Ophthalmology consultation

ii. Audiogram

iii. Stress ECG

GM to CAR FCL-3.253 Medical certification requirements for over Sixty (60) years

A. Alcohol screening tests

(1) **Indications**

(a) Screening as part of over 60 medical certifications.
(b) As part of the medical evaluation determined by the AME during the regulatory medical examination.
(c) New cases of cardiac arrhythmias especially Atrial Fibrillation, Insomnia, Mood disorders, Liver function derangement, Isolated Hyper triglyceridemic.
(d) Newly diagnosed Hypertension,
(e) Newly diagnosed Diabetes,
(f) Suspicious Musculoskeletal injuries e.g. Rib fractures or Metacarpal fractures or Road Traffic Accidents,
(g) New onset of Gout.
(h) Any elevated MCV, isolated elevated GGT, elevated ferritin and elevated CDT detected on routine testing not related with clinical findings and investigated appropriately.
(i) Referral following an aviation incident or work-related issues.
(j) Third party notifications for suspected Drug or Alcohol misuse.
(k) Drink/Drug drive arrests whether local or international

(2) **Screening tools:**

(a) A detailed interview and system review should be conducted with emphasis on the following:
i. Alcohol intake – amount /type/how often
ii. Smoking history
iii. Family history of substance misuse
iv. Physical dependence – withdrawal symptoms
v. Sickness absence record – pattern of frequent, short term, last minute leave is often seen with substance use disorder
vi. Neurological issues
vii. Cardiac – arrhythmias/hypertension
viii. Gastroenterology – Gastritis/GORD
ix. Injuries- recurrent or unexplained
x. Legal and social problems
xi. Marital disharmony
xii. Psychological problems

(b) Examination
i. Physical dependence – signs of withdrawal (e.g. irritability, restlessness, apprehension etc.)
ii. General appearance – complexion
iii. Liver damage – spider naevi, hepatomegaly
iv. Hypertension
v. Pancreatitis
vi. Cardiomegaly, arrhythmias

(c) Questionnaire
i. AUDIT (Alcohol Use Disorders Identification Test) – score of eight (8) or more suggests that there could be a problem with alcohol.
ii. It should be correlated with history and clinical examination and blood tests.

(3) **Laboratory testing**

(a) GGT (Gamma-Glutamyl Trasferase): Is raised in about 80% of heavy drinkers, but is not a completely specific marker for harmful use of alcohol.

(b) 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.

(c) 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, plus a liver ultrasound to assess for biliary disease and a full report from a substance abuse specialist must be provided to the CAA medical assessing officer regarding the alcohol intake.

(d) Others if indicated (e.g. LFTs, Triglycerides, Ferritin, Liver Ultrasound, Urine EtG/ PeTH) will be considered when making the final evaluation report.

(4) **Laboratory evaluation**

In the presence of a high index of suspicion, the AME will without delay, evaluate the applicant against all the assessments as per the CAA Alcohol Use Disorder Form and then the AME should refer the case to the SAME and/or CAA Medical Assessor for further evaluation and recommendation.

CAR FCL-3.255 Application for a Medical Certificate

(a) Applications for a medical certificate shall be made in a form and manner established by the CAA.

(b) Applicants for a medical certificate shall provide the AeMC, SAME, and 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 applied for a medical certificate or have undergone an aero-medical 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 most recent medical certificate to the AeMC, AME or SAME, as applicable, prior to the relevant aero-medical examinations.

CAR FCL-3.260 Content of certificate.

(a) The medical certificate shall contain the following information

(1) Reference number (as designated by the Authority) Class of certificate

(2) Full name Date of birth Nationality

(3) (Date and place of initial medical examination Date of last extended medical examination Date of last electrocardiography

(4) Date of last audiometry

(5) Limitations, conditions and/or variations

(6) AME name, number, signature and Date of general examination with the Signature of applicant.

CAR FCL-3.265 Use of Medication, Drugs or Other Treatments

(a) A medical certificate holder who is taking any prescription or non-prescription medication or drug or who is receiving any medical, surgical, or other treatment shall comply with the requirements of CAR FCL-3.010.

(b) All procedures requiring the use of a general or spinal anesthetic shall be disqualifying for at least seventy-two (72) hours.

(c) All procedures requiring local or regional anesthetic shall be disqualifying for at least twelve (12) hours.

CAR FCL-3.270 Fraudulent Entries/ Declarations

(a) Prior to undertaking an aeromedical examination, AMEs should be satisfied that the candidate has the appropriate identification and shall inform the applicant about the possible legal consequences of a deliberate false statement made with the intention of obtaining a medical certificate.

(b) Thereafter the AME shall obtain the applicant's signature prior to completion of the applicant statement and examiner certification form and record all relevant historical details obtained from the applicant.

(c) A false declaration on a Medical Report shall be reported to the CAA as this will require further investigation and clarification of previous data recorded against the license held by the applicant.

CAR FCL-3.275 Medical Confidentiality.

(a) It is important that **ALL** persons involved in medical examination, assessment and certification shall ensure that medical confidentiality is always respected.

(b) Medical information is of a sensitive nature, and a person who has undergone a medical examination for issuance or renewal of his license has a right to expect that such information is kept confidential and disclosed only to medical officials.

(c) Establishment a separate medical section is, either within the authority or attached to it, Medical confidentiality is best assured when this medical section, where the reports from the medical examiners are received and evaluated, is headed by a physician, and has its own staff,

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

(e) When justified by operational considerations, the Medical Assessor (MAs) shall determine to what extent pertinent medical information is presented to relevant officials of the Licensing Authority, its own channels of communication, its own filing system.

CAR FCL-3.280 Access to Documentation and Record Keeping

(a) An AeMC, AME, and Approved Specialist responsible for coordinating assessment results and signing reports, shall be allowed access to any prior aeromedical documentation held by CAA licensing section and related to such examinations as that the AME is to carry out.

(b) Designated AME shall maintain records with details of medical examinations and assessments performed for the issue, revalidation or renewal of medical certificates and their results, for a minimum period of ten (10) years after the last examination date; and

(1) Keep all medical records in a way that ensures that medical confidentiality is always respected.

(2) Records shall be stored in a manner that ensures protection from damage, alteration, and theft.

(3) The record-keeping system shall ensure that all records are accessible whenever needed within a reasonable time.

(b) These records should be organized in a way that ensures traceability and available throughout the required retention period.

(c) Computer filed records shall be backed-up daily and stored in a different physical location or within the *icloud.*

Note: The Authority will be using paperless storage of all medical records, hence all examination results shall be transmitted via email using the approved forms available on the CAA website to the Licensing Section of the CAA.

CAR FCL-3.285 Release of Information

Except in compliance with an order of a court of competent jurisdiction, or upon an applicant's written request, Examiners will not divulge or release copies of any reports prepared in connection with the examination to anyone other than the applicant or the CAA. A copy of the examination may be released to the applicant upon request. Upon receipt of a court subpoena or order, the Examiner shall notify the appropriate PMA. Other requests for information will be referred to:

Medical Assessor (MAs)
Civil Aviation Authority
Oman – Muscat

CAR FCL-3.290 Disposition of Certificate

(a) A medical certificate shall be issued, in duplicate if necessary, to the person examined once the examination is completed and a fit assessment made.

(b) The AeMC, AME shall submit copy of medical certificate with the original copy of the examination form and all investigation and document within fifteen days to the CAA Aeromedical section for further action if required.

CAR FCL-3.295 CAA Review and Evaluation Medical Fitness Assessment.

(a) It's the responsibility of the examiner to send all Aeromedical examination report related to issuance, renewal, referral, denial airman certificate to CAA MAs within Fifteen days from the date of examination for the purposes of Review, Evaluation, Monitoring and Auditing.

(b) The following medical conditions are specifically disqualifying:
  (1) Abnormality, either congenital or acquired
  (2) Wound, injury or sequelae from operation;
  (3) Effect or side effect of any prescribed or non-prescribed therapeutic, diagnostic or preventive medication taken.
  (4) Active, latent, acute, or chronic disease or disability:
    i. Angina pectoris;
    ii. Bipolar disorder;
    iii. Cardiac valve replacement
    iv. Coronary heart disease that has required treatment or, if untreated, that has been symptomatic or clinically significant.
    v. Diabetes mellitus requiring insulin or other hypoglycemic medication.
    vi. Disturbance of consciousness without satisfactory medical explanation of the cause
    vii. Epilepsy
    viii. Heart replacement
    ix. Myocardial infarction
    x. Permanent cardiac pacemaker
    xi. Personality disorder that is severe enough to have repeatedly manifested itself by overt acts
    xii. Psychosis
    xiii. Substance abuse and dependence; and/or
    xiv. Transient loss of control of nervous system function(s) without satisfactory medical explanation of cause.

CAR FCL-3.300 Variation and Review Policy Referral to the Licensing Authority

(a) When an applicant who does not meet the established medical standards, the AeMC, or aero-medical examiner (AME) shall refer the decision on the fitness of an applicant to the licensing authority:
  (1) The CAA Medical Assessor evaluate the relevant medical documentation and request further medical documentation, examinations, and tests (if required); and
  (2) The Medical Assessor shall determine the applicant's fitness for the by issuing either Special issuance authority, SODA with one or more limitation(s) as necessary, or denial the certificate.
  (3) The licensing authority (CAA) should supply the AeMC or AME with all necessary information that led to the decision on aero-medical fitness.
  (4) The licensing authority should ensure that unusual or borderline cases are evaluated on a common basis.

CAR FCL-3.305 Flexibility

(See GM to FCL-3.305(l)(3) & Appendix 12)

(a) If the medical Standards for a particular license are not met, the appropriate Medical Assessment shall not be issued or renewed unless the following conditions are fulfilled:
  (1) 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 license applied for is not likely to jeopardize flight safety.

(2) Relevant ability, skill and experience of the applicant and operational conditions have been given due consideration; and

(3) The license is endorsed with any special limitation or limitations when the safe performance of the license holder's duties is dependent on compliance with such limitation or limitations.

Note: The provision of a degree of flexibility must not lead to a situation where its use becomes the rule rather than the exception. It 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 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.

(b) **Special issuance (SI)**

(1) If the applicant does not fully comply with the requirements for the relevant Class of medical certificate but is not likely to jeopardize the safe exercise of the privileges of the applicable license, the AeMC or AME shall, refer the decision on fitness of the applicant to the Medical Assessor (MAs) of the licensing authority,

(2) At his/her discretion the CAA Medical Assessor may grant an Authorization for Special Issuance of a Medical Certificate (Authorization), with a specified validity period, and specific limitation to the applicant certificate.

(3) The CAA Medical Assessor may authorize a special medical flight test, practical test, or request for medical evaluation board for this purpose.

(4) An airman medical certificate issued under the provisions of an Authorization expires no later than the Authorization expiration date or upon its withdrawal.

(5) An airman must again show to the satisfaction of the CAA Medical Assessor that the duties authorized by the Class of medical certificate applied for can be performed without endangering flying and public safety to obtain a new airman medical certificate/Authorization

(6) Relevant ability, skill and experience of the applicant and operational conditions have been given due consideration.

(7) The applicant license is endorsed with any special limitation or limitations when the safe performance of the license holder's duties is dependent on compliance with such limitation or limitations.

(8) In granting an Authorization, the CAA Medical Assessor may consider the person's operational experience and any medical facts that may affect the ability of the person to perform airman duties including:

i. The factors leading to and surrounding the episode
ii. The combined effect on the person of failing to meet one or more than one requirement of the CAA medical Guidance
iii. The prognosis derived from professional consideration of all available information regarding the person.

(c) **Process of the issue**

(1) when the applicant's ability to meet the prescribed 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 instantly.

(2) The AME may:

i. Deny the certification and defer the case to the CAA for decision along with the supporting documents, or
ii. Recommend to convene Aeromedical Evaluation Board if required based on the discretion of the CAA Medical Assessor.
iii. 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 CAA endorsement and granting of a Medical certificate by Licensing & Aeromedical Section. The AME must use the service -whenever applicable-of locally CAA recognized or designated specialists.

(3) The AME then will prepare the request to the CAA Licensing &Aeromedical section, with the following items:
i. Complete medical application form.
ii. A detailed history, review of systems, and physical findings associated with the defect must be recorded on the physical exam.
iii. All supporting documentation required by the appropriate Aeromedical section of the Licensing Section (i.e. laboratory, radiology, consultant reports).
iv. AME's recommended disposition.
v. Applicant's most recent flight Assessment check – if applicable.
vi. All information required for continuation of previous waivers/deviations – whenever applicable.

(d) **AME Assisted Special Issuance (AASI).**

(1) AME Assisted Special Issuance (AASI) is a process that provides Examiners the ability to re-issue an airman medical certificate under the provisions of an Authorization to an applicant who has a medical condition that is disqualifying.
(2) Examiners may re-issue an airman medical certificate under the provisions of an Authorization, if the applicant provides the requisite medical information required for determination. Examiners may not issue initial Authorizations. An Examiner's decision or determination is subject to review by the CAA.
(3) Following the granting of an Authorization for Special Issuance of a Medical Certificate (Authorization) by the CAA Medical Assessor (MAs), an Examiner may reissue a medical certificate to an applicant with a medical history of an initially disqualifying condition once the AASI's specialized criteria is met and the applicant is otherwise qualified.
(4) The CAA Medical Assessor (MAs) will send AASI's along with authorization letter to be strictly adhere by the medical examiner, indicating nature of limitation if exist.
(5) An Authorization granted to a person who does not meet the applicable medical standards medical guidance may be withdrawn, at the discretion of the CAA Medical Assessor (MAs), at any time if:
i. There is an adverse change in the holder's medical condition;
ii. The holder fails to comply with a statement of functional limitations or operational limitations issued as a condition of certification under the special issuance.
iii. Flying and Public safety would be endangered by the holder's exercise of airman privileges;
iv. The holder fails to provide medical information reasonably needed by the CAA Medical Assessor (MAs) for certification under the special issuance.
v. The holder makes or causes to be made a statement or entry that is the basis for withdrawal of an Authorization under the falsification.

(e) **If an Authorization is withdrawn** at any time, the following procedures apply:

(1) The holder of the Authorization will be served a letter of denial, stating the reason for the action;

(2) Within sixty (60) days after the issuing of the letter of denial, the holder of the Authorization may request, in writing, that the CAA Medical Assessor (MAs) requesting for review of the decision to withdraw. The request for review may be accompanied by supporting medical evidence;

(3) Within sixty (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

(4) A medical certificate rendered invalid pursuant to a withdrawal, in accordance with the special issuance section shall be surrendered to the Administrator upon request.

(5) A medical certificate rendered invalid pursuant to a withdrawal, in accordance with the special issuance section shall be surrendered to the Administrator upon request.

(f) **Statement of Demonstrated Ability (SODA)**

(1) At the discretion of the CAA Medical Assessor (MAs), a Statement of Demonstrated Ability (SODA) may be granted, instead of an Authorization, to a person whose disqualifying condition is static or non-progressive and who has been found capable of performing airman duties without endangering public and flying safety. A SODA does not expire and authorizes a designated Examiner to issue a medical certificate of a specified Class if the Examiner finds that the condition described on the SODA has not adversely changed.

(2) In granting a SODA, the CAA Medical Assessor (MAs) may consider the person's operational experience and any medical facts that may affect the ability of the person to perform airman duties including:

i. The combined effect on the person of failure to meet more than one requirement.

ii. The prognosis derived from professional consideration of all available information regarding the person.

(3) In granting a SODA under the special issuance section, the CAA specifies the Class of medical certificate authorized to be issued and may do any of the following:

i. State on the SODA, and on any medical certificate based upon it, any operational limitation needed for safety; or,

ii. Condition the continued effect of a SODA, and any second- or third-Class medical certificate based upon it, on compliance with a statement of functional limitations issued to the person in coordination with the Director of Flight Safety department.

iii. In determining whether a SODA should be granted to an applicant for a second -Class medical certificate, the CAA Medical Assessor (MAs) considers the freedom of an airman, exercising the privileges of a private pilot certificate, to accept reasonable risks to his or her person and property that are not acceptable in the exercise of commercial or airline transport pilot privileges, and, at the same time, considers the need to protect the safety of persons and property in other aircraft and on the ground.

(4) A SODA granted to a person who does not meet the applicable standards may be withdrawn, at the discretion of the CAA Medical Assessor (MAs), at any time if:

i. There is adverse change in the holder's medical condition;

ii. The holder fails to comply with a statement of functional limitations or operational limitations issued under the special issuance section.

iii. Public safety would be endangered by the holder's exercise of airman privileges;

iv. The holder fails to provide medical information reasonably needed by the CAA Medical Assessor for certification under the special issuance section.
v. The holder makes or causes to be made a statement or entry that is the basis for withdrawal of a SODA under the falsification.
vi. A person who has been granted a SODA under the special issuance section, based on a special medical flight or practical test need not take the test again during later medical examinations unless the CAA 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.

(5) If a SODA is withdrawn at any time, the holder of the SODA will be served a letter of withdrawal stating the reason for the action and the following procedures apply:
i. By not later than 60 days after the service of the letter of withdrawal, the holder of the SODA may request, in writing, that CAA Medical Assessor (MAs) provide for review of the decision to withdraw. The request for review may be accompanied by supporting medical evidence;
ii. 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
iii. A medical certificate rendered invalid pursuant to a withdrawal, in accordance with the special issuance section shall be surrendered to the Administrator upon request.

(g) **Denial of certificate**

(1) Within sixty (60) days after a final CAA Medical Assessor denial of an unrestricted airman medical certificate, an airman may petition the CAA Aeromedical Board for a review of that denial. issuance airman medical certificate.
(2) A petition for Aeromedical Board review must be submitted in writing to:
Director of Flight Safety Department
CAA Aeromedical Board
Muscat, Oman

(h) **Renewal & Revalidation Medical Certification** Issued Under the paragraph above

(1) The AME is permitted to re-issue a medical certificate for an applicant who has a medical condition that is disqualifying under current medical provisions and was extensively evaluated through Aeromedical evaluation board and was given a Medical certificate with certain limitation.
(2) The Applicant shall 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.
(3) An Examiner's decision or determination is subject to review by the CAA aeromedical section.

(i) **Withdrawal of medical certificate** issued under this paragraph

(1) If non -compliance is reported, then the Medical Certificate granted to a person who does not meet the applicable medical provisions may be withdrawn at any time if:
i. There is adverse change in the holder's medical condition;
ii. The holder fails to comply with a statement of functional limitations or operational limitations issued as a condition of certification;
iii. The holder fails to comply with the periodic follow up requirements endorsed on his/her Medical certificate as a condition of certification;
iv. Public safety would be endangered by the holder's exercise of his license privileges;
v. The holder fails to provide medical information reasonably needed by the CAA

vi. If the Medical certificate is withdrawn the following procedures apply:
   A. The holder of the Medical certificate will be served a letter of withdrawal, stating the reason for the action;
   B. By not later than sixty (60) days after the service of the letter of withdrawal, the holder of the Medical certificate may request, in writing, the CAA AMB for review of the decision to withdraw. The request for review should be accompanied by supporting medical evidence;
   C. Within sixty (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,

(j) **Renewal & Revalidation medical certification** issued under the paragraph above.
The AME is permitted to re-issue a medical certificate for an applicant who has a medical condition that is disqualifying under current medical provisions and was extensively evaluated through Aeromedical board and was given a Medical certificate with certain limitation. The Applicant should 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 CAA aeromedical section

(k) **Over Sixty (60) medical examination requirements** for all classes of CAA 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.
   (1) Initial issuance of over sixty (60) medical certificate requirements:
      i. All initial over sixty (60) medical certifications shall be done at the approved AeMC.
      ii. In addition to the usual medical assessment required by the class of medical over forty (40) years, the first medical assessment at age of sixty (60) years should include:
         A. A psychological evaluation, which shall be conducted by an approved clinical psychologist and shall follow the CAA guidelines.
         B. Medical examination by a SAME or SAME equivalent which should include alcohol screening test.
         C. Fasting blood glucose and a glucose tolerance test in cases where the initial test is abnormal.
         D. Lipid profile.
         E. Cardiac evaluation by stress ECG.
         F. Haemoglobin.
         G. Prostate test (either USG pelvis or PSA).
         H. Ophthalmology consultation

(l) **Revalidation Requirements**
Renewal of over sixty (60) medical certificates can be conducted at any recognised AeMC. The license holder will undergo, in addition to the usual medical assessment requirements:
   (1) Every six (6) months;
      i. An ECG.
      ii. Fasting blood Glucose.
      iii. Lipid profile.
      iv. Haemoglobin.
   (2) Every twelve (12) months;
      i. Ophthalmology consultation.

ii. Audiogram.
iii. Stress ECG.

(3) Alcohol screening tests as part of over sixty (60) medical certifications will include:
i. New cases of cardiac arrhythmias especially Atrial Fibrillation, Insomnia, Mood disorders, Liver function derangement, Isolated Hyper tri-glyceridemic.
ii. Newly diagnosed Hypertension,
iii. Newly diagnosed Diabetes,
iv. Suspicious Musculoskeletal injuries e.g. Rib fractures or Metacarpal fractures or Road Traffic Accidents,
v. New onset of Gout.
vi. Any elevated MCV, isolated elevated GGT, elevated ferritin and elevated CDT detected on routine testing not related with clinical findings and investigated appropriately.
vii. Referral following an aviation incident or work related issues.
viii. Third party notifications for suspected Drug or Alcohol misuse.
ix. Drink/Drug drive arrests whether local or international

GM to FCL-3.305(l)(3) Flexibility – Alcohol Screening Tools

(a) A detailed interview and system review should be conducted with emphasis on the following:
(1) Alcohol intake – amount /type/how often
(2) Smoking history
(3) Family history of substance misuse
(4) Physical dependence – withdrawal symptoms
(5) Sickness absence record – pattern of frequent, short term, last minute leave is often seen with substance use disorder
(6) Neurological issues
(7) Cardiac – arrhythmias/hypertension
(8) Gastroenterology – Gastritis/GORD
(9) Injuries- recurrent or unexplained
(10) Legal and social problems
(11) Marital disharmony
(12) Psychological problems

(b) Examination criteria:
(1) Physical dependence – signs of withdrawal (e.g. irritability, restlessness, apprehension etc.)
(2) General appearance – complexion
(3) Liver damage – spider naevi, hepatomegaly
(4) Hypertension
(5) Pancreatitis
(6) Cardiomegaly, arrhythmias

(c) Questionnaire:
(1) AUDIT (Alcohol Use Disorders Identification Test) – score of eight (8) or more suggests that there could be a problem with alcohol.
(2) It should be correlated with history and clinical examination and blood tests.

(d) Laboratory testing:
(1) **GGT (Gamma-Glutamyl Trasferase):** Is raised in about 80% of heavy drinkers, but is not a completely specific marker for harmful use of alcohol.
(2) **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.

(3) **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, plus a liver ultrasound to assess for biliary disease and a full report from a substance abuse specialist must be provided to the CAA medical assessing officer regarding the alcohol intake.

(4) **Others if indicated** (e.g. LFTs, Triglycerides, Ferritin, Liver Ultrasound, Urine EtG/ PeTH) will be considered when making the final evaluation report.

(e) Laboratory evaluation:
In the presence of a high index of suspicion, the SAME/AME will without delay, evaluate the applicant against all the assessments as per the CAA Alcohol Use Disorder Form and then the SAME/AME should refer the case to the SAME and/or CAA Medical Assessor for further evaluation and recommendation. (See Appendix 12 – Identification of Alcohol Disorders)

CAR FCL-3.310 Evaluation of Aeromedical Examination Reports by CAA.

(a) For the purpose of monitoring the criteria of medical certification, CAA Aeromedical unit has implemented an Evaluation System as a mandatory procedure to be followed by all AeMC, AME, SAME as follow:

(1) All Aeromedical examination issues related to issuance, renewal, referral, or denial of an airman certificate has to be submitted to the CAA MAs within fifteen (15) days from the date of examination for the purposes of Review, Evaluation, Monitoring and Auditing.

(2) All AME must submit electronic or hard copies of a completed and signed CAA medical Examination form with all documents and investigations required for the completion of the medical certification process as per the standards cited in the Aeromedical guidance manual within fifteen (15) days from the date of Examination, to the CAA Medical Assessor (MAs).

(3) The MAs has authority to assess any medical report submitted pursuant to the CAA standards to determine whether an applicant for the issuance or renewal of medical certificate meets the medical fitness requirements set out in the CAR FCL-3 requirements for the issuance or renewal of the medical certificate.

(4) The MAs has the rights to request further investigations or addition information pertaining to the matter in question and based on the submitted evidence the final decision of issuance will be granted, or refer the matter for further evaluation through the Aeromedical Evaluation Board.

(5) The MAs shall be responsible for the granting of implementation of limitations or the removal thereof of those limitations based on the recommendations and evaluations of the medical assessment and any other documents and investigation reports submitted by the AME.

CAR FCL-3.315 Disposition of Applications and Medical Examinations.

(a) All completed applications and medical examinations form, unless otherwise directed by the CAA, shall be transmitted electronically or hard copy to the CAA Medical Assessor (MAs) within

fifteen (15) days after completion with copy of medical certificate issued to the applicant for the purpose of monitoring, review and evaluation of the report submitted by the AME.

(b) A record of the examination is stored in the CAA Licensing Section, electronically and hard copy with limited access to people determined by the Director of FSD, however, Medical Examiners are encouraged to print a copy for their own files. While not required, the Examiner may also print a summary sheet for the applicant.

CAR FCL-3.320 Protection and Destruction of Forms.

(a) Forms are available from the CAA Flight Safety Department. Examiners are accountable for all blank CAA forms they may have printed and are cautioned to provide adequate security for such forms or certificates to ensure that they do not become available for illegal use.

(b) Examiners are responsible for destroying any existing paper forms they may still have.

NOTE: Forms should not be shared with other Examiners.

CAR FCL-3.325 License Holder Rights and Responsibilities

As the candidates applying for the CAA medical certificate have certain responsibilities they also have certain rights. Every candidate for medical examination should be aware of all these rights before being subjected to a medical examination. In all clinics designated for Aeromedical examination a copy of this information regarding the rights of the applicants should be present on the patient notice board in clear view. A copy of this information shall be readily available in the files of the AMEs to be presented to the candidates if they ask for this information.

(a) Pilots Rights Concerning Their Medical Status

(1) You have the right to expect that the AME will examine you to the best of his ability and based on CAA Regulations and requirements. The AME must be up to date of Medical knowledge and any changes in the regulations and be able to advise you about the best option(s) for you, discuss each procedure in detail and discuss the effectiveness of any medications and possible implications on health and flight safety.

(2) You have the right to expect that good management techniques will be implemented within the clinic considering, effective use of your time and to avoid your personal discomfort.

(3) The candidates have the right to be examined by any of the CAA designated Aeromedical examiners at any of the designated clinics.

(4) If a candidate is not satisfied with the decision given by an AME they have the right to apply to the CAA. The CAA after careful assessment of their case will give the decision and if found necessary may send the candidate to be examined by another AME. The expenses in such a case will be borne by the candidate.

(5) If a candidate is not satisfied with the test results of one laboratory they have the right to ask the AME to get the same test repeated. The expenses for such repeat testing will be borne by the candidate and the results of both or all tests have to be submitted to the CAA.

(6) If a candidate is not satisfied regarding their fitness concluded by an AME or the limitations imposed on him during the course of a routine medical or through a board they have the right to discuss this with the AME and ask for an explanation. If they are not satisfied they have the right to petition to the CAA.

(7) The limitations imposed on the Medical Certificate of an individual are to be lifted at the earliest possible time once there is no need for the limitation. Since a limitation

can only be removed by the CAA it is mandatory for the AME to request CAA to remove the limitation once it is no more required. If the AME fails to do it and it is noticed by the candidate, they have the right to ask the AME to request CAA for the removal of the limitation. In case of the AME not complying, the candidate has the right to directly apply to CAA to examine the matter.

(8) The candidate has the right to expect that treatment records are confidential. The candidate records are only disclosed as required by law and CAA. When the clinic releases records to others, it emphasizes that the records are confidential.

(9) The candidate has the right to privacy. The clinic staff and others caring for the candidate will protect your privacy as much as possible.

(10) The candidate has the right to express a complaint concerning their CAA Medical and receive a response without your care being compromised. Any complaints must be forwarded to the CAA Customers unit.

(b) Pilots Responsibilities Concerning their Medical Status.

(1) To treat the AME with courtesy and respect.

(2) To present accurate identifying information.

(3) To inform the Clinic of any changes to name, address, telephone number or e-mail address. It is essential that we are able to contact you in case of an emergency.

(4) To present details of illness or complaint in a direct and straight forward manner including information about your health, including past illnesses, hospital stays, and the use of medicine.

(5) To keep renewal of the CAA Medical Certificate on time.

(6) To comply with the any recommendations for regular follow up and blood tests provided by the AME.

(7) To ask questions when you do not understand questions in the CAA form.

(8) Responsible for recognizing the effect of life-style on his personal health. Pilot health depends not just on the clinic care, but in the long term, on the decisions he make in his daily life.

(9) You must not perform duties on an airplane while under the influence of any drug that may affect flight safety.

(10) you must not consume alcohol less than twelve hours (12) hours prior to the specified reporting time for flight duty or the commencement of standby; and not to Consume alcohol during the flight duty period or whilst on standby.

(11) License holders or student pilots must not exercise the privileges of their license, rating or authorization at any time when they are aware of any decrease in their medical fitness. Which might render them unable to safely exercise those privileges and they must seek the advice of the CAA or an AME when becoming aware of but not limited to:

i. Surgical operation or invasive procedure;
ii. All procedures requiring the use of a general or spinal anesthetic (no flying for at least forty-eight [48] hours);
iii. All procedures requiring local or regional anesthetic e.g. a visit to dentist requiring an injection (no flying for at least twelve [12] hours);
iv. The regular use of medication;
v. The need to regularly use correcting lenses has to check with AME to IMPLEMENT THE LIMITATION;
vi. Hospital or clinic admission for more than twelve (12) hours.

SECTION 3 – Application Process for Medical Certification

CAR FCL-3.340 General – Replacement of Medical Certificates

(a) Medical certificates that are lost or accidentally destroyed may be replaced upon proper application provided such certificates have not expired. The request should be sent to:

Medical Assessor Desk
Civil Aviation Authority
Muscat, Oman

(b) The airman's request for replacement must be accompanied by a remittance of five (5) OMR (cheque or money order) made payable to CAA. This request must include the:
   (1) Airman's full name and date of birth;
   (2) Class of certificate
   (3) Place and date of examination;
   (4) Name of the Examiner; and
   (5) Circumstances of the loss or destruction of the original certificate.

(c) The replacement certificate will be prepared in the same manner as the missing certificate and will bear the same date of examination regardless of when it is issued.

CAR FCL-3.345 Operational Limitation Codes.

(a) Operational multi-pilot limitation (OML – Class 1 only)

   (1) 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 a medical assessor of the licensing authority, that medical assessor shall assess whether the medical certificate may be issued with an OML 'valid only as or with qualified co-pilot'.

   (2) 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 class and type of aircraft, is not subject to an OML and has not attained the age of 60 years.

   (3) The OML for Class 1 medical certificates shall be initially imposed and only removed by the medical assessor of the licensing authority.

(b) Operational safety pilot limitation (OSL – Class 2 and LAPL privilege)

   (1) The holder of a medical certificate with an OSL shall only operate an aircraft if another pilot fully qualified to act as pilot-in-command on the relevant class and type of aircraft is carried on board, the aircraft is fitted with dual controls and the other pilot occupies a seat at the controls.

   (2) The OSL for Class 2 medical certificates may be imposed and removed either by the medical assessor of the licensing authority, or by an AeMC or an AME in consultation with the medical assessor of the licensing authority.

   (3) The OSL for LAPL medical certificates may be imposed and removed by the medical assessor of the licensing authority, an AeMC or an AME.

(c) Operational passenger limitation (OPL – Class 2 and LAPL privileges)

   (1) The holder of a medical certificate with an OPL shall only operate an aircraft without passengers on board.

   (2) The OPL for class 2 medical certificates may be imposed and removed either by the medical assessor of the licensing authority, or by an AeMC or an AME in consultation with the medical assessor of the licensing authority.

(3) The OPL for LAPL medical certificates may be imposed and removed by the medical assessor of the licensing authority, an AeMC or an AME.

(d) Operational pilot restriction limitation (ORL – Class 2 and LAPL privileges)

(1) The holder of a medical certificate with an ORL shall only operate an aircraft if one of the two following conditions have been met:

i. Another pilot fully qualified to act as pilot-in-command on the relevant class and type of aircraft is on board the aircraft, the aircraft is fitted with dual controls and the other pilot occupies a seat at the controls;

ii. There are no passengers on board the aircraft.

(2) The ORL for Class 2 medical certificates may be imposed and removed either by the medical assessor of the licensing authority, or by an AeMC or AME in consultation with the medical assessor of the licensing authority.

(3) The ORL for LAPL medical certificates may be imposed and removed by the medical assessor of the licensing authority, an AeMC or an AME.

(e) Special restriction as specified (SSL)

The SSL on a medical certificate shall be followed by a description of the limitation.

NOTE 1: Any other limitation may be imposed on the holder of a medical certificate by the medical assessor of the licensing authority, AeMC, AME or GMP, as applicable, if required to ensure flight safety.

Note 2: Any limitation imposed on the holder of a medical certificate shall be specified therein.

CAR FCL-3.350 Limitations to Medical Certificates

GENERAL

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

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

(c) Initial application of limitations:

(1) The limitations TML, VDL, VML, VNL and VCL, (as listed in scale), may be imposed by an SAME, AME or an AeMC for Class 1, Class 2, Class 3 and Cabin Crew medical certificates.

(2) All other limitations listed in the scale should only be imposed:

i. For Class 1 medical certificates, by the medical assessor of the licensing authority where a referral is required according to the scale

ii. For Class 2, Class 3 and Cabin Crew medical certificates, by the AME or AeMC in consultation with the medical assessor of the licensing authority where consultation is required according to scale.

iii. For LAPL medical certificates, by an AME or AeMC.

CAR FCL-3.355 Limitation Codes

The following abbreviations for limitations codes should be used on the medical certificates as applicable:

CODE	LIMITATION
TML	Limited period of validity of the medical certificate
VDL	Valid only with correction for defective distant vision
VML	Valid only with correction for defective distant, intermediate and near vision
VNL	Valid only with correction for defective near vision
CCL	Correction by means of contact lenses
VCL	Valid by day only
RXO	Specialist ophthalmological examination(s)
SIC	Specific medical examination(s)
HAL	Valid only when hearing aids are worn
APL	Valid only with approved prosthesis
AHL	Valid only with approved hand controls
OML	Valid only as, or with, a qualified co-pilot
OCL	Valid only as a qualified co-pilot
OSL	Valid only with a safety pilot and in aircraft with dual controls
OPL	Valid only without passengers
ORL	Valid only with a safety pilot if passengers are carried
OAL	Restricted to demonstrated aircraft type
SSL	Special restriction(s) as specified

The abbreviations for the limitation codes should be explained to the holder of a medical certificate as follows:

TML — Time limitation: The period of validity of the medical certificate is limited to the duration as shown on the medical certificate. This period of validity commences on the date of the medical examination. Any period of validity remaining on the previous medical certificate is no longer valid. The license holder should present him/herself for reassessment or examination when advised and should follow any medical recommendations.

VDL — Wear corrective lenses and carry a spare set of spectacles: Correction for defective distant vision: whilst exercising the privileges of the license, the license holder should wear spectacles or contact lenses that correct for defective distant vision as examined and approved by the AeMC or AME. Contact lenses may not be worn until cleared to do so by an AeMC or AME. A spare set of spectacles, approved by the AeMC or AME, should be readily available.

VML — Wear multifocal spectacles and carry a spare set of spectacles: Correction for defective distant, intermediate and near vision: whilst exercising the privileges of the license, the license holder should wear spectacles that correct for defective distant, intermediate and near vision as examined and approved by the AeMC or AME. Contact lenses or full frame spectacles, when either correct for near vision only, may not be worn.

VNL — Have available corrective spectacles and a spare set of spectacles: Correction for defective near vision: whilst exercising the privileges of the license, the license holder should have readily available spectacles that correct for defective near vision as examined and approved by the AeMC or AME. Contact lenses or full frame spectacles when either correct for near vision only may not be worn.

CCL — Wear contact lenses that correct for defective vision: Correction for defective distant vision: whilst exercising the privileges of the license, the holder of a medical certificate should wear contact

lenses that correct for defective distant vision, as examined and approved by the AeMC or AME. A spare set of similarly correcting spectacles shall be readily available for immediate use whilst exercising the privileges of the license.

HAL — Hearing aid(s): Whilst exercising the privileges of the license, the holder of the medical certificate should use hearing aid(s) that compensate for defective hearing as examined and approved by the AeMC or AME. A spare set of batteries should be available.

SIC — Specific regular medical examination(s): This limitation requires the AeMC or AME to contact the CAA before embarking upon renewal or revalidation medical assessment. It is likely to concern a medical history of which the AME should be aware prior to undertaking the assessment.

SSL — Special restrictions as specified: This limitation may be considered when an individually specified limitation, not defined in this paragraph, is appropriate to mitigate an increased level of risk to the safe exercise of the privileges of the license. The description of the SSL should be entered on the medical certificate or in a separate document to be carried with the medical certificate.

Entry of limitations

(a) Limitations VDL, VML, VNL, CCL, VCL may be imposed by an AME or an AeMC.

(b) Limitations TML, HAL, APL, OCL, OPL, OAL, OHL, SIC, RXO, OML and SSL should only be imposed by the CAA.

Removal of limitations

All limitations should only be removed by the CAA

Limitations to Class 1, Class 2 and Class 3 Medical Certificates

The AMEs in consultation with CAA may impose TML, HAL, APL, OCL, OPL, OAL, OHL, SIC, RXO, OML and SSL Limitations on the medical certificate.

SECTION 4 – Class 1 & Class 2 Medical Certification Requirements

CAR FCL-3.360 General – Class 1 & Class 2

(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 license or could render the applicant likely to become suddenly unable to exercise the privileges of the license safely.

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

CAR FCL-3.365 Cardiovascular system – Examination

(a) Examination

An applicant for or holder of a Class 1 and Class 2 medical certificate shall not possess any abnormality of the cardiovascular system, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable license(s).

   (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 forty (40), annually until age fifty (50), and at all revalidation or renewal examinations thereafter;
      ii. for a Class 2 medical certificate, for the first issue of a medical certificate, at the first examination after age forty (40) and then at the first examination after age fifty (50) and then every two (2) years after age fifty (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, at the first examination after having reached the age of forty (40), and every two (2) years thereafter and when clinically indicated.
   (5) For Class 1 medical certificate, HBA1c shall be required at the first examination after having reached the age of forty (40), and every two (2) years thereafter and when clinically indicated.
   (6) 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 license(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 paras (2) and (3) above shall be assessed by an approved CAA cardiologist before a fit assessment can be considered in consultation with the CAA.

(c) Cardiovascular system – 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.

(5) Treatment for the control of blood pressure shall be compatible with the safe exercise of the privileges of the applicable license(s)

(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;
      A. 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 para (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 cardio logical 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 (i.e. heart rate is< 50 beats/min);
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.

CAR FCL-3.370 Cardiovascular System (Class 1)

(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-4 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.

Note: The approved Cardiologist may perform any other investigation deemed necessary after individualized risk assessment.

(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 infrarenal 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 CAA

ii. Applicants with aortic stenosis require CAA 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 cardiological review should be determined by the CAA.

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 CAA.

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 postoperative 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 CAA. 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 CAA. Newer anticoagulant drugs which don't require close daily monitoring may be considered instead of warfarin.

(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 CAA following complete resolution and satisfactory cardiological evaluation which may include:

i. 2D Doppler echocardiography,
ii. exercise ECG and/or myocardial perfusion imaging/stress echocardiography and
iii. 24-hour ambulatory ECG.
iv. Coronary angiography may be indicated.
v. 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:

i. 2D Doppler echocardiography,
ii. exercise ECG and 24-hour ambulatory ECG.
iii. 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 CAA 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 ischemia.

(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 five (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 shall be agreed by the CAA. 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 license 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 ischemia or significant coronary artery stenosis.

(3) Evidence of exercise-induced myocardial ischemia should be disqualifying.

(4) After an ischemic cardiac event, including revascularization, 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 ischemic myocardial event and a complete, detailed clinical report of the ischemic event and of any operative procedures should be available to the CAA:

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 revascularizations;

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 revascularization, the following investigations should be completed (equivalent tests may be substituted):

A. an exercise ECG showing neither evidence of myocardial ischemia 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 ischemia. If there is any doubt about myocardial perfusion in other cases (infarction or bypass grafting) a perfusion scan should also be required;
D. a 64 cardiac slice CT may be used for diagnostic assistance only, as an alternative to using MPI or TMT.
E. 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 ischemia.

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

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. a 2D Doppler echocardiogram which should show no significant selective chamber
iv. enlargement or significant structural or functional abnormality, and a left ventricular ejection fraction of at least 50 %
v. further evaluation may include (equivalent tests may be substituted):
vi. 24-hour ECG recording repeated as necessary;
vii. electrophysiological study;
viii. myocardial perfusion imaging;
ix. cardiac magnetic resonance imaging (MRI);
x. coronary angiogram.
xi. any other investigation deemed necessary by the approved cardiologist after individualised risk assessment.

(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 two (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.
   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 1 and Mobitz type 2 atrio-ventricular block

Applicants with Mobitz type 1 AV block should require full cardiological evaluation and may be assessed as fit in the absence of distal conducting tissue disease. Mobitz type 2 is disqualifying; unless treated with a pacemaker. (Refer to para 9 for Pacemaker)

(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 forty (40), a fit assessment may be considered by the licensing authority. Initial applicants over age forty (40) should demonstrate a period of stability of twelve (12) months;
ii. for revalidation, a fit assessment may be considered if the applicant is under age forty (40). A multi-pilot limitation should be applied for twelve (12) months for those over age forty (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

i. 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 three (3) months after insertion and should require:
ii. no other disqualifying condition;

iii. a bipolar lead system, programmed in bipolar mode without automatic mode change of the device;
iv. that the applicant is not pacemaker dependent;
v. regular follow-up, including a pacemaker check; and
vi. a multi-pilot limitation.

(10) QT prolongation

The Prolongation 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.

CAR FCL-3.375 Cardiovascular System (Class 2)

(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 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 ischemia.

(d) Aortic aneurysm

(1) Applicants with an aneurysm of the thoracic or abdominal aorta may be assessed as fit,
(2) subject to satisfactory cardiological evaluation and regular follow-up.
(3) 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 six (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 six (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 license 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 ischemia or significant coronary artery stenosis.

(3) After an ischemic cardiac event, or revascularization, 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.

(l) A coronary angiogram

(1) A coronary angiogram obtained around the time of, or during, the ischemic myocardial event and a complete, detailed clinical report of the ischemic event and of any operative procedures should be available to the AME.

i. 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.

ii. The whole coronary vascular tree should be assessed as satisfactory and particular attention should be paid to multiple stenoses and/or multiple revascularizations.

iii. An untreated stenosis greater than 30 % in the left main or proximal left anterior descending coronary artery should not be acceptable.

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

(3) an exercise ECG showing neither evidence of myocardial ischaemia nor rhythm disturbance;

Res.1 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.

Res.2 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;

Res.3 further investigations, such as a 24-hour ECG, may be necessary to assess the risk of any significant rhythm disturbance.

(4) Periodic follow-up should include cardiological review.

i. 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.

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

(5) 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

(6) an exercise ECG.

Angina pectoris is disqualifying, whether or not it is abolished by medication.

(m) 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.

CAR FCL-3.380 Cardiovascular System (Class 1 & 2)

1.0 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.
(b) The AME should use internationally recognised calculators/charts/or score cards for the estimation of CVD.
(c) The preferred calculator for the CAA medical examination is as below; this calculator considers all the risks factors – the modifiable and non-modifiable:
HTPP://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:
    (1) The license 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 should 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), Peripheral Vascular Disease including Aneurysm, Abnormal Tests – ABIs)

(1) The license 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.

2.0 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 2 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 CAA and advise applicant not to exercise the privileges of his license until cleared to do so by CAA. This will be considered once investigations have been completed and results assessed as satisfactory to the CAA.

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 1 '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) disqualifies 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 CAA and advise the applicant not to exercise the privileges of his license until cleared to do so by CAA. This will not be considered until all investigations have been completed and results assessed as satisfactory to the CAA.

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

(a) At annual intervals:
(b) Routine aviation medical examination
(c) Approved cardiologist review
(d) Standard 24 lead ECG
(e) Doppler echocardiogram

3.0 Thromboembolic disorders

Investigations required for recertification are:

(a) Routine aviation medical examination
(b) Approved Hematologist'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
    (7) Homocysteine
    (8) Anti-Cardiolipin antibody, Lupus Anticoagulant, and other tests to exclude Anti Phospholipid syndrome
(c) Doppler ultrasound
(d) Ventilation and perfusion (V/Q) scanning if indicated
(e) Pulmonary angiography (may be required for pulmonary thromboembolism, to ensure that there is no concomitant pulmonary hypertension (>30 mmHg systolic)

Note: Occasionally the CAA may accept applicants on anticoagulation therapy provided the risk assessment conducted on the case is satisfactory in terms of the medication used and the applied mitigation strategies.

4.0 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 license 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

(a) Documentation of good blood pressure control which require 24 hour BP check at initial diagnosis and after successful treatment, without significant side effects, this should be confirmed by undertaking a repeat 24 hr BP check no sooner than 10 days after starting treatment.
(b) Documentation of an absence of end organ damage
(c) Initial evaluation should include
    (1) Lipid levels- cholesterol, LDL, HDL, Total cholesterol/ HDL ratio, Triglycerides
    (2) Random blood glucose and HBA1c and Renal Function Test,
    (3) Full blood count,
    (4) Liver function tests
    (5) Carbohydrate deficient
    (6) Urine micro albumin
    (7) Standard 12 lead ECG
    (8) Cardiac echo
    (9) Fundoscopic examination
    (10) Ambulatory blood pressure monitoring should always be employed in cases of doubt (or for diagnosis of borderline hypertension or suspected white coat hypertension)
    (11) Exclusion of secondary causes including an assessment of the risk of obstructive sleep apnea
    (12) Any pathology detected will require specialist evaluation and risk mitigation.

4.2 Subsequent review annually

(a) Lipid levels- cholesterol, LDL, HDL, Total cholesterol/ HDL ratio,
(b) Triglycerides (iii) Random blood glucose and HBA1c
(c) Renal Function test (v) Standard 12 lead ECG & Echocardiogram
(d) Urine micro albumin level
(e) Comment on evidence for hypertensive Fundoscopic findings
(f) Documentation of good blood pressure control (from clinic visit or daily review of the record from B.P measurement machine).

4.3 Aeromedical consideration

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

Note 1: 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.

Note 2: All Hypertension report should follow the specification.

5.0 Rhythm and conduction disturbances

5.1 Atrial Fibrillation investigations for recertification are:

(a) Routine aviation medical examination
(b) An approved cardiologist's assessment which should include the following tests (Thyroid function test, full blood count, liver function tests and carbohydrate deficient transferrin).
(c) Exercise ECG
(d) 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
    (2) atrial fibrillation (having presented as a single attack, or in paroxysmal form) and of significant pauses (>2.5 sec) during the daytime.
    (3) In the presence of established atrial fibrillation, the shortest RR interval should not exceed 300 ms and the longest 3.5 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.
    (4) Paroxysmal Atrial Fibrillation, as above plus the longest pause on recapture of sinus rhythm should not exceed 2.5 sec whilst awake.
    (5) Echocardiogram should 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.
    (6) Further tests may be requested if needed according to cardiologist decision.

5.1.1 Aeromedical Disposition

(a) 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 2 ('OSL') may fly with OSL restriction. Cabin crew can fly without restriction.
(b) If suppression of the attacks are incomplete, or if/when atrial fibrillation becomes established, the CAA 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 CAA, a fit assessment with a multi-pilot ('OML') limitation for Class 1 applications, or an OSL restriction for Class 2 applicants and cabin crew with an unrestricted license may be issued.
(c) If atrial fibrillation is present, the rate should be controlled (i.e. resting rate < 220 beats/min) and any QRST abnormality should be attributable to medication or heart rate only.
(d) 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.

5.1.2 Subsequent reviews every six months for a minimum of 2 years should include:

(a) Routine aviation medical examination
(b) An approved cardiologist review
(c) 24 hour ECG monitoring

5.2 Atrial Flutter

5.2.1 Investigations for recertification should include:

(a) Routine aviation medical examination.
(b) An approved cardiologist's assessment including the following blood tests (thyroid function test, full blood count, liver function tests and carbohydrate deficient transferrin).
(c) Exercise ECG to Bruce protocols.

(d) 24 hour ECG monitoring.
(e) Echocardiogram.
(f) Further tests may be requested at the discretion of the cardiologist.

5.2.2 Aeromedical Disposition

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

(a) Routine aviation medical examination.
(b) Approved cardiologist review.
(c) 24 hour ECG monitoring

5.3 Wolff-Parkinson-White (WPW) syndrome

5.3.1 Investigations required for recertification are:

(a) Routine aviation medical examination.
(b) Approved cardiologist's assessment to exclude history of arrhythmia (Tachycardia or Atrial Fibrillation).
(c) Exercise ECG to Bruce protocols and symptom limited, for at least 9 minutes and no sustained arrhythmia.
(d) Electrophysiological studies should include an isoprenaline/adrenaline infusion sufficient to increase the sinus rate by 25%, and the following criteria should be met:
    (1) HV interval < 70 ms
    (2) No inducible atrio-ventricular re-entry tachycardia an antegrade refractory period of accessory pathway >300 msec (>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.
    (4) 24 hour ECG without significant rhythm or conduction disturbance.
    (5) Echocardiogram showing a normal heart structure and normal LV and RV function.
    (6) Further tests may be requested if needed according to the cardiologist decision.

5.3.2 Aeromedical Disposition

(a) Certification with limitation may be granted, if satisfactory reports are submitted by the cardiologist.
(b) 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:

(a) Routine aviation medical examination.
(b) Approved cardiologist review.
(c) 24 hour ECG monitoring.

6.0 Post Radiofrequency ablation of WPW syndrome

6.1 Investigations required for recertification are:

(a) Routine aviation medical examination.
(b) Approved cardiologist's assessment, without a history of arrhythmia (Tachycardia or Atrial Fibrillation).

(c) 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 should be demonstrable. Withdrawal of cardio-active medication prior to the test should be considered
(d) 24 hour ECG without evidence of significant rhythm or conduction disturbance.
(e) Echocardiogram -no significant selective chamber enlargement or significant structural or functional abnormality and left ventricular ejection fraction of at least 50%.
(f) Electrophysiological studies-no evidence of accessory pathway, conduction pre or post isoprenaline/adrenaline.
(g) Further tests may be requested if needed according to cardiologist decision.

6.2 Applicants who have undergone ablation therapy should be assessed as unfit.

A fit assessment may be considered by the CAA 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 two (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. Cabin crew and Class 2 may gain unrestricted license.

7.0 Implantation of Cardiac Pacemaker

7.1 Investigations for recertification are

(a) Routine aviation medical examination (history of syncope, family history of sudden cardiac death or Brugada syndrome
(b) An approved cardiologist's assessment
(c) 24 hour ECG without significant rhythm or conduction disturbance
(d) Echocardiogram
(e) Exercise ECG-to Bruce stage VI showing no significant abnormality or evidence of myocardial ischemia.

7.2 Aeromedical disposition

(a) 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 re-certificated with Class 1 restricted license. Class 2 and Cabin Crew Class may be re-certificated with unrestricted license if they fulfil all the above requirements.
(b) The use of Anti-tachycardia pacemaker and automatic implantable system defibrillating systems are disqualifying.

CAR FCL-3.385 Respiratory System – (Class 1 & Class 2)

(a) **General**

(1) An applicant for or the holder of a Class 1, and Class 2 medical certificate shall not possess any abnormality of the respiratory system, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable license(s).
(2) A fit assessment may be considered once pulmonary function has recovered and is satisfactory.
(3) For a Class 2 medical certificate, applicants are required to undertake
(4) pulmonary function tests and chest radiology on clinical indication
(5) For Class1 medical certificate, Pulmonary function tests are required at the initial examination.
(6) A peak flow test shall be performed at first revalidation or renewal examination after age 30, every 5 years until age 40, and every 4 years thereafter and on clinical indication. Applicants with significant impairment of pulmonary function shall be assessed as unfit.

(7) Applicants with a history or established diagnosis of:
   i. asthma requiring medication;
   ii. active inflammatory disease of the respiratory system;
   iii. chronic obstructive airway disease
   iv. active sarcoidosis;
   v. pneumothorax;
   vi. sleep apnea syndrome;
   vii. major thoracic surgery;
   viii. pneumonectomy;
   ix. 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 (iv) and (vi) shall undergo satisfactory cardiological evaluation before a fit assessment can be considered.
   x. Applicants requiring major chest surgery shall be assessed as unfit for a minimum of three months following operation and 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 license(s)

(b) **Aero-medical assessment:**
(1) applicants for a Class 1 medical certificate with any of the conditions detailed in para (c)(7) below shall be referred to the licensing authority;
(2) applicants for a Class 2 medical certificate with any of the conditions detailed in para (c)(7) below shall be assessed in consultation with the licensing authority.
(3) Applicants for a Class 1 medical certificate who have undergone a total pneumonectomy shall be assessed as unfit.

(c) **Respiratory system (Class 1)**
(1) ***Examination***
   i. ***Res.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.
   ii. ***Res.2 Chest radiography –*** Posterior/anterior chest radiography may be required at initial, revalidation or renewal examinations when indicated on clinical or epidemiological grounds.

(2) ***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.

(3) ***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.

(4) ***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.

(5) ***Sarcoidosis***
   i. 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.

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

(6) ***Pneumothorax***

i. Applicants with a spontaneous pneumothorax should be assessed as unfit. A fit assessment may be considered if respiratory evaluation is satisfactory:
   A. One (1) year following full recovery from a single spontaneous pneumothorax;
   B. at revalidation, six (6) weeks following full recovery from a single spontaneous pneumothorax, with a multi-pilot limitation and modification of all risk factors;
   C. following surgical intervention in the case of a recurrent pneumothorax provided there is satisfactory recovery.

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

iii. 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.

(7) ***Thoracic surgery***

i. Applicants requiring major thoracic surgery should be assessed as unfit for a minimum of three (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 license(s).

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

(8) ***Sleep apnea syndrome/sleep disorder***

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

(d) **Respiratory system (Class 2)**

(1) ***Chest radiography***

Posterior/anterior chest radiography may be required if indicated on clinical grounds.

i. ***Chronic obstructive airways disease***
   A. Applicants with only minor impairment of pulmonary function may be assessed as fit.

ii. ***Asthma***
   A. Applicants with asthma may be assessed as fit if the asthma is considered stable
   B. with satisfactory pulmonary function tests and medication is compatible with flight safety. Systemic steroids should be disqualifying.

iii. ***Inflammatory disease.***
   A. Applicants with active inflammatory disease of the respiratory system should be assessed as unfit pending resolution of the condition.

iv. ***Sarcoidosis***
   A. 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.
   B. Applicants with cardiac sarcoid should be assessed as unfit.

v. ***Pneumothorax***

A. 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.
B. 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.

vi. ***Thoracic surgery***
A. 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 license(s).

vii. ***Sleep apnea syndrome***
B. Applicants with unsatisfactorily treated sleep apnea syndrome should be assessed as unfit.

(e) **Respiratory system (Class 1 & 2)**

(1) **Asthma**

Aeromedical disposition

i. Initial Class 1 applicants or Class 1 renewal with a new diagnosis of asthma require review by a CAA approved pulmonologist
ii. If the applicant for Class 1/2 is diagnosed to have mild asthma,
A. Is well controlled,
B. Has a normal chest examination,
C. No adverse history,
D. Has a satisfactory spirometry,
E. Has a fall in FEV1 of less than or equal to 10% on Bronchial Reactivity Test,
F. Requires inhaled corticosteroids less than 800µg day,
G. Then he may be assessed as fit Class 1 or/2

iii. If the applicant is diagnosed to have:
A. Moderately controlled asthma,
B. Has no adverse history,
C. Has satisfactory spirometry,
D. Has a fall in FEV1 of 11-16% on Bronchial reactivity test,
E. or inhaled corticosteroids equal to or greater than 800 µg day,

Then he may be assessed as fit with a restricted Class 1 license or unrestricted Class 2:

F. 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 are met. Class 2 applicant may be certified with OSL restriction.
G. 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.
H. For renewal of Class 1 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.

I. 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,
   - The FEVI is < 70% predicted value.
   - The applicant requires 3 or more medications for stabilization.
   - The applicant is using steroid in dosage equivalent to more than 20mg of prednisone per day

(2) **Disqualifying features of asthma in aviators:**

i. Severe asthma likely to reduce operational efficiency
ii. Brittle asthmatics
   A. Repeated courses of oral steroids
   B. Poor control on inhaled cortical-steroids
   C. Hospital/A&E attendance
   D. Frequent exacerbations
   E. Those requiring UNACCEPTABLE medication e.g.: Oral steroids
   F. Oral theophylline
   G. Steroid-sparing agents e.g. methotrexate, cyclosporins, azathioprine.
iii. Required Investigations:
   A. Standard Spirometry (Lung Function Tests)
   B. Bronchial Reactivity Test: either 6-minute free running test (see separate Bronchial Reactivity Test Form) or a chemical challenge with histamine/methacholine/mannitol.
iv. Acceptable Treatment:
   A. In accordance with British Thoracic Society (BTS) guidelines - The following medication is ACCEPTABLE for certification:
   B. Inhaled β2 agonists
   C. Inhaled cortico-steroids
   D. Long acting β2 agonists
   E. Leukotriene receptor antagonists
   F. Inhaled cromoglycate
v. Pulmonary Tuberculosis certification protocol:
   A. 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.
vi. Applicants for Class 1/ 2 class with active disease or undergoing any treatment should 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.
vii. Following the initial part of the therapy, if the applicant for Class 1 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.
viii. Following the initial part of the therapy, if the applicant for Class 2 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 license with close follow up with his AME and /treating physician.

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

x. 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.

xi. 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**

i. Requirement for initial certification of applicant with a history of Sarcoidosis confined to hilar lymphadenopathy
   A. Serial CXR (hilar lymphadenopathy should be re-examined and shown to be non-progressive and no evidence of pulmonary shadowing)
   B. Gas transfer factor should be stable.
   C. Pulmonary function tests should be normal
   D. 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 (MPI) may be needed if any cardiac abnormality detected.

ii. Aeromedical Disposition
   A. If all the above tests are satisfactory including no cardiac Sarcoidosis; no evidence of other organ involvement and no medication are prescribed a Class 1 OML restriction. Class 2 may be given unrestricted licenses.
   B. Cardiac Sarcoidosis is disqualifying
   C. Applicants with a diagnosis of active Sarcoidosis should be assessed as unfit.
   D. Initial applicants with a history of multi-system Sarcoidosis should be assessed as unfit.
   E. Previous history of systemic involvement (skin, bone, eye, central nervous system and lung parenchyma), the applicant will be given permanent restricted license.

iii. Subsequent review every six months for Class 1 and annual review for Class 2, for the first two years
   A. Routine aviation medical examination
   B. Approved cardiologist's assessment
   C. 24 hour ECG.
   D. Exercise ECG to Bruce protocols

iv. If satisfactory follow up for two years with no previous history of systemic involvement, the applicant for Class 1 can be given unrestricted license and continue to have annual follow up.

(f) **Spontaneous or Idiopathic Pneumothorax**

i. Assessment guidelines for initial applicants
Applicants for initial certification with a history of a single spontaneous pneumothorax may be assessed as fit provided that:
   A. One year has elapsed since full recovery after adequate treatment.
   B. Full respiratory evaluation is normal.
   C. No bullae are discovered on chest radiography, CT scans, or other medical imaging technique.
   D. The bullae have been treated by surgery and no smoking status has been confirmed.

ii. Assessment guidelines for renewal of a medical certificate:
Certificate holders who develop a spontaneous pneumothorax should be assessed as temporarily unfit until full resolution has occurred. They may be assessed as fit for certification provided that;
   A. Full re-expansion of the lung has taken place.
   B. A minimum of six weeks has elapsed since the occurrence.
   C. Full respiratory evaluation is normal.
   D. No bullae are discovered on chest radiography, CT scan, or other medical imaging technique.
   E. Restricted license for all the classes of medical certificate holders for one year from the original occurrence.
   F. All modifiable risk factors including smoking have been addressed

iii. Acceptable surgical treatment
   A. Includes thoractomy, over sewing of apical blebs, parietal pleurectomy and Video Assisted Thoracic Surgery (VATS) pleurectomy.
   B. Recertification can be undertaken six weeks after a VATS pleurectomy. For other procedures, recertification may require a longer grounding period.
   C. If 6 weeks following successful surgical treatment with a normal post-operative chest radiograph, unrestricted initial Class 1 and 2 medical certifications can be considered.

(g) **Obstructive Sleep Apnea Screening Guidelines**

(1) OSA Screening is usually indicated in:
   A. History of Excessive Daytime Sleepiness
   B. History of Snoring
   C. Witnessed apnea
   D. Resistant /uncontrolled Hypertension,
   E. Uncontrolled Diabetes,
   F. Metabolic Syndrome
   G. Obesity, BMI> 35
   H. Significant weight gain (10% increase in total body weight)
   I. A high neck Complaints circumference >40 cm
   J. of frequent nocturnal awakenings
   K. Complaints of difficulty concentrating
   L. Complaints of problems with memory
   M. Complaints of daytime sleepiness
   N. Complaints of fatigue
   O. Complaints of low mood
   P. Complaints of erectile dysfunction
   Q. Stop Bang questionnaire score of ≥3
   R. Epworth sleep score ≥10

(2) Method of Objective screening:

A. Physical examination including, vital signs (blood pressure, pulse, respiration); height, weight, and body mass index (BMI),neck circumference, ear, nose, and throat examination thyroid assessment; cardiovascular; pulmonary assessment, and psychological assessment for presence of mood disorder; if clinically indicated
B. 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 apnoea. ESC of ≥10, considered indicative of pathological
C. sleepiness and specialist referral is required.
D. 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 apnea which requires further assessment by specialist.
E. The gold standard diagnostic test is; nocturnal full polysomnographic attended by technologist diagnostic testing (type 1 Sleep Study).
F. When the diagnosis is suspected, the AME should refer the applicant for sleep 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.
G. The CAA accepts the use of CPAP (Continuous Positive Airway Pressure) as an appropriate treatment for Obstructive Sleep Apnoea. The machine should have the ability for data capture ensure compliance. Other methods of treatment including positional therapy and 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 should be addressed and treated as per CAA protocols in addition.
H. The applicant should have documentary advice to lose at least 5% of the current weight over the following year.
I. 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 four 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 CAA for Aeromedical section for reinstatement of the applicant.
J. The CAA will issue the medical certificate with OML restriction.
K. Follow up recommendations, will include 6 monthly Specialist review and 3 monthly AME review to check for compliance, weight loss and other medical conditions which require periodic review. For those managed with dental splinting, in addition to the specialist review, they would require a Dental assessment every six months to check on compliance and fitting.
L. 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 selfreported ESS of >= 10.

M. The CAA 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.
N. 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.

CAR FCL-3.390 Digestive System – General

(a) An applicant for or the holder of a Class 1 and Class 2 medical certificate 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 license(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 with recurrent dyspeptic disorders requiring medication or with pancreatitis shall be assessed as unfit.
(d) Applicants shall be free from hernia that might give rise to incapacitating symptoms.
(e) 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;
        i. 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.
(f) 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, shall be assessed as unfit for a minimum period of three 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 license(s)
(g) 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.

CAR FCL-3.395 Digestive System – (Class 1)

(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.

(3) Applicant with small multiple asymptomatic stones with functional gall-bladder may cause colic and potential incapacitation and are disqualifying until adequately treated.

(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 (including Laparoscopic, Laser or any other types of procedures)
(1) Abdominal surgery is disqualifying for a minimum of three (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 three (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 license(s).

CAR FCL-3.400 Digestive System – (Class 2)

(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 license(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 license(s).

CAR FCL-3.405 Digestive System – Disorders

(a) Applicants with recurrent dyspeptic disorders requiring medication or with pancreatitis shall be assessed as unfit pending assessment in compliance with paragraph 1 Appendix 3 to Subpart B.

(b) Applicants with asymptomatic gallstones discovered incidentally shall be assessed incompliance with paragraph 2 Appendix 3 to Subpart B.

(c) Applicants with an established diagnosis or history of chronic inflammatory bowel disease shall normally be assessed as unfit (see paragraph 3 Appendix 3 to Subpart B).

(d) Applicants shall be required to be completely free from those herniae that might give rise to incapacitating symptoms.

(e) Applicants with any sequela 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.

(f) 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, shall be assessed as unfit for a minimum period of three 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 license(s) (see paragraph 4 Appendix 3 to Subpart B).

CAR FCL-3.410 Metabolic, Nutritional and Endocrine Diseases

Metabolic and Endocrine system

(a) An applicant for or the holder of a Class 1 medical certificate 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 license(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.

CAR FCL-3.415 Metabolic and endocrine systems (Class 1)

(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 license(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 license(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 stabilized 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.

CAR FCL-3.420 Metabolic and Endocrine Systems (Class 2)

(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 license(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 license.

(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.

CAR FCL-3.425 Metabolic and Endocrine Systems (Class 1)

(a) ***Benign Pituitary Tumors - Class 1***

(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.

(2) Annual follow-up with endocrinology report and visual fields is required.

(3) Cabergoline is used for the treatment of macroprolactinomas. It is acceptable for any class of certification, providing the pilot has been stabilized on this medication

(4) for a period of not less than three months on the ground and has no adverse side-effects from the therapy.

(b) ***Obesity***

(1) General Evaluation of Obesity at Aero-medical Examination

i. Assessment of the overweight or obese person should begin with a careful history and physical examination.

ii. History should include:

A. History of medication use is an important aspect of the initial evaluation (corticosteroids, oestrogen, progesterone, testosterone or other anabolic/androgenic steroids).

B. Family and social histories are indicated (family history of obesity related disease).

C. Smoking intake

D. Alcohol consumption should be documented Activity level

E. Dietary history and patterns of eating

F. Exercise habits investigated.

G. Sleep disturbance, snoring, sleep apnoea should be assessed

H. Menstrual disturbances specifically symptoms related to polycystic ovarian syndromes Mood disorders

I. The physical examination of an obese patient should evaluate

J. They type of obesity- truncal, central etc.

K. Waist circumference

L. Hip to waist ratio

M. Body fat composition

N. Neck circumference

O. The presence of a thyroid goitre

P. Mallampti score

Q. Clinical assessment for hypothyroidism and hypercortisolism

R. Discussion of the patient's cardiac risk factors is also appropriate.

S. Review the applicant's previous medical record and performance of appropriate physical examination.

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

i. 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.

ii. Waist circumference and waist hip ratio

Waist circumference is the distance around the natural waist (just above the navel). (The tape should 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

iii. 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.

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).

(3) ***Aeromedical Disposition***

For the CAA 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

i. Obese applicant with incapacitation risk of >1%, should be grounded and require full cardiovascular assessment by an approved CAA cardiologist and should 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 should be monitored and controlled. Obese applicant with incapacitation risk under 1% still require documented advice on weight management

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

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

iv. If the a Class 1 candidate with BMI of 35 or more fails to lose weight over 6 months period, or even gain more weight, the CAA may recommend further assessments with particular attention to his competency in managing emergency situations and evacuation. Multi-pilot (Class 1 'OML') limitation may be required.

v. 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.

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

(4) ***Treatment that affect Medical certification***

i. ***Medication***

Orlistat or other medications which reduce the absorption of dietary fat, when combined with a change in lifestyle, can be used to treat obesity in individuals with a BMI in excess of 30 or in excess of 28 if other risk factors such as hypertension, diabetes or high cholesterol are present. License holders elected to use these medications should inform the AME about its use and should be grounded for at least two weeks to ensure absence of adverse effects from the medication. Side effects might include flatulence, oily or leaky stools and abdominal pain and bloating, headaches and anxiety.

Note: Appetite suppressants are disqualifying for medical certification, and they are not recommended for the treatment of obesity.

ii. ***Surgery***

Bariatric surgery promotes weight loss by altering the anatomy of digestive system and limiting the amount of food that can be eaten/digested e.g. gastric bypass, Sleeve Gastrectomy or gastric banding. It is a major procedure that is usually considered as an option if an individual's BMI is 40 or more, or between 35 and 40 if other risk factors that could be improved by a reduction in weight are present. Other criteria also need to be fulfilled and this option should be discussed with the Specialists. If it is deemed an acceptable for treatment for the license holder, he/she should notify the AME to suspend him/her for a period of up to 3 months post-surgery which will be dependent upon the type of procedure performed and the recovery. Endoscopic procedures will significantly reduce this period. Detailed reports will be required to confirm that the license holder made a full recovery from the procedure ,are not experiencing any incapacitating side effects and a final assessment with the AME will be required before returning the license holder to his aviation duties again. And other treatment or procedure that the license holder might be considering must be discussed with the AME.

(c) ***Thyroid disorders***

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

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.

(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 CAA. Any changes in management, including medication changes, should be notified to the AME. Any changes in management, including medication changes, should be notified to the AME.

(2) ***Hyperthyroidis****m*

A hyperthyroid pilot is unfit for flying and should remain so until a stable euthyroid state has been attained. A fit assessment may be considered by the CAA when the license holder is clinically and biochemically euthyroid. The individual should 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) ***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.

(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.

(d) ***Diabetes Mellitus***

(1) Diagnostic criteria

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

(2) Classification

Type	Description
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 Auto-immune 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.*

(3) Complications

i. 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.
ii. Microangiopathy is associated with progressive retinal and renal damage.
iii. Neuropathy which is probably related to the long term effects of the metabolic abnormality and can involve motor, sensory and autonomic functions.
iv. Cataracts are more common in older patients with diabetes.
v. Color 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) Management of Diabetes Mellitus

i. 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.

ii. Certification

A. 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.
B. The AME should inform the license holders about all possible outcome of this condition and should 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.
C. 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.
D. Insulin use is disqualifying from all the classes of medical.
E. 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 Alphaglucosidase inhibitors and Sitagliptin).

iii. Anti diabetic medications:

Medication	Class 1	Class 2 and Cabin crew Class
Biguanides	*Yes, (with SIC & OML limitation, if applicable)*	*Yes, (with SIC & OSL limitation, if applicable)*
Alpha-glucosidase Inhibitors	*Yes, (with SIC & OML limitation, if applicable) if used as single therapy*	*Yes, (with SIC& OSL limitations, if applicable) 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 SIC & OSL limitation,s if applicable*
Repaglinide	*Not acceptable*	*Not acceptable*
Sitagliptin	*Acceptable if unable to tolerate Metformin /or combination with Metformin on a case by case basis*	*Acceptable with SIC & OSL, if applicable*

iv. Initial assessment

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

A. Careful examination to exclude common complications of diabetes including neuropathy
B. HbA1c should be <7 %
C. Blood Glucose should be reasonably controlled
D. BMI level, and determine the desired goal (BMI of< 25 is the target)
E. Diabetes Mellitus should be treated as high risk for cardiovascular disease and all modifiable risk factors should be managed aggressively.
F. Blood tests including HBA1c, renal function, liver function and lipids.
G. A CAA extended eye examination.
H. ECG at the time of diagnosis
I. An approved cardiologist consultation
J. Urine microalbuminuria
   - If single medication is required to control blood glucose level. The license holder is grounded and: a 30 day ground trial to ensure good glycaemic control, minimal side effects & HBA1c < 7%
   - If single medication fails to adequately control blood glucose levels , and addition of other agent is required; then the license holder is grounded , and another 30 day ground trial to ensure no hypoglycaemic episodes, no additional other side-effects, good glycaemic control, or HbA1c <7%
   - To provide a complete record of blood glucose monitoring to AME - random daily record for a minimum 30 days ideally via a data card.

Note: Occasionally the CAA may reinstate a pilot whom HBA1C is > 7% if a significant fall in the level of HBA1C is documented from the date of diagnosis; however, his subsequent follow up HBA1C should remain under satisfactory control.

v. Follow up for cases of Type 2 diabetes mellitus

A. Periodic review with an AME and careful examination to exclude common complications of diabetes.
B. Blood glucose and HBA1c less than 7.5% undertaken at three monthly to check the control of diabetes.
C. Regular BMI and body fat monitoring and a comment on reduction progress.
D. Periodic tests including renal function, blood lipids and urinary tests for detecting early renal damage (microalbuminuria)
E. Annual CAA approved ophthalmologist review. Those with previous documented colour deficiency require a CAD test prior to relicensing and then annually thereafter as part of the extended eye examination.
F. CNS and foot examination for evidence of neuropathy; either by neurologist, family physician or AME.
G. Approved Cardiology review.

Note: The CAA may on individual cases permit the use of a medications not listed above for Diabetes treatment provided the risk assessment performed on the case is satisfactory.

Note: All report for Diabetic applicant should be compiled through the specified form.

CAR FCL-3.430 Metabolic and endocrine systems (Class 2)

(a) 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 Alphaglucosidase inhibitors and Sitagliptin).

CAR FCL-3.435 Haematology – General

Combination of agents may be considered on a case by case basis, provided there is no evidence of hypoglycaemia.

(a) An applicant for or the holder of a Class 1and Class 2 medical certificate shall not possess any hematological disease which is likely to interfere with the safe exercise of the privileges of the applicable license(s).
(b) Haemoglobin shall be tested at every medical examination and cases of significant anaemia with a haematocrit below 32% shall be assessed as unfit.
(c) Applicants with sickle cell trait with Hb-A Level < 40% shall be assessed as unfit.
(d) Applicants with significant localized and generalized enlargement of the lymphatic glands and diseases of the blood shall be assessed as unfit.
(e) Applicants with acute leukemia shall be assessed as unfit. After established remission, certification may be considered by the CAA.
(f) Initial applicants with chronic leukemia shall be assessed as unfit.
(g) Applicants with significant enlargement of the spleen shall be assessed as unfit.
(h) Applicants with significant polycythaemia shall be assessed as unfit
(i) Applicants with a coagulation defect shall be assessed as unfit.
(j) Coagulation, haemorragic or thrombotic disorder shall be assessed as unfit.
(k) Aero-medical assessment:
    (1) applicants for a Class 1 medical certificate with one of the conditions specified in above shall be referred to the licensing authority;
    (2) fitness of Class 2 applicants with one of the conditions specified in above shall be assessed in consultation with the licensing authority.

CAR FCL-3.440 Haematology (Class 1)

(a) Abnormal haemoglobin
Applicants with abnormal hemoglobin shall 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. 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. Applicant with chronic anaemia (e.g. Thalassemia trait) may be assessed as fit.
    (2) Anaemia which is unamenable to treatment is disqualifying.
(c) Polycythaemia
Applicants with polycythaemia shall be assessed as unfit and require investigation.

(1) A fit assessment with a multi-pilot limitation may be considered if the condition is stable and no associated pathology is demonstrated.

(d) Haemoglobinopathy
Applicants with a haemoglobinopathy shall be assessed as unfit.
(1) A fit assessment may be considered where minor thalassaemia; or other
(2) haemoglobinopathy is diagnosed without a history of crises and where full functional capability is demonstrated. The haemoglobin level should be satisfactory.
(3) Applicants with sickle cell disease should be assessed as unfit.

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

(f) Haemorrhagic disorders.
Applicants with a hemorrhagic disorder require investigation.
(1) A fit assessment with a multi-pilot limitation may be considered if there is no history of significant bleeding.

(g) Thrombo-embolic disorders.
Applicants with a thrombotic disorder require investigation:
(1) 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.
(1) Applicants with significant localised and generalised enlargement of the lymphatic glands and diseases of the blood should be assessed as unfit and require investigation.
(2) 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) Leukemia
(1) Applicants with acute leukemia shall be assessed as unfit.
i. Once in established remission, applicants may be assessed as fit.
(2) Applicants with chronic leukemia shall be assessed as unfit.
i. After a period of demonstrated stability, a fit assessment may be considered.
(3) Applicants with a history of leukemia 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.
(1) 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.

CAR-FCL-3.445 Haematology (Class 2)

(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 license(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) Leukemia
(1) Applicants with acute leukemia may be assessed as fit once in established remission.
(2) Applicants with chronic leukemia 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
(4) system involvement and no continuing side effects from treatment of flight safety importance. Haemoglobin and platelet levels should be satisfactory. Regular followup 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.

CAR FCL-3.450 Haematology (Class 1 & 2)

(a) Coagulation/Haemorrhagic disorders
(1) Thrombocytopaenia
Applicants with a diagnosis of thrombocytopenia should be assessed as unfit. Medical certification is considered subject to a hematologist report acceptable to the Authority Medical Assessor. Platelet counts below 75 x 10¬9/l should be assessed as unfit.
(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.
(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 Assessor confirming that the phenotype is mild, that there is no history of significant bleeding and that therapy is not required.

(b) Thrombo-embolic disorders

(1) Deep Venous Thrombosis (DVT), Pulmonary Embolism (PE) and use of Warfarin
Class 1 OML certification are possible provided that,

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

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

CAR FCL-3.455 Urinary system

(a) An applicant for or the holder of a Class 1and Class 2 medical certificate shall not possess any functional or structural disease of the urinary system or its adnexa which is likely to interfere with the safe exercise of the privileges of the applicable license(s).

(b) Applicants presenting any signs of organic disease of the kidney shall be assessed as unfit. Urinalysis shall form part of every medical examination. The urine shall contain no abnormal element considered to be of pathological significance. Particular attention shall be paid to disease affecting the urinary passages and the genital organs.

(c) Applicants presenting with urinary calculi shall be assessed as unfit.

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

(e) An applicant with compensated nephrectomy without hypertension or uraemia may be considered fit.

(f) Applicants who have undergone a major surgical operation in the urinary tract or the urinary apparatus involving a total or partial assessed excision or a diversion of any of its organs shall be assessed unfit for a minimum period of three months and until such time as the effects of the operation are no longer likely to cause incapacity in flight.

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

(2) fitness of Class 2 applicants with one of the conditions specified in above shall be assessed in consultation with the licensing authority.

CAR FCL-3.460 Genitourinary system (Class 1)

(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.
(6) Stent placement and stone removal, a fit assessment may be considered by the CAA Mas to resume duties after presentation of the medical report from the treating specialist.

(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 immunosuppressive 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.

CAR FCL-3.465 Genitourinary system (Class 2)

(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.

CAR FCL-3.470 Genitourinary system (Class 1 & 2)

(a) Urine Testing

(1) Urine testing

i. 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.

ii. 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.

(2) Haematuria

Significant haematuria is defined as:

i. Any single episode of visible haematuria.

ii. Any single episode of symptomatic non visible haematuria (in the absence of a urinary tract infection (UTI) or other transient cause).

iii. 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.

(3) Proteinuria

i. 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.

ii. 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.

(b) 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.

(c) 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.

(d) Urinary Calculi

(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 Authority may consider a fit assessment with a restricted license for all the classes of certification for one year. After this period of documented freedom from symptoms and a 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 CAA for all the classes with no evidence of renal calculi otherwise a restricted license 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.

(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 1.

(3) Recurrent renal colic

Recurrent renal colic when associated with calculi should 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 should be required by the CAA 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 licenses and regular urologist assessment and follow up.

(4) Previous history of uretric colic more than seven 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.

(e) Renal Transplant
Applicants who have undergone a renal transplant are assessed as unfit. Medical certification can be considered twelve (12) months post-transplant. Renal function should be stable and blood pressure should be within normal limits. The use of approved anti-hypertensive drugs is permitted. Any steroid dosage should be below 10mg/day. Levels of anti-rejection drugs should be within therapeutic range to minimise side effects. Cardiovascular risk should 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.

(f) 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. CAD test should be done whilst on medication to ensure that the applicant is safe in accordance with the flying color vision standards before being released for flying.

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:

(1) 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.

(6) Apomorphine – Twelve (12) hours should elapse after use before flying/controlling.

CAR FCL-3.475 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 license held.

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

CAR FCL-3.480 Infectious disease – General

(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.

CAR FCL-3.485 Infectious disease (Class 1 & 2)

(a) **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 CAA 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) **Hepatitis B:**
i. Acute hepatitis B is disqualifying. Certification may be considered upon full recovery (viral clearance).
ii. Chronic hepatitis B – Certification may be considered in pilots in the 'immune tolerant' or 'inactive HBV carrier state'
A. 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.

B. Requirement for treatment is disqualifying

(2) **Hepatitis C**
i. Applicant with HCV-antibody positive and HCV-PCR is considered unfit for certification recertification may be considered for Class 1 with restricted medical certificate.
ii. 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.

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

CAR FCL-3.490 Gynaecology and obstetrics (Class 1)

(See Appendix 7)

(a) An applicant for or the holder of a Class 1 medical certificate 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 license(s).

(b) An applicant with a history of severe menstrual disturbances unamenable to treatment shall be assessed as unfit.

(c) Pregnancy

(1) In the case of pregnancy, if the AeMC or AME considers that the license 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) A pregnant license holder may be assessed as fit with a multi-pilot limitation during the first twenty-six (26) weeks of gestation, following review of the obstetric evaluation by the AeMC or AME who should inform the licensing authority.

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

(d) An applicant who has undergone a major gynecological operation shall be assessed as unfit for a minimum period of three months and until such time as the effects of the operation are not likely to interfere with the safe exercise of the privileges of the license(s)

CAR FCL-3.495 Obstetrics and gynecology (Class 2)

(See Appendix 7)

(a) An applicant for or the holder of a Class 2 medical certificate shall not possess any functional or structural obstetric or gynecological condition which is likely to interfere with the safe exercise of the privileges of the applicable license(s).

(b) An applicant who has undergone a major gynecological 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 license(s).

(c) Pregnancy

(1) A pregnant license holder may be assessed as fit during the first 26 weeks of gestation following satisfactory obstetric evaluation.

(2) License privileges may be resumed upon satisfactory confirmation of full recovery following confinement or termination of pregnancy

CAR FCL-3.500 Musculoskeletal requirements

(See Appendix 8)

(a) An applicant for or holder of a Class 1 or Class 2 medical certificate shall not possess any abnormality of the bones, joints, muscles and tendons, congenital or acquired which is likely to interfere with the safe exercise of the privileges of the applicable license(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 license.
(c) An applicant shall have satisfactory functional use of the musculoskeletal system to enable the safe exercise of the privileges of the applicable license(s). Fitness of the applicants shall be assessed in consultation with the licensing authority.

CAR FCL-3.505 Musculoskeletal system (Class 1)

(See Appendix 8)

(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 fitness by flight simulator testing. Particular attention should be paid to emergency procedures and evacuation. A limitation to specified aircraft type(s) may be required

CAR FCL-3.510 Musculoskeletal systems (Class 2)

(See Appendix 8)

(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.

CAR FCL-3.515 Psychiatric requirements

(a) An applicant for or holder of a Class 1 medical and Class 2 certificate 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 license(s),
(b) Applicants with a mental or behavioral 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 shall undergo satisfactory psychiatric evaluation before a fit assessment can be made.
   (1) psychotic symptoms,
   (2) neurotic disorder;
   (3) mood disorders,
   (4) personality disorders, especially if severe enough to have resulted in overt acts,
   (5) mental abnormality and neurosis,
   (6) alcoholism,
   (7) use or abuse of psychotropic drugs or other substances with or without dependency.

(d) Applicants with a history of a single or repeated act 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.

CAR FCL-3.520 Psychiatry (Class 1)

(See Appendix 9)

(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 behavioral 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 psychoactive substance(s) use or misuse***
(1) Mental or behavioral 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 and suicide attempt***
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.
(1) ***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.
(2) ***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.

(j) ***Schizophrenia, schizotypal or delusional disorder***
Applicants with an established history or clinical diagnosis of schizophrenia, schizotypal or delusional disorder may only be considered for a fit assessment if the medical assessor of the licensing authority concludes that the original diagnosis was inappropriate or inaccurate as confirmed by psychiatric evaluation, or, in the case of a single episode of delirium of which the cause was clear, provided that the applicant has suffered no permanent mental impairment.

CAR FCL-3.525 Psychiatry (Class 1 & 2)

(See Appendix 9)

(a) ***Assessment***
The assessment should take into consideration if the indication for the treatment, side effects and addiction risks of such treatment and the characteristics of the psychiatric disorder are compatible with flight safety.

(b) ***Specialist opinion and advice***
(1) In case a specialist evaluation is needed, following the evaluation, the specialist should submit a written report to the AME, AeMC or medical assessor of the licensing authority as appropriate, detailing their opinion and recommendation.
(2) Psychiatric evaluations should be conducted by a qualified CAA Approved psychiatrist having adequate knowledge and experience in aviation medicine.
(3) The psychological opinion and advice should be based on a clinical psychological assessment conducted by a suitably qualified and accredited clinical psychologist with expertise and experience in aviation psychology.

(4) The psychological evaluation may include a collection of biographical data, the administration of aptitude as well as personality tests and clinical interview.

CAR FCL-3.530 Psychiatry (Class 1 & 2)

(See Appendix 9

A. Major Depression

(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 should be initiated by a CAA approved Psychiatrist.

(b) Baseline Clinical Psychologist assessment should be done by CAA 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 CAA 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 Behavioral 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 should be assessed on individual basis.

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

i. Check for potential side effects
ii. Improvement in the condition
iii. 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 standardized 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 CAA:

i. Initial psychiatrist reports with all details of the case as per CAA 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 stabilization of the condition.
vi. simulator test result

(j) The CAA 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 should ground himself if he feels a worsening of his condition or cognitive functioning.

(l) After returning to flying duties and being treated, the pilot should be evaluated every month by CAA Approved Psychiatrist, Psychologist or Senior AME. The

review should include Hamilton score if depressed, if the score is above 8, the pilot should be grounded for further assessment and treatment.

(m) The AME should 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 should immediately be evaluated by Psychiatrist.

(n) Any decline in cognitive function detected on routine flying (by Colleague or Supervisor) or during Simulator check should 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 CAA 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 CAA 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 CAA for their consideration. Second Psychiatrist evaluation may be required by the CAA.

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

(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.

(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
(g) Medical History
(h) Social history
(i) Career history
(j) Forensic history
(k) Mental status examination
(l) Diagnosis
(m) Treatment plan
(n) Follow up requirements
(o) Prognosis
(p) Fitness assessment requirement

(4) Psychiatric report specification

(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.

B. Neurotic, stress-related and somatoform disorders

(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 CAA Medical Assessor may grant aeromedical certification where an applicant's specific phobia is unrelated to the aviation environment or unlikely to affect aviation adversely.

(2) ***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 CAA Medical Assessor will not grant aeromedical certification to an individual who suffers non-specific or unpredictable panic attacks.

(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.

(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 flaunting.

(5) ***Reaction to severe stress and adjustment disorders***

(a) ***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 CAA 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.

(b) ***Post traumatic stress disorder (PTSD)***

i. 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.

ii. 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.

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

iv. 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.

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

vi. 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 CAA Medical Assessor 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.

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

viii. The CAA Medical Assessor highlights the pilot should 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 should be every 6 months with a CAA Approved specialised psychiatrist reporting the pilot's mental health status and progress.

(c) ***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. The CAA Medical Assessor will not usually grant aeromedical certification to individual who suffers from acute symptoms of adjustment disorders.

(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.

(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 feeling of their incapacity to persuade the physicians about the somatic nature of their illness and the need of a new investigation.

Somatoform Disorders include:

(a) ***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.

(b) ***Hypochondriacal 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.

(c) 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 diarrhea, 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.

(d) ***Aeromedical Assessment of Neurosis and Somatoform Disorders***

i. 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.)

ii. 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.

1) During the acute phase of any neurotic illness the presence of anxiety or depression is likely to interfere with decision making and the individual should be assessed as temporarily unfit to follow his profession until there has been full recovery.

2) 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 should 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 CAA Medical Assessor to return to flying duties, when satisfactory control is demonstrated by the use of medication.
3) A single episode which clears completely in less than three months should be considered compatible with a return to flying.
4) A protracted illness with poor response to treatment or characterised by relapses will normally lead to permanent unfit assessment.
5) Personality disorders are always troublesome During the acute phase of any neurotic illness the presence of anxiety or depression is likely to interfere with decision making and the individual should be assessed as temporarily unfit to follow his profession until there has been full recovery.
6) 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 should 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 CAA Medical Assessor to return to flying duties, when satisfactory control is demonstrated by the use of medication.
7) A single episode which clears completely in less than three months should be considered compatible with a return to flying.
8) A protracted illness with poor response to treatment or characterised by relapses will normally lead to permanent unfit assessment.
9) Personality disorders are always and are more likely to cause administrative or operational problems rather than frank medical problems. They imply lasting, deeply ingrained, inflexible behavior 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.

iii. ***A number of specific personality disorders*** are identified including:
1) Anti-social personality disorder (impulsive, aggressive, manipulative),
2) Borderline personality disorder (impulsive, self-destructive, unstable),

3) Dependent personality disorder (dependent, submissive, clinging);
4) Histrionic personality disorder (emotional, dramatic, theatrical);
5) Narcissistic personality disorder (boastful, egotistical, superiority complex);
6) Obsessive – compulsive personality disorder (perfectionist, rigid, controlling);
7) Paranoid personality disorder (suspicious, distrustful);
8) Schizoid personality disorder (socially distant, detached), etc.

While personality traits 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.

C. Alcohol screening tests

(see Appendix 12 for forms to cover this section of assessment)

(1) ***Indications***

(a) Screening as part of over 60 medical certifications.
(b) As part of the medical evaluation determined by the AME during the regulatory medical examination.
(c) New cases of cardiac arrhythmias especially Atrial Fibrillation, Insomnia, Mood disorders, Liver function derangement, Isolated Hyper triglyceridemic, newly diagnosed Hypertension, newly diagnosed Diabetes, Suspicious Musculoskeletal injuries e.g. Rib fractures or Metacarpal fractures or Road Traffic Accidents, New onset of Gout.
(d) Any elevated MCV, isolated elevated GGT, elevated ferritin and elevated CDT detected on routine testing not related with clinical findings and investigated appropriately.
(e) Referral following an aviation incident or work-related issues.
(f) 3rd party notifications for suspected Drug or Alcohol misuse.
(g) Drink/Drug drive arrests whether local or international

(2) ***Screening tools:***

(a) A detailed interview and system review should be conducted with emphasis on the following:
i. Alcohol intake – amount /type/how often
ii. Smoking history
iii. Family history of substance misuse
iv. Physical dependence – withdrawal symptoms
v. Sickness absence record-pattern of frequent, short term, last minute leave is often seen with substance-use disorder Neurological issues
vi. Cardiac – arrhythmias/hypertension
vii. Gastroenterology – Gastritis/GORD
viii. Injuries- recurrent or unexplained
ix. Legal and social problems

x. Marital disharmony
xi. Psychological problems

(b) ***Examination***
i. Physical dependence – signs of withdrawal (e.g. irritability, restlessness, apprehension …)
ii. General appearance- complexion
iii. Liver damage – spider naevi, hepatomegaly
iv. Hypertension
v. Pancreatitis
vi. Cardiomegaly, arrhythmias

(c) ***Questionnaire***
i. AUDIT (Alcohol Use Disorders Identification Test) – score of 8 or more suggests that there could be a problem with alcohol.
ii. It should be correlated with history and clinical examination and blood tests.

(d) ***Laboratory testing***
i. GGT (Gamma-Glutamyl Trasferase): Is raised in about 80% of heavy drinkers, but is not a completely specific marker for harmful use of alcohol.
ii. 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.
iii. 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 CAA regarding alcohol intake
iv. Others if indicated (LFTs, Triglycerides, Ferritin, Liver Ultrasound, Urine EtG/ PeTH)

(e) In the presence of high index of suspicion, the AME will without delay evaluate the applicant to all the assessments as per CAA Alcohol Use Disorder Form and then the AME should refer the case to the SAME and/or CAA Medical Assessor for further evaluation recommendation.

(f) The CAA/or the SAME will take the following actions:
i. Review the case:
- In the case SAME is reviewing the form; he/she should send all reports to the CAA without delay with a further recommended management strategy if the case is deemed low risk.
- Temporary suspends the applicant's license if deemed a moderate or high risk.
- Refer the license holder to trained, experienced Psychologist, acceptable to the CAA for further assessments.
- Refer the license holder for Cog Screen.

- Refer the license holder to a trained, experienced Substance Abuse Specialist acceptable to the CAA if there are any areas for concern.

(g) Upon confirming the diagnosis of Alcohol Use Disorder as per DSM V and treatment requirements to FAA standards the applicant will be required to undertake the necessary steps. Upon completion of the treatment plan, the SAME will send to the CAA Medical Assessor a comprehensive report including summaries from Psychologist, Substance Abuse Specialist and Cognitive SIM check report recommending the re-instatement and follow up programme.

(h) If no diagnosis is made, the SAME will forward a recommendation including follow up reviews and testing if needed to the CAA.

(i) The CAA will convene an Aeromedical Review board.

Note 1: Re-instatement of suspended cases will not be considered without full assessment by SAME, Psychologist and Substance Abuse specialist.

Note 2: Grounding period for license holders with suspected and/or diagnosed Alcohol Use Disorder depend on the individual assessment of the case and circumstances.

Note 3: This protocol applied only to Non-dependent Alcohol Use Disorder as per DSM–V criteria.

Note 4: For the purpose of this protocol, The CAA will only accept a report from an experienced Psychologist and or HIMS (Human Intervention Motivation Study) trained.

Note 5: For the purpose of the diagnosis, The CAA will only accept reports from an experienced Substance Abuse Specialist who is HIMS trained (Human Intervention Motivation Study) and preferably has some prior experience with aircrews.

Note 6: The CAA highly recommend that any correspondence with the license holder with this medical condition to be recorded officially especially the requirements to refrain from alcohol use totally.

(3) ***Protocol reinstatement and follow up***

(a) Following treatment, the applicant will be required to remain abstinent from all alcohol or any other mood altering substances (especially sleep medications and analgesics with an addictive potential) thereafter.

(b) All additional medications or substances thereafter to be discussed and approved by the SAME or designate in writing.

(c) Accidental or inadvertent intake of alcohol or unauthorized substances shall not be accepted as an acceptable explanation thereafter.

(d) Upon receiving a satisfactory medical Review board recommendation, the following limitations will be required for licensing:

i. OML restriction for Class 1 license holder.

ii. Abstinence from all alcohol.

iii. Monitoring, preferably by an employee assistance professional or designated peer.

iv. *Periodic re-evaluation by a Substance Abuse Specialist.* This shall be determined on an individual basis by the treatment facility and treating SAME and the medical Review board.

v. *Support groups.* Involvement in a group such as Alcoholics Anonymous (AA) (3 meetings per week) 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.

vi. Monthly Senior AME contact.

vii. Monthly Blood tests (PeTH (CDT), MCV, GGT) Urine, breath and or other tests as deemed appropriate by the SAME or specialists at any future point.

viii. *A minimum of fifteen unannounced breath alcohol testing per year.* This may include the non-work related testing. Attention is required to randomly execute the testing in the pilots who are doing limited number of flights per year.

(e) Removal of OML

i. Minimum three years post reinstated license; the applicant may apply for a removal of OML.

ii. 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 CAA Medical Assessor (Mas).

iii. The CAA Medical Assessor will convene an aeromedical board.

iv. The MAs will evaluate all the reports and if in the documentation of appropriate treatment and abstinence is acceptable the MAs will lift the OML restriction and any other requirements as appropriate to the case.

Note 1: If relapse occurs at any time during the follow up program, the pilot will be removed permanently from flying duties.

Note 2: Failure to meet any of the mitigation strategies enforced with the reinstatement will lead to permanent suspension. The SAME should immediately advise the CAA about this failure.

Note 3: CDT has proven successful in monitoring drinking status in patients under alcohol treatment. Rather than using a cut-off point for monitoring abstinence and relapses, a % change in raw CDT value from a baseline measurement is the most sensitive and appropriate method. Individuals who remain abstinent experience an average 30% decrease in CDT value from baseline; whereas, those who relapse show a 10% increase in their CDT concentrations. CDT seems to be better than traditional markers at monitoring patients for increased alcohol consumption or progress towards abstinence. It may therefore be used in some cases where PeTH testing proves challenging.

Note 4: All Substance Abuse Specialist report should follow the specification.

D. DSH (deliberate self-harm)

(1) 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.

(2) There are differences between those who successfully complete the act of suicide and those who survive after overdose or deliberate self-harm.

(3) 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 the cases. In the younger age groups personality disorders feature largely, often associated with alcohol or drug abuse, and adverse social factors.

(4) Deliberate self-harm is usually an impulsive act, committed in such a way as to invite discovery.

(5) Over dosage with minor tranquillizers, 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) a history of direct statement of intent:

(b) a history of previous self-harm;

(c) a previous or current depressive disorder, particularly those in the early phase of recovery;
(d) alcohol dependence, particularly where physical complications or severe social damage exists;
(e) Drug dependence;
(f) Social deprivation or loneliness.

(6) 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.

(7) 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.

E. Use of medication, psychoactive drugs or other treatment

(1) ***The use of Medication (prescribed or non-prescribed)***

(a) Accidents and incidents have occurred as a result of pilots flying while medically unfit and the majority have been associated with what have been considered relatively trivial ailments. Although the symptoms of colds, sore throats, diarrhea and other abdominal upsets may cause little or no problem whilst on the ground they become dangerous in the flying environment by distracting the pilot and degrading performance in the various flying tasks. The in-flight environment may also increase the severity of symptoms which may be minor while on the ground. The effects may be compounded by the side effects of the medication prescribed or bought over the counter for the treatment of such ailments. The following are some widely used medicines which are normally considered incompatible with flying.

(b) *Antibiotics such as the various Penicillins, Tetracyclines* and others may have short term or delayed side effects which can affect pilot performance. More significantly, however, their use usually indicates that an infection is present and thus the effects of this infection will normally mean that a pilot is not fit to fly.

(c) *Tranquillisers, anti-depressants and sedatives.* Inability to react due to the use of this group of medicines has been a contributory cause to fatal aircraft accidents. Again, as with antibiotics, the underlying condition for which these medications have been prescribed will almost certainly mean that a pilot's mental state is not compatible with the flying task.

(d) *Stimulants such as caffeine, amphetamines etc. (often known as "pep" pills)* used to maintain wakefulness or suppress appetite are often habit forming. Susceptibility to different stimulants varies from one individual to another, and all may cause dangerous over confidence. Over dosage causes headaches, dizziness and mental disturbance. The use of "pep" pills while flying is not permitted.

(e) *Anti-histamines can cause drowsiness.* They are widely used in "cold cures" and in treatment of hay-fever, asthma and allergic rashes. They may be in tablet form or a constituent of nose drops or sprays. In many cases the condition itself may preclude flying, so that, if treatment is necessary, advice from the CAA MAs, or an AME should be sought so that modern drugs, which do not degrade human performance, can be prescribed.

(f) Certain drugs used to treat high blood pressure can cause a change in the normal cardiovascular reflexes and impair intellectual performance, both of

which can seriously affect flight safety. If the level of blood pressure is such that drug therapy is required, the pilot should be temporarily grounded and monitored for any side effects. Any treatment instituted should be discussed with the CAA MAs, or an AME and a simulator assessment or line check may be appropriate before return to flying.

(g) Following local, general, dental and other anaesthetics, a period of time should elapse before return to flying. The period will vary considerably from individual to individual, but a pilot should not fly for at least 12 hours after a local anaesthetic and for 48 hours after a general or spinal anaesthetic.

(h) *The more potent analgesics* may produce a significant decrement in human performance.

If such potent analgesics are required, the pain for which they are taken generally indicates a condition which precludes flying. Many preparations are now marketed containing a combination of medicines. It is essential therefore that if there is any new medication or dosage, however slight, the effect should be observed by the pilot on the ground prior to flying. Although the above are the commonest medicines which adversely affect pilot performance, it should be noted that many other forms of medication, although not normally affecting pilot performance, may do so in individuals who are "oversensitive" to a particular preparation.

NOTE: Individuals are therefore advised not to take any medicines before or during flight unless they are completely familiar with their effects on their own bodies. In cases of doubt, pilots should consult an AME, or the CAA Mas.

(2) ***Other Treatments***

Alternative or complementary medicine, such as acupuncture, homeopathy, hypnotherapy and several other disciplines, is developing and gaining greater credibility. Some such treatments are more acceptable in some States than others. There is a need to ensure that "other treatments", as well as the underlying condition, are declared and considered by the CAA MAs, or an AME when assessing fitness.

(3) ***Alcohol***

(a) Alcohol is a contributory factor in a number of aircraft accidents every year. It is now well established that even small amounts of alcohol in the blood produce a significant and measurable deterioration in the performance of skilled tasks. Research has shown that blood alcohol concentrations of 0.04% (0.04 gm/100ml) are associated with a highly significant increase in errors committed by both experienced and in-experienced pilots even in simple aircraft. This level may be produced after consuming two units of alcohol, e.g. 5cl of whiskey or 0·5L of beer.

(b) The number of units in an alcoholic drink is given by the volume of the drink in centilitres.

(c) multiplied by the strength in % weight/volume (%w/v).

Examples:
50 cl (0·5L) of beer of 5%w/v contains 2·5 units. (5% of 50 = 2·5).
2·5 cl of whiskey of 40%w/v contains 1 unit. (40% of 2·5 = 1).
75 cl (1 bottle) of wine of 12%w/v contains 9 units. (12% of 75 = 9).

(d) Alcohol is removed from the body at a relatively constant rate (0·015 promille each hour [0.015%]) regardless of the concentration present. Pilots should not fly for at least 12 hours after taking small amounts of alcohol and proportionally longer if larger amounts are consumed. It should also be remembered that

alcohol can have delayed effects on the blood sugar and the inner ear. The effects on the inner ear can be prolonged and increase susceptibility to disorientation and even motion sickness. It is prudent for a pilot to abstain from alcohol at least 24 hours before flying.

(e) It should be remembered that alcohol's effects can be enhanced or prolonged significantly if it is taken by an individual who is suffering from an illness or who is taking medication.

(f) The CAA considers a blood alcohol level of less than 0·02 promille (0.02%) as the upper limit for license holder on duty (hence, a blood alcohol level of 0.02% or more is considered positive), as well as a twelve (12) hour abstention period prior to specified reporting time for aviation duty.

(4) ***Psychotropic Drugs and Substance Abuse***

The use of such drugs or substances has a basic effect of detaching the person from reality as well as more complex short and long term effects. These effects are not compatible with the control of an aircraft and individuals using such drugs or substances are not fit to be members of flight crew/or control duties.

(5) ***information on Medication use by license holder.***

(a) General

i. These general guidelines have been developed to assist the AMEs in determining the aero-medically acceptable use of medications for pilots, cabin crew and ATCs. Each prescribing situation is unique in terms of the illness, the individual, and the drug, and it is difficult to legislate the sensible use of medications in pilots, cabin crew and ATCs. Determining whether a medication may be used in pilots, cabin crew on flying duties and/or ATCs on controlling duties and what restrictions may be appropriate should be based on a sound knowledge of aeromedical evaluation of the drug if available, drug actions, side effects, and the operational environment including possible contingency situations.

Note: If in doubt about prescribing a medication for a pilot, cabin crew, AME should consult the CAA Aeromedical section, for their decision and approval.

ii. When pilots, cabin crew or ATC are started on a long-term medication, the AME should inform Aeromedical Section even if the medicine is compatible for flying or controlling duties.

iii. One of the functions of the AME is to brief their candidates on the appropriate use and precautions in the use of drugs, including over-the-counter (OTC) medications and herbal preparations, which the candidates may not consider as "drugs". These guidelines may be helpful in the preparation of such briefings.

iv. pilots, cabin crew or ATC may also be prescribed medications from sources other than their AME, e.g. by Dental Officers or Consultants, and they should be briefed in the requirement to consult their AME prior to returning to flying or controlling duties while taking medication prescribed from any source.

(b) Drugs, Diseases and Flight Safety

In prescribing any medication for pilots, cabin crew or ATC, the AME should consider both the nature of the disease process, and the medication. Sometimes, the disease or medical problem itself will preclude flying rather than the potential side-effects of the medication.

When prescribing medications to pilots, cabin crew/or ATC we are concerned about two possibilities which may impact on FIGHT SAFETY:

i. *Acute incapacitation*
   Is there any possibility that this drug, in this situation, might cause incapacitation; anaphylaxis, acute vertigo, hypotension, arrhythmias, diplopia.
ii. *Performance decrements.*
   Performance decrements may occur through a direct effect on the CNS, or, by a peripheral side effect e.g. GI upset, which can be distracting enough to cause a critical lapse of attention. Drugs with obvious CNS side-effects, are obvious exclusions, but subtle side-effects from other medications may also cause serious flight safety problems.

Note 1: So, for any medication which can affect flight safety, the candidate should be grounded.

Note 2: Please refer CAR FCL-3.520(e) & 3.530 E(3) for Mood disorder certification requirements. Class 2 may be certified with OSL restriction.

CAR FCL-3.535 Psychology

(a) An applicant for or holder of a Class 1and Class 2 medical certificate shall have no established psychological deficiencies, which are likely to interfere with the safe exercise of the privileges of the applicable license(s). The CAA may require a psychological evaluation where it is indicated as part of, or complementary to, a specialist psychiatric or neurological examination

(b) A psychological evaluation by an approved Psychologist may be required as part of the initial CAA examination for Class 1 license applicant

(c) The psychologist shall submit to the CAA a written report detailing his opinion and recommendation.

(d) A psychological evaluation by an approved Psychologist shall be done for all initial over 60 applicants.

(e) To assess for neurocognitive decline in older pilots testing should be completed at age 55 and follow the guidelines.

(f) Any company wishes to mandate initial Psychometric for their Class 1 applicant should follow the guidelines established by the CAA for this purpose and should be done by approved Psychologist.

CAR FCL-3.540 Psychology (Class 1)

(a) Where there is suspicion or established evidence that an applicant has a psychological disorder, the applicant shall be referred for psychological opinion and advice.

(b) Established evidence shall be verifiable information from an identifiable source which evokes doubts concerning the mental fitness or personality of an 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 license.

(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.

CAR FCL-3.545 Psychology (Class 2)

Applicants with a psychological disorder may need to be referred for psychological or neuropsychiatric opinion and advice.

CAR FCL-3.550 Neurological requirements

(a) Applicants with clinical diagnosis or a documented medical history of any of the following medical conditions shall be assessed as unfit:
  (1) epilepsy, except in the cases referred to in points (1) and (2) of point (b)
  (2) two (2) recurring episodes of disturbance of consciousness of uncertain cause.

(b) Applicants with clinical diagnosis or a documented medical history of any of the following medical conditions shall undergo further evaluation before they may be assessed as fit:
  (1) epilepsy without recurrence after age five (5) years;
  (2) epilepsy without recurrence and off all treatment for more than ten (10) years;
  (3) epileptiform EEG abnormalities and focal slow waves;
  (4) progressive or non-progressive disease of the nervous system;
  (5) inflammatory disease of the central or peripheral nervous system;
  (6) migraine;
  (7) a single episode of disturbance of consciousness of uncertain cause;
  (8) loss of consciousness after head injury;
  (9) penetrating brain injury;
  (10) spinal or peripheral nerve injury;
  (11) disorders of the nervous system due to vascular deficiencies including haemorrhagic and ischaemic events.

(c) Applicants for a Class 1 medical certificate shall be referred to the medical assessor of the CAA. The fitness of applicants for a Class 2 medical certificate shall be assessed in consultation with the medical assessor of the licensing authority.

CAR FCL-3.555 Neurology (Class 1)

(a) Epilepsy
  (1) Applicants with a diagnosis of epilepsy should be assessed as unfit 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 ten (10) years. One or more convulsive episode after the age of five (5) years should lead to unfitness. 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 evaluation.
  (2) Applicants may be assessed as fit by the CAA MAs with an OML if:
    i. there is a history of a single afebrile epileptiform seizure;
    ii. there has been no recurrence after at least ten (10) years off treatment;
    iii. there is no evidence of continuing predisposition to epilepsy.

(b) EEG Abnormalities

(1) Electroencephalography is required when indicated by the applicant's history or on clinical grounds.
(2) Applicants with epileptiform paroxysmal EEG abnormalities and focal slow waves should be assessed as unfit.

(c) 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.

(d) Neurological disease
Applicants with any disease of the nervous system which is likely to cause a hazard to flight safety should be assessed as unfit. However, in certain cases, including cases of minor functional losses associated with stable disease, a fit assessment may be considered after full evaluation which should include a medical flight test which may be conducted in a flight simulation training device.

(e) Migraine
Applicants with an established diagnosis of migraine or other severe periodic headaches likely to cause a hazard to flight safety should be assessed as unfit. A fit assessment may be considered after full evaluation. The evaluation should take into account at least the following: auras, visual field loss, frequency, severity, therapy. Appropriate limitation(s) may apply.

(f) 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 applicants experiencing a recurrence should be assessed as unfit.

(g) Head injury
Applicants with a head injury which was severe enough to cause loss of consciousness or is associated with penetrating brain injury should be evaluated by a neurologist. A fit assessment may be considered if there has been a full recovery and the risk of epilepsy is sufficiently low.

(h) Spinal or peripheral nerve injury
Applicants with a history or diagnosis of spinal or peripheral nerve injury or a disorder of the nervous system due to a traumatic injury should be assessed as unfit. A fit assessment may be considered if neurological evaluation is satisfactory.

(i) Vascular deficiencies
Applicants with a disorder of the nervous system due to vascular deficiencies including hemorrhagic and ischemic events should be assessed as unfit. A fit assessment may be considered if neurological evaluation is satisfactory. A cardiological evaluation and medical flight test should be undertaken for applicants with residual deficiencies.

CAR FCL-3.560 Neurology (Class 2)

(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) Neurological disease
Applicants with any disease of the nervous system which is likely to cause a hazard to flight safety should be assessed as unfit. However, in certain cases, including cases of functional loss

associated with stable disease, a fit assessment may be considered after full evaluation which should include a medical flight test which may be conducted in a flight simulation training device.

(c) Migraine
Applicants with an established diagnosis of migraine or other severe periodic headaches likely to cause a hazard to flight safety should be assessed as unfit. A fit assessment may be considered after full evaluation. The evaluation should take into account at least the following: auras, visual field loss, frequency, severity, and therapy. Appropriate limitation(s) may apply.

(d) 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. An evaluation by a neurologist may be required depending on the staging of the original injury.

(e) Spinal or peripheral nerve injury
Applicants with a history or diagnosis of spinal or peripheral nerve injury or a disorder of the nervous system due to a traumatic injury should be assessed as unfit. A fit assessment may be considered if neurological evaluation is satisfactory.

(f) Vascular deficiencies
Applicants with a disorder of the nervous system due to vascular deficiencies including hemorrhagic and ischemic events should be assessed as unfit. A fit assessment may be considered if neurological evaluation is satisfactory. A cardiological evaluation and medical flight test should be undertaken for applicants with residual deficiencies.

CAR FCL-3.565 Neurology (Class 1 & 2)

A. Migraine

(1) Common Migraine (Migraine without Aura)
Diagnosis depends on:
   (a) Detailed history of headaches
   (b) Usually an absence of significant neurological symptoms.
   (c) Treatment usually does not include parenteral opiates or specific migraine drugs such as vascular active agents.

(2) Classical Migraine
Is accompanies by any transient focal neurological and /or vascular phenomena that may Include:
   (a) Unilateral headache.
   (b) Hemiparesthesia, Hemiplegia.
   (c) Retinal /occipital phenomena, such as visual disturbance of various degree and scotoma.
   (d) Basilar artery phenomena.
   (e) Autonomic symptoms of nausea, vomiting etc.
   (f) 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.

(3) Aeromedical disposition:
   (a) Anyone with a history of migraine should not be selected for Class 1 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 license for Class 1.

(c) if the migraine attacks are infrequent and due to a specific precipitant, and avoidance of this precipitants results in no further migraines an unrestricted license may be granted if a period of more than 2 years since the last episode has elapsed.

(d) Frequent migraine attacks are incompatible with any form of flying. Aeromedical evaluation board for revocation should be considered if the migraine remains frequent and uncontrolled for 2 years or more.

B. Traumatic Brain Injury

(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 license 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, behavioral, and psychosocial variables are involved in the outcome of a 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) Consequences of traumatic Brain Injury

(a) 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.

(b) 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.

(c) Post-Concussion Syndrome
Post-concussion syndrome is characterized 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 license holder should be grounded until the time his symptoms subsided.

(d) 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.

(e) Post-traumatic 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.

(f) Post Traumatic Epilepsy Markers
   i. A past history of febrile convulsions in childhood and/or a family history of epilepsy doubles the risk associated with any other markers.
   ii. Early post-traumatic epilepsy that occurs within the first week following injury carries a 25% risk of later epilepsy.
   iii. Demonstrated haemorrhage within the brain substance, particularly the cortical part, is associated with 25-45% risk of PTE.
   iv. Depressed fractures or presence of blood in the subarachnoid space are not reliable guides to risk of PTE.
   v. 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").

vi. 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.

(3) Aeromedical status for head injury based on clinical and imaging studies

(a) Mild Head Injury

This is characterized by:

i. 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 should 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 should be a clearly documented period of amnesia being less than one hour; and there should be no Post-traumatic syndrome (PTS). PTS comprises a symptom complex including:-Dizziness/ Vertigo; Emotional impairment; Headaches; Neurological signs and or Intellectual/ Cognitive impairments.

ii. Normal CT scan and MRI i.e. no skull fractures or cerebral bleeding.

iii. Normal neuropsychological testing.

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 CAA Mas for a final decision is required.

(b) Significant head injury

Presence of any of the following:

i. PTA/LOC >12 hrs., and

ii. (Focal neurological deficits

iii. Basal Skull fracture or Depressed fracture (Linear Fracture with intact dura not included)

iv. Surgical or traumatic penetration of the dura

v. Neurological/intellectual impairment

vi. Any intracranial bleeding (Subdural Hematoma, Epidural Hematoma, Intracranial Hemorrhage, Intraventricular Hemorrhage, Subarachnoid Hemorrhage)

vii. Abnormal EEG

1) Aero medical disposition
   - In the presence of any of the above findings, the license holder should be assessed unfit.
   - However, reconsideration of certification decision may be done by the CAA 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) Certification Requirements:
   - Two Neurology consultations by Neurologists acceptable to the CAA supporting recertification,
   - Comprehensive Neuro-psychological evaluations,
   - Brain imaging (CT or MRI) at index and no sooner than 2 years afterwards,
   - Normal Sleep deprivation / Photostimulation EEG,
   - Two practical flight tests including one at night during circadian lows,
   - 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.

CAR FCL-3.570 Ophthalmological Requirements

(a) An applicant for or holder of a Class 1 and Class 2 medical certificate 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 sequela of eye surgery or trauma, which is likely to interfere with the safe exercise of the privileges of the applicable license(s)

(b) Examination
   (1) For a Class 1 medical certificate:
      i. a comprehensive eye examination shall form part of the initial examination and shall be undertaken when clinically indicated and periodically, depending on the refraction and the functional performance of the eye.
      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.
      ii. a comprehensive eye examination shall be undertaken when clinically indicated.

(c) Visual acuity
   (1) For a class 1 medical certificate:

i. Distant visual acuity, with or without correction, shall be 6/9 (0,7) or better in each eye separately and visual acuity with both eyes shall be 6/6 (1,0) or better.
ii. At the initial examination, applicants with substandard vision in one eye shall be assessed as unfit.
iii. At revalidation and renewal examinations, notwithstanding point (c)(1)(i), applicants with acquired substandard vision in one eye or acquired monocularity shall be referred to the medical assessor of the CAA and may be assessed as fit subject to a satisfactory ophthalmological evaluation.

(2) For a class 2 medical certificate:
i. Distant visual acuity, with or without correction, shall be 6/12 (0,5) or better in each eye separately and visual acuity with both eyes shall be 6/9 (0,7) or better.
ii. Notwithstanding point (c)(2)(i), applicants with substandard vision in one eye or monocularity may be assessed as fit, in consultation with the medical assessor of the CAA and subject to a satisfactory ophthalmological evaluation.

(3) Applicants for class 1 and 2 shall be able to read an N5 chart or equivalent at 30-50 cm and an N14 chart or equivalent at 100 cm, if necessary with correction either spectacles or contact lenses or any other corrective procedures.

(d) Refractive error and anisometropia
(1) Applicants with refractive errors or anisometropia may be assessed as fit subject to satisfactory ophthalmic evaluation.
(2) Notwithstanding point (d)(1), applicants for a class 1 medical certificate with any of the following medical conditions shall be referred to the medical assessor of the CAA and may be assessed as fit subject to a satisfactory ophthalmological evaluation:
i. myopia exceeding – 6.0 dioptres;
ii. astigmatism exceeding 2.0 dioptres;
iii. anisometropia exceeding 2.0 dioptres
(3) Notwithstanding point (d)(1), applicants for a class 1 medical certificate with hypermetropia exceeding +5.0 dioptres shall be referred to the medical assessor of the CAA and may be assessed as fit subject to a satisfactory ophthalmological evaluation, provided that there are adequate fusional reserves, normal intraocular pressures and anterior angles and no significant pathology has been demonstrated. Notwithstanding point (c)(1)(i), corrected visual acuity in each eye shall be 6/6 or better.
(4) Applicants with a clinical diagnosis of keratoconus may be assessed as fit subject to a satisfactory examination by an ophthalmologist. Such applicants for a class 1 medical certificate shall be referred to the medical assessor of the CAA

(e) Binocular function
(1) Applicants for a Class 1 medical certificate shall be assessed as unfit, where they do not have normal binocular function and that medical condition is likely to jeopardize the safe exercise of the privileges of the license, taking account of any appropriate corrective measures where relevant.
(2) Applicants with diplopia shall be assessed as unfit.

(f) Visual fields
Applicants for a Class 1 medical certificate shall be assessed as unfit, where they do not have normal fields of vision and that medical condition is likely to jeopardise the safe exercise of the privileges of the license, taking account of any appropriate corrective measures where relevant

(g) Eye surgery
Applicants who have undergone eye surgery shall be assessed as unfit. However, they may be assessed as fit after full recovery of their visual function and subject to satisfactory ophthalmological evaluation.

(h) Spectacles and contact lenses

(1) If satisfactory visual function is achieved only with the use of correction, the spectacles or contact lenses shall provide optimal visual function, be well-tolerated and suitable for aviation purposes. No more than one pair of spectacles shall be used to meet the visual requirements when exercising the privileges of the applicable license(s).

(2) For distant vision, spectacles or contact lenses shall be worn when exercising the privileges of the applicable license(s).

(3) For near vision, a pair of spectacles shall be kept available when exercising the privileges of the applicable license(s).

(4) A spare set of similarly correcting spectacles, for distant or near vision as applicable, shall be readily available for immediate use when exercising the privileges of the applicable license(s).

(5) If contact lenses are worn when exercising the privileges of the applicable license(s), they shall be for distant vision, monofocal, and non-tinted and well-tolerated.

(6) Applicants with a large refractive error shall use contact lenses or high-index spectacle lenses.

(7) Orthokeratological lenses shall not be used.

CAR FCL-3.575 Ophthalmological Certifications Requirements (Class 1)

(a) **Eye examination**

(1) At each aero-medical 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.

(4) The possible cumulative effect of more than one eye condition should be evaluated by an ophthalmologist.

(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) visual fields;

(7) tonometry on clinical indication;

(8) objective refraction: hyperopic initial applicants with a hyperopia of more than +2 dioptres and under the age of 25 should undergo objective refraction in cycloplegia;

(9) assessment of mesopic contrast sensitivity; and

(10) colour vision.

(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; and
(4) further examination on clinical indication.

(d) **Refractive error and anisometropia**

(1) Applicants with the following conditions may be assessed as fit subject to satisfactory ophthalmic evaluation and provided that optimal correction has been considered and no significant pathology is demonstrated:
   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.

(2) Applicants should wear contact lenses if:
   i. hypermetropia exceeds +5.0 dioptres;
   ii. anisometropia exceeds 3.0 dioptres

(3) An evaluation by an eye specialist should be undertaken 5-yearly if:
   i. the refractive error is between –3.0 and –6.0 dioptres or +3 and +5 dioptres;
   ii. astigmatism or anisometropia is between 2.0 and 3.0 dioptres.

(4) An evaluation by an eye specialist should be undertaken 2-yearly if:
   i. the refractive error is greater than –6.0 dioptres or +5.0 dioptres;
   ii. astigmatism or anisometropia exceeds 3.0 dioptres.

(e) **Uncorrected visual acuity**

No limits apply to uncorrected visual acuity.

(f) **Visual acuity**

(1) Reduced vision in one eye or monocularity: Applicants for revalidation or renewal with reduced central vision or acquired loss of vision in one eye may be assessed as fit with an OML if:
   i. the binocular visual field or, in the case of monocularity, the monocular visual field is acceptable;
   ii. in the case of monocularity, a period of adaptation time has passed from the known point of visual loss, during which the applicant should be assessed as unfit;
   iii. the unaffected eye achieves distant visual acuity of 6/6 (1,0) corrected or uncorrected;
   iv. the unaffected eye achieves intermediate visual acuity of N14 and N5 for near;
   v. the underlying pathology is acceptable according to ophthalmological assessment and there is no significant ocular pathology in the unaffected eye; and
   vi. a medical flight test is satisfactory.

(2) Visual fields

Applicants with a visual field defect, who do not have reduced central vision or acquired loss of vision in one eye, may be assessed as fit if the binocular visual field is normal.

(g) **Keratoconus**

Applicants with keratoconus may be assessed as fit if the visual requirements are met with the use of corrective lenses and periodic evaluation is undertaken by an ophthalmologist.

(h) **Binocular function**

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. A fit assessment may be considered if an orthoptic evaluation demonstrates that the fusional reserves are sufficient to prevent asthenopia and diplopia.

(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. stability of refraction of less than 0.75 dioptres variation diurnally has been achieved;
   ii. examination of the eye shows no post-operative complications;
   iii. glare sensitivity is within normal standards;
   iv. mesopic contrast sensitivity is not impaired;
   v. an evaluation is undertaken by an eye specialist.

(2) Following intraocular lens surgery, including cataract surgery, a fit assessment may be considered once recovery is complete and the visual requirements are met with or without correction. Intraocular lenses should be monofocal and should not impair colour vision and night vision.

(3) Retinal surgery entails unfitness. A fit assessment may be considered 6 months after surgery, or earlier if recovery is complete. A fit assessment may also be considered earlier after retinal laser therapy. Regular follow-up by an ophthalmologist should be carried out.

(4) Glaucoma surgery entails unfitness. A fit assessment may be considered 6 months after surgery or earlier if recovery is complete. Regular follow-up by an ophthalmologist should be carried out.

(j) **Visual correction**

Correcting lenses should permit the license holder to meet the visual requirements at all distances.

CAR FCL-3.580 Ophthalmological Certifications Requirements (Class 2)

(a) **Eye examination**

(1) At each aero-medical revalidation examination an assessment of the visual fitness of the applicant 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. visual fields;
vii. colour vision;
viii. further examination on clinical indication.

(b) **Routine eye examination**

(1) A routine eye examination should include:
(2) history;
(3) visual acuities - near, intermediate and distant vision (uncorrected and with best optical correction if needed);
(4) examination of the external eye, anatomy, media and fundoscopy;
(5) further examination on clinical indication.

(c) **Visual acuity**

Reduced vision in one eye or monocularity: Applicants with reduced vision or loss of vision in one eye may be assessed as fit if:

(1) the binocular visual field or, in the case of monocularity, the monocular visual field is acceptable;
(2) in the case of monocularity, a period of adaptation time has passed from the known point of visual loss, during which the applicant should be assessed as unfit;
(3) the unaffected eye achieves distant visual acuity of 6/6 (1,0), corrected or uncorrected;
(4) the unaffected eye achieves intermediate visual acuity of N14 or equivalent and N5 or equivalent for near;
(5) there is no significant ocular pathology in the unaffected eye; and
(6) a medical flight test is satisfactory

(d) **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 satisfactory stability of refraction, there are no post-operative complications and no increase in glare sensitivity.
(3) After cataract, retinal or glaucoma surgery a fit assessment may be considered once recovery is complete and the visual requirements are met with or without correction.

(e) **Visual correction**

Correcting lenses should permit the license holder to meet the visual requirements at all distances.

(f) **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.

(g) **Binocular function**

(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) 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.
(3) Where specialist ophthalmological examinations are required for any significant reason, this should be imposed as a limitation on the medical certificate.
(4) The possible cumulative effect of more than one eye condition should be evaluated by an ophthalmologist.

(h) **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) visual fields;
(7) tonometry on clinical indication;
(8) objective refraction: hyperopic initial applicants with a hyperopia of more than +2 dioptres and under the age of 25 should undergo objective refraction in cycloplegia;
(9) assessment of mesopic contrast sensitivity; and
(10) colour vision and vision field

(i) **Routine eye examination**

(1) A routine eye examination may be performed by an AME and should include:
(2) history;
(3) visual acuities - near, intermediate and distant vision (uncorrected and with best optical correction if needed);
(4) examination of the external eye, anatomy, media and fundoscopy; and
(5) further examination on clinical indication.

(j) **Refractive error and anisometropia**

(1) Applicants with the following conditions may be assessed as fit subject to satisfactory ophthalmic evaluation and provided that optimal correction has been considered and no significant pathology is demonstrated:
    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.
(2) Applicants should wear contact lenses if:
    i. hypermetropia exceeds +5.0 dioptres;
    ii. anisometropia exceeds 3.0 dioptres.
(3) An evaluation by an eye specialist should be undertaken 5-yearly if:
    i. the refractive error is between –3.0 and –6.0 dioptres or +3 and +5 dioptres;
    ii. astigmatism or anisometropia is between 2.0 and 3.0 dioptres.
(4) An evaluation by an eye specialist should be undertaken 2-yearly if:
    i. the refractive error is greater than –6.0 dioptres or +5.0 dioptres;
    ii. astigmatism or anisometropia exceeds 3.0 dioptres.

CAR FCL-3.585 Visual system (Class 1 & 2)

(a) Refractive Surgery

(1) The CAA accepts the refractive procedures for visual acuity correction:
   i. Radial Keratotomy (RK)
   ii. Epikeratophakia
   iii. Laser-Assisted In Situ Keratomileusis (LASIK), including Wavefrontguided LASIK
   iv. Photorefractive Keratectomy (PRK)
   v. Conductive Keratoplasty (CK)

(2) These procedures have potential adverse effects that could be incompatible with flying duties, including: corneal scarring or opacities; worsening or variability of vision; and night-glare.

(3) The CAA expects that airmen will not resume airman duties until their treating health care professional determines that their post-operative vision has stabilized, there are no significant adverse effects or complications (such as halos, rings, haze, impaired night vision and glare), the appropriate vision standards are met, and they have been reviewed by an Examiner or CAA Designated ophthalmologist.

(4) When this determination is made, the airman should have the treating health care professional document this in the health care record, a copy of which should be forwarded to the CAA MAS before resumption of airman duties.

(5) If the health care professional's determination is favorable and after consultation and review by an, Examiner applicant may resume airman duties, unless informed otherwise by the CAA.

(6) An applicant treated with a refractive procedure may be issued a medical certificate by the Examiner if the applicant meets the visual acuity standards and the Report of Eye Evaluation indicates that healing is complete;
   i. visual acuity remains stable; and
   ii. the applicant does not suffer sequela such as;
      A. glare intolerance, halos, rings, impaired night vision, or any other complications.

(7) There should be no other pathology of the affected eye(s).

(8) If the procedure was done 2 years ago or longer, the CAA may accept the Examiner's eye evaluation and an airman statement regarding the absence of adverse sequela.

(9) If the procedure was performed within the last 2 years, the airman must provide a report to the CAA MAS from the treating health care professional to document the date of procedure, any adverse effects or complications, and when the airman returned to flying duties.

(10) If the report is favorable and the airman meets the appropriate vision standards, the applicant may resume airman duties, unless informed otherwise by the CAA.

(11) Radial Keratotomy
   i. In this operation, a limited number of radial incisions are made through the corneal stroma whereby the anterior surface is flattened. The method is used to reduce or eliminate myopia.
   ii. Experiences so far show that the myopia is reduced, and to a greater degree, in patients with larger amount of nearsightedness. It is not possible to predict the effect: some patients end up with hyperopia. Although complications due to the incisions are few, infections occur and have caused blindness. From the functional point of view, two problems are most relevant to aircraft personnel.

iii. One is that in some patients the refractive state is not stable and can vary more than 1 diopter during the day. Another is increased glare sensitivity due to the corneal scars.

iv. Applicants who undergo radial keratomy and whose eyes have established should thereafter have an ophthalmological assessment every two years for Class 1 and 3 and every five (5) years for Class 2.

Note 1: If the diurnal fluctuation in visual acuity is significant (i.e. loss of more than one Snellen line for Class 1 and 3 license applicants and more than two Snellen lines for Class 2 license applicants), even if an applicant's visual acuity is still within the pass standard, this fluctuation constitutes failure to meet the visual requirements of the standards concerned.

Note 2: This procedure is obsolete and should not be used anymore. However there are applicants who received these procedure years ago.

Note 3: Applicant who undergo this procedure, are not permitted to return to flying/or controlling duties while the refraction is still not stable. So extended eye examination is required before recertification, with particular concentration on stability of visual acuity.

v. Evidence of stability requires:
   A. A variation not exceeding 0.25 dioptre in refraction
   B. A visual acuity changing by not more than one Snellen line
   C. A visual acuity which at least satisfies the minimum standards for the class of license, at three paired serial measurements. Measurement should be in the morning and late in the day and should be delayed for at least three months following surgery.

(12) Laser-in-situ-Keratomileusis (LASIK)

i. During the laser in situ keratomileusis (LASIK) a corneal flap is shaved by a microkeratome.
ii. The cornea is flapped back and a laser ablation is performed in the stromal bed. After the laser procedure the corneal shave is returned back.
iii. The applicant should be aware of the possible adverse side effects of the procedure, and that in some cases it may take up to six (6) months for complete recovery.
iv. The possible complications of LASIK are more severe than in PRK (Photo Refractive Keratectomy), and mostly related to the use of the microkeratome.
v. The flap can be dislocated or be lost and it can be loosened long after surgery. An irregular astigmatism can be produced by the microkeratom.
vi. Also with this procedure glare and instability of refraction can occur.

(13) Conductive Keratoplasty (CK):

i. CK is used for correction of farsightedness.
ii. As this procedure is not considered permanent and there is expected regression of visual acuity in time, the CAA may grant an Authorization for special issuance of a medical certificate to an applicant who has had CK.
iii. The CAA evaluates CK procedures on an individual basis following a waiting period of 6 months.
iv. The waiting period is required to permit adequate adjustment period for fluctuating visual acuity.
v. The Examiner can facilitate CAA review by obtaining all pre and post-operative medical records, a Report of Extended Eye Evaluation from a treating or evaluating eye specialist with comment regarding any adverse effects or complications related to the procedure.

vi. Recertification Requirements For Any of the above procedures. Extended Eye Examination by Ophthalmologist and the evaluation should demonstrate:

- Visual acuity
- Field of vision
- Night glare
- Haziness
- Surgical healing of the flap is complete
- Significant dry eye syndrome
- Conjunctival injection/ inflammation
- Diffuse Lamellar Keratitis (DLK)
- Epithelial ingrowths
- Irregular flap (folds, wrinkles, striae)
- Incomplete/partial or complete flap displacement
- Retinal detachment
- Macular haemorrhage
- Decreased quality of vision in low light conditions or a loss of contrast sensitivity
- Visual aberrations such as glare, diplopia, ghosting, or starbursts
- Infection
- Stability of refraction is demonstrated with a diurnal variation of less than 0.75D in each eye

(b) Phakic Intraocular Lenses

It has been shown that corneal refractive surgery presents bad results in high refractive errors. To correct high refractive errors, a second artificial lens is implanted in addition to the own lens. There are two possible locations to place the lens: in the anterior or in the posterior chamber of the eye. The procedure works for myopia from -10 to -18 diopters and for hyperopia of +3 to +10 diopters. It is also a procedure that is reversible. Lens implantation is a well-known procedure. But it is an intraocular surgery with the possibility of infections, loss of the eye, pupillary block glaucoma, and development of cataract, retinal detachment, corneal edema or opacity with resulting keratoplasty due to loss of endothelial cells. For high hyperopia up to +9 diopters a clear lens extraction with intraocular lens implantation is performed. This procedure is not reversible and it is combined with the loss of accommodation and therefore not very useful in young patient eyes.

(c) Assessment

A fit assessment may be possible after an appropriate time period depending on the preoperative refraction, the thickness of the cornea, and the experience of the surgeon, the performed procedure and the side effects of the individual case. A fit assessment may be possible, provided that there is no postoperative problems have occurred and especially if the intraocular pressure is not increased.

Note: In case, where the candidate did not inform his/her AME about any surgical procedure mentioned above, the candidate will be classified as holding a disqualified medical certificate and this will be considered a breach of CAA regulation. The applicant will be subjected to penalty and he may lose his license permanently.

(d) 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) 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.

(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.

i. 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 perforation may lead to loss of the eye.	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 5. Laser damage to the retinal/cornea

(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.

(4) Evaluation of suspected Laser injuries by Eye Specialist:

i. 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 should 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 should notify the CAA as soon as time and circumstances permit.

ii. Physical examination

A. In any suspected laser eye injury, the patient should be re-examined as clinically indicated, ideally within 24 hours, but at least not greater than 72 hours.

B. the Eye doctor should use the CAA Ophthalmology evaluation form:

- 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 fiber 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

CAR FCL-3.590 Color Vision

(a) Applicants shall be assessed as unfit, where they cannot demonstrate their ability to readily perceive the colors that are necessary for the safe exercise of the privileges of the license.

(b) Examination and assessment

(1) Applicants shall be subjected to the Ishihara test for the initial issue of a medical certificate. Applicants who pass that test may be assessed as fit.

(2) For a Class 1 medical certificate:

i. Applicants who do not pass the Ishihara test shall be referred to the medical assessor of the licensing authority and shall undergo further color perception testing to establish whether they are color safe.

ii. Applicants shall be normal trichromats or shall be color safe.

iii. Applicants who fail further color perception testing shall be assessed as unfit

(3) For a Class 2 medical certificate:

i. Applicants who do not pass the Ishihara test shall undergo further colour perception testing to establish whether they are color safe.

ii. Applicants who do not have satisfactory perception of colors shall be limited to exercising the privileges of the applicable license in daytime only.

CAR FCL-3.595 Colour vision (Class 1)

(a) At revalidation and renewal examinations, color vision should be tested on clinical indication.

(b) The Ishihara test (24 plate version) is considered passed if the first fifteen (15) plates, presented in a random order, are identified without error.

(c) Those failing the Ishihara test should be examined either by:
   (1) Anomaloscopy (Nagel or equivalent). This test is considered passed if the colour match is trichromatic and the matching range is four (4) scale units or less, or if the anomalous quotient is acceptable; or by
   (2) lantern testing with a Spectrolux, Beynes or Holmes-Wright lantern. This test is considered passed if the applicant passes without error a test with accepted lanterns.
   (3) Colour Assessment and Diagnosis (CAD) test. This test is considered passed if the threshold is less than six (6) standard normal (SN) units for deutan deficiency, or less than twelve (12) SN units for protan deficiency. A threshold greater than two (2) SN units for tritan deficiency indicates an acquired cause which should be investigated.

CAR FCL-3.600 Colour vision (Class 2)

(a) Colour vision should be tested on clinical indication at revalidation and renewal examinations.

(b) The Ishihara test (24 plate version) is considered passed if the first fifteen (15) plates, presented in a random order, are identified without error.

(c) Those failing the Ishihara test should be examined either by:
   (1) anomaloscopy (Nagel or equivalent). This test is considered passed if the colour match is trichromatic and the matching range is four (4) scale units or less, or if the anomalous quotient is acceptable; or by
   (2) lantern testing with a Spectrolux, Beynes or Holmes-Wright lantern. This test is considered passed if the applicant passes without error a test with accepted lanterns.
   (3) Colour Assessment and Diagnosis (CAD) test. This test is considered passed if the threshold is less than six (6) standard normal (SN) units for deutan deficiency, or less than twelve (12) SN units for protan deficiency. A threshold greater than two (2) SN units for tritan deficiency indicates an acquired cause which should be investigated.

CAR FCL-3.605 Colour vision

(a) Screening tests for Colour Vision

- Frequency - At all Aeromedical examination
- Approved screening test - Ishihara, 24 plates
   (1) Screening test
      i. Plate testing procedure.
      Reliable colour vision testing using the plates requires that a standardized procedure be followed carefully. The main points are;
         A. 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 l’E clairage).
         B. Position
         The plates should be shown at right angles to the visual axis of the applicant at about 75 cm distance.

C. Exposure time
Plates are exposed in random sequence and each plate is exposed for a maximum of five seconds.

ii. Screening test result
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).

Colour unsafe, Class 1 cannot be certificated without advanced colour vision testing

(b) Approved Advance test for initial Class 1 is CAD test

(1) Indication for advanced testing
i. Initial Applicants for Class 1 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 the initial CAA Medical application, or
iv. Current holder of a CAA Medical Class 1 who had previously granted a waiver based on foreign waiver/or advance colour vision tests not approved by CAA.

Note: Current CAA License Holders who had previously passed Anomaloscopy or Lantern testing acceptable to CAA (Holmes Wright, Beynes, or Spectrolux) are not required to take CAD test.

(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 2 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 license (Valid only for day flying only).
iv. Cabin crew members should be able to correctly identify 9 of the first 15 plates of the 24-plate edition of Ishihara pseudo isochromatic plates. Alternatively, cabin crew members should demonstrate that they are safe.

CAR FCL-3.610 Otorhino-laryngological requirements

(a) An applicant for or holder of a Class 1 and Class 2 medical certificate 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 sequela of surgery and trauma which is likely to interfere with the safe exercise of the privileges of the applicable license(s).

(b) Presence of any of the following disorders in an applicant shall result in an unfit assessment.
(1) Active pathological process, acute or chronic, of the internal or middle ear.
(2) Unhealed perforation or dysfunction of the tympanic membranes
(3) Disturbances of vestibular function (see paragraph 4 Appendix 15 to Subpart B).
(4) Significant restriction of the nasal air passage on either side, or any dysfunction of the sinuses.
(5) Significant malformation or significant, acute or chronic infection of the oral cavity or upper respiratory tract.
(6) Significant disorder of speech or voice.

(c) A comprehensive otorhino-laryngological examination is required at the initial examination and subsequently once every five years up to the 40th birthday and every two years thereafter

(d) A routine Ear-Nose-Throat examination shall form part of all revalidation and renewal examinations.

(e) Hearing shall be satisfactory for the safe exercise of the privileges of the applicable license(s).

(f) 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 license 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.

(g) 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;
(8) shall undergo further medical examination and assessment to establish that the condition does not interfere with the safe exercise of the privileges of the license held

(h) 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.

CAR FCL-3.615 Otorhino-laryngology (Class 1)

(a) Hearing

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.

The pure tone audiogram should cover the 500 Hz, 1000 Hz, 2000 Hz and 3000 Hz frequency thresholds.

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.

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 otorhino-laryngological examination 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 Condition

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 stabilized or there has been a full recovery.

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.

CAR FCL-3.620 Otorhino-laryngology (Class 2)

(a) Hearing
   (1) The applicant should understand correctly conversational speech when tested with each ear at a distance of 2 meters 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 Medical Assessor.
   (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 stabilized 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.

CAR FCL-3.625 Otorhino-laryngology (Class 1&2)

(a) Hearing Aids

(1) For initial Class 1 applicants, hearing aids are not usually acceptable. If an applicant who already holds a medical certificate, any type of hearing aid is acceptable for recertification, e.g. bone-anchored or intra-aural.

(2) Following insertion of the hearing aid, a functional hearing assessment should 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

(3) For removable hearing aids, audiometry, if required, should be undertaken both with and without hearing aids.

(b) Ear Conditions

(1) A fit assessment can be considered after full recovery from a condition affecting the ear following provision of a satisfactory ENT specialist report.

(2) If there is incomplete recovery from the condition, evidence that the condition has stabilized for an appropriate period of time is required.
(3) The audiogram standards should be met or a satisfactory functional hearing assessment is required.

(c) 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 should be pain free. A satisfactory audiogram is required for Class 1 recertification.

(d) 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.

(e) Grommet insertion
This is acceptable for certification at both initial and revalidation/renewal.

(f) 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 four (4) weeks. Class 1 holders require an OML for a minimum period of three (3) months from recertification. The use of any medication to treat vestibular symptoms, e.g. Betahistine is not acceptable for medical certification.

(g) Meniere's Disease
A diagnosis of Meniere's Disease, untreated or treated is not acceptable for Class 1 or 2 medical initial or recertification.

(h) Speech discrimination test or functional hearing test

This test should be based on the following ICAO guidance:
(1) 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.
(2) 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 license and ratings are valid.
(3) The frequency composition of the background noise is defined only to the extent that the frequency ranges from 600 to 4 800 Hz (speech frequency range) is adequately represented.
(4) In the speech material for discrimination testing, both aviation-relevant phrases and phonetically balanced words are normally used.
(5) Alternatively, a practical hearing test conducted in communication environment representative of the one for which the certificate holder's license and ratings are valid may be used.

Note: See form below for completion by SAME/AME

Medical in Confidence

Civil Aviation Authority

FUNCTIONAL HEARING ASSESSMENT/SPEECH DISCRIMINATION TEST

Based on 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. This test should be conducted where background noise is representative of the noise in the cockpit of the type of aircraft for which the pilot's license and ratings are valid. Both aviation-related phrases and phonetically balanced words should be used in the speech material for discrimination testing.

1. PERSONAL DETAILS			
Name:		CAA License No.	
Place of Test:		Aircraft / Simulator / Other	

2. DETAILS OF TEST	YES	NO	N/A
1. Can the subject hear adequately in the Aircraft /Simulator / Other (Please state) ……. During all phases of flight?			
2. Does his/her hearing loss interfere with the ability to communicate with Air Traffic Control and/or other flight crew members during all phases of flight?			
3. Can he/she accurately identify non-routine R/T phraseology?			
4. Can he/she identify accurately the identification signals of the navigation beacons?			
5. In your opinion, does his/her hearing loss interfere with flight safety?			
6. Have you any other observations or comments?			

Name: (SAME/AME)	Signature:	SAME/AME No.:

3. SUBMISSION INSTRUCTIONS	
Please return the completed for to:	Civil Aviation Authority, Medical Assessor Office, Licensing Section, Flight Safety Department.
CAA Form: OTORHINO-2 (Rev-2 – 10/10/21)	

CAR FCL-3.630 Hearing requirements

(a) Hearing shall be tested at all examinations. The applicant shall understand correctly conversational speech when tested within each ear at a distance of two (2) metres from and with his back turned towards the AME.

(b) Hearing shall be tested with pure tone audiometry at the initial examination and at subsequent revalidation or renewal examinations every five years up to the 40th birthday and every two (2) years thereafter.

(c) At the initial examination for a Class 1 medical certificate there shall be no hearing loss in either ear, when tested separately, of more than 20 dB(HL) at any of the frequencies 500, 1 000 and 2 000 Hz, or of more than 35 dB(HL) at 3 000 Hz. An applicant whose hearing loss is within 5 dB(HL) of these limits in two (2) or more of the frequencies tested, shall undergo pure tone audiometry at least annually.

(d) At revalidation or renewal examinations, there shall be no hearing loss in either ear, when tested separately, of more than 35dB(HL) at any of the frequencies 500, 1 000, and 2 000 Hz, or of more than 50 dB(HL) at 3 000 Hz. An applicant whose hearing loss is within 5 dB(HL) of these limits in two (2) or more of the frequencies tested, shall undergo pure tone audiometry at least annually.

(e) At revalidation or renewal, applicants with hypoacusis may be assessed as fit by the AMB if a speech discrimination test demonstrates a satisfactory hearing ability.

CAR FCL-3.635 Dermatology

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

Particular attention should be paid to the following disorders:

(a) Eczema (Exogenous and Endogenous),
(b) Severe Psoriasis,
(c) Bacterial Infections,
(d) Drug Induced Eruptions,
(e) Bullous Eruptions,
(f) Malignant Conditions of the skin,
(g) Urticaria.

Referral to the CAA Medical Assessor shall be made if doubt exists about any condition.

CAR FCL-3.640 Dermatology (Class 1)

(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.

CAR FCL-3.645 Dermatology (Class 2)

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.

CAR FCL-3.650 Oncology

(See Appendix 10)

(a) An applicant for or holder of a Class 1 medical and class 2 certificate shall have no established primary or secondary malignant disease likely to interfere with the safe exercise of the privileges of the applicable license(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 tumor shall be assessed as unfit.

CAR FCL-3.655 Oncology (Class 1)

(See Appendix 10)

(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 tumor 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.

CAR FCL-3.660 Oncology (Class 2)

(See Appendix 10)

(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; special attention is paid to applicants who have received anthracyline chemotherapy;
   (5) 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.

Intentionally Left Blank

SUBPART D — MEDICAL REQUIREMENTS FOR CABIN CREW FITNESS

SECTION 1 – General Requirements

CAR FCL-3.700 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 Part.

CAR FCL-3.705 Aero-medical assessments – General

(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 sixty (60) months.

(c) Aero-medical assessments shall be conducted by an AME or AeMC, if the requirements of CAR FCL-3.065 are complied with.

CAR FCL-3.710 Aero-medical assessments – Specific

(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.

(b) Crew coordination, management of disruptive passengers and of security threats.

(c) When relevant, operating as single cabin crew should also be taken into account when assessing the medical fitness of cabin crew.

SECTION 2 – Requirement for Aero-Medical Assessment of Cabin Crew

CAR FCL-3.715 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.

CAR FCL-3.720 Aero-medical examinations/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.

CAR FCL-3.725 Conducting an aero-medical examination/assessment

(See AMC to FCL-3.725(a)(1))

Aero-medical examinations and/or assessments of cabin crew members shall be conducted according to the specific medical requirements.

(a) for the initial cabin crew aero-medical assessment at an AeMC
  (1) an assessment of the applicant cabin crew member's medical history which should be done by the SAME, AME or Aviation Nurse; and
  (2) a clinical examination should include the following:
    i. Pulse, BP and Oxygen Saturations to check cardiovascular system abnormalities;
    ii. PFT to exclude respiratory system abnormalities;
    iii. GLAS screening examination test to exclude musculoskeletal system abnormalities;
    iv. Audiogram or functional test during SEP training if applicable to check otorhino-laryngology abnormalities;
    v. Visual Acuity test to exclude visual system abnormalities; and
    vi. Ishihara test for colour vision or alternatively functional test during SEP training;
    vii. Drug test

(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.

(d) The responsibility for signing the medical would lie with the AME and ultimately with the Accountable Manager (AM) who shall undertake an audit on the medicals performed under the AeMC the paragraph (a) & (b) above to ensure compliance with the regulation.

AMC to CAR FCL-3.725(a)(1) Conducting an aero-medical examination/assessment

(a) Requirements for Aviation nurses' designation
  (1) Be fully qualified and licensed by the Health authority appropriate to the region.
  (2) Have undertaken a CAA acceptable training course in aviation medicine.
  (3) Should work in an approved CAA facility or, AeMC.
  (4) Should have training on collection of urine for the purpose of drug testing
  (5) Have adequate knowledge and skills necessary for performing the specialist investigation and test required for clinical assessment of Cabin crew (Audiogram, ECG, etc.)
  (6) Have periodic competency checks by the SAME.

(b) Musculoskeletal Screening examination "GALS"
- Gait - Appearance Movement
- Arms - Appearance Movement
- Legs - Appearance Movement
- Spine - Appearance Movement

Additional requirements for applicants for, or holders of, a cabin crew license

CAR FCL-3.730 Content of aero-medical examination/assessment

(See GM-1 to FCL-3.730 and GM-2 to FCL-3.730(m))

(a) ***Examination***
  (1) A standard 12-lead resting electrocardiogram (ECG) and report shall be completed on clinical indication, on initial, 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, hypertension, diabetes, obesity etc., the intervals of resting ECGs should be reduced to two years or less if deemed required.
  (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;
    iii. 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:
i. symptomatic sinoatrial disease
ii. complete atrioventricular block;
iii. symptomatic QT prolongation;
iv. an automatic implantable defibrillating system; or
v. a ventricular anti-tachycardia pacemaker

should be assessed as unfit.

(f) ***Respiratory system***

(1) 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.
(2) Cabin crew members should be required to undergo pulmonary function tests on clinical indication.
(3) Cabin crew members with a history or established diagnosis of:
i. asthma;
ii. active inflammatory disease of the respiratory system;
iii. active sarcoidosis;
iv. pneumothorax;
v. sleep apnea syndrome/sleep disorder; or
vi. major thoracic surgery

should undergo respiratory evaluation with a satisfactory result before a fit assessment can be considered.

(4) Cabin crew members who have undergone a pneumonectomy should be assessed as unfit.

(g) ***Digestive system***

(1) 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.

(2) Cabin crew members should be free from hernia that might give rise to incapacitating symptoms.

(3) Cabin crew members with disorders of the gastro-intestinal system, including:

i. recurrent dyspeptic disorder requiring medication;
ii. pancreatitis;
iii. symptomatic gallstones;
iv. an established diagnosis or history of chronic inflammatory bowel disease; or
v. after surgical operation on the digestive tract or its adnexa, including
vi. 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.

(h) ***Metabolic and endocrine systems***

(1) 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.

(2) 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.

(3) Diabetes mellitus

i. 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.
ii. 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.

(i) ***Hematology***

(1) Cabin crew members with a hematological condition, such as:

i. abnormal hemoglobin including, but not limited to, anemia,
ii. polycythemia or haemoglobinopathy;
iii. coagulation, hemorrhagic or thrombotic disorder;
iv. significant lymphatic enlargement;
v. acute or chronic leukemia; or
vi. enlargement of the spleen
vii. may be assessed as fit subject to satisfactory aero-medical evaluation

(j) ***Genitourinary system***

(1) 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.
(2) 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.
(3) Cabin crew members with a genitourinary disorder, such as:
    i. renal disease; or
    ii. a history of renal colic due to one or more urinary calculi

may be assessed as fit subject to satisfactory renal/urological evaluation
(4) 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.

(k) ***Obstetrics and gynecology***
(1) Cabin crew members who have undergone a major gynecological operation should be assessed as unfit until full recovery.
(2) Pregnancy:
    i. A pregnant cabin crew member may be assessed as fit only during the first sixteen (16) weeks of gestation following review of the obstetric evaluation by the AME.
    ii. A limitation not to perform duties as single cabin crew member should be considered.
    iii. The AME should provide written advice to the cabin crew member and supervising physician regarding potentially significant complications of pregnancy resulting from flying duties.
    iv. If obstetric evaluation indicates a completely normal pregnancy, the applicant may be assessed as fit until the end of the 26th week of gestation

(l) ***Musculoskeletal system***
(1) 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.
(2) A cabin crew member should have satisfactory functional use of the musculoskeletal system.

(m) ***Psychiatry***
(1) 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.
(2) Cabin crew members with an established history or clinical diagnosis of schizophrenia, schizotypal or delusional disorder should be assessed as unfit.
(3) Cabin crew members with a psychiatric condition such as:
    i. mood disorder;
    ii. neurotic disorder;
    iii. personality disorder; or
    iv. mental or behavioural disorder

should undergo satisfactory psychiatric evaluation before a fit assessment can be made
(4) 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.

(n) ***Psychology***

(1) Where there is established evidence that a cabin crew member has a psychological disorder, he/she should be referred for psychological opinion and advice.
   i. The psychological evaluation may include a collection of biographical data, the review of aptitudes, and personality tests and psychological interview.
   ii. The psychologist should submit a report to the AME, detailing the results and recommendation.

(2) The cabin crew member may be assessed as fit to perform cabin crew duties, with limitation if and as appropriate.

(o) ***Neurology***

(1) Cabin crew members with an established history or clinical diagnosis of:
   i. epilepsy; or
   ii. recurring episodes of disturbance of consciousness of uncertain cause should be assessed as unfit.

(2) Cabin crew members with an established history or clinical diagnosis of:
   i. epilepsy without recurrence after five years of age and without treatment for more than ten years;
   ii. epileptiform EEG abnormalities and focal slow waves;
   iii. progressive or non-progressive disease of the nervous system;
   iv. a single episode of disturbance of consciousness of uncertain cause;
   v. loss of consciousness after head injury;
   vi. penetrating brain injury; or
   vii. spinal or peripheral nerve injury;
   viii. should undergo further evaluation before a fit assessment can be considered

(p) ***Visual system***

(1) Examination
   i. a routine eye examination should form part of the initial and all further assessments and/or examinations; and
   ii. an extended eye examination should be undertaken when clinically indicated.

(2) Distant visual acuity, with or without correction, should be with both eyes 6/9 or better.

(3) A cabin crew member should be able to read an N5 chart (or equivalent) at 30–50 cm, with correction if prescribed.

(4) Cabin crew members should be required to have normal fields of vision and normal binocular function.

(5) Cabin crew members who have undergone refractive surgery may be assessed as fit subject to satisfactory ophthalmic evaluation.

(6) Cabin crew members with diplopia should be assessed as unfit.

(7) Spectacles and contact lenses:
   i. If satisfactory visual function is achieved only with the use of correction:
      A. in the case of myopia, spectacles or contact lenses should be worn whilst on duty;
      B. in the case of hyperopia, spectacles or contact lenses should be readily available for immediate use;
      C. the correction should provide optimal visual function and be well tolerated;
      D. orthokeratological lenses should not be used.

(q) ***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.

(r) ***Otorhino-laryngology***

(1) Hearing should be satisfactory for the safe exercise of cabin crew duties and responsibilities. Cabin crew with hypoacusis should demonstrate satisfactory functional hearing abilities.

(2) Examination

i. An ear, nose and throat (ENT) examination should form part of all examinations and/or assessments.

ii. Hearing should be tested at all assessments and/or examinations:

A. the cabin crew member should understand correctly conversational speech when tested with each ear at a distance of two (2) meters from and with the cabin crew member's back turned towards the examiner;

B. Notwithstanding (A) above, hearing should be tested with pure tone audiometry at the initial examination and when clinically indicated.

C. 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.

(3) Cabin crew members with:

i. an active pathological process, acute or chronic, of the internal or middle ear;

ii. unhealed perforation or dysfunction of the tympanic membrane(s);

iii. disturbance of vestibular function;

iv. significant restriction of the nasal passages;

v. sinus dysfunction;

vi. significant malformation or significant, acute or chronic infection of the oral cavity or upper respiratory tract;

vii. 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.

(s) ***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.

(t) ***Oncology***

(1) After treatment for malignant disease, cabin crew members should undergo satisfactory oncological and aero-medical evaluation before a fit assessment may be considered.

(2) Cabin crew members with an established history or clinical diagnosis of intracerebral malignant tumor should be assessed as unfit. Considering the histology of the tumor, a fit assessment may be considered after successful treatment and full recovery.

GM-1 to CAR FCL-3.730 Content of aero-medical examination/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, in conjunction with 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:

i. 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;
iii. 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 refuelling, 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:
Operation and monitoring of aircraft systems, surveillance of the cabin, lavatories, galleys, crew areas and flight crew compartment;
i. coordination with flight crew on situation in the cabin and turbulence events/effects;
ii. management and observation of passengers (consumption of alcohol, behaviour, potential medical issues), observation of use of portable electronic devices;
iii. 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 passenger's movement if possible; instructions to passengers to prevent smoke
(5) inhalation/suffocation; give first aid as necessary; monitor the affected area until landing; preparation for possible emergency landing.
(6) 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.

(7) In case of disruptive passenger behaviour: passenger management as appropriate including use of restraint technique as considered required.
(8) 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, and protection of flight crew compartment door.
(9) 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.

GM-2 to CAR FCL-3.730(m)Content of aero-medical assessments

Psychiatry – CAA Protocol to License Depressed Cabin Crew on Treatment

(a) Initial diagnosis of a Depressive episode (according to ICD 10) and treatment must be initiated by a CAA approved Psychiatrist.

(b) The treatment options include Cognitive Behavioural Therapy (CBT), and or Selective Serotonin Reuptake Inhibitors (SSRI's).

(c) The SSRI's allowed to be used are Citalopram, Escitalopram, Sertraline and Fluoxetine. - Other treatment options must be assessed on individual basis. Initial grounding post commencement of treatment to:
(1) Check for potential side effects
(2) Improvement in the condition
(3) Stability

(d) Once stable and there is absence of any side effects confirmed by the treating Psychiatrist, the medical certificate will be reinstated by the CAA.

(e) The Cabin crew will be reviewed every 3 months, unless indicated otherwise by treating psychiatrist.

(f) After returning to flying duties the Cabin Crew must ground himself if he feels a worsening of his condition. Any change in his condition must immediately be evaluated by Psychiatrist.
(1) Any suicidal ideation during the course of stability will necessitate grounding and further Psychiatric re-evaluation
(2) Evidence of non-compliance with treatment or ignorance of Psychiatric or AME reviews, necessitates immediate grounding.

(g) Once treatment has completed, Cabin crew should be reviewed as directed by the Psychiatrist.

CAR FCL-3.735 Cabin crew medical report

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

(c) The cabin crew medical report to be provided in writing to the applicants for, and holders of, a cabin crew license after completion of each aero-medical assessment shall be issued:
   (1) in English; and
   (2) according to the CAA Medical certificate system.

CAR FCL-3.740 Limitations

(a) If holders of a cabin crew license do not fully comply with the medical requirements specified in this Section, 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 license shall be specified on the cabin crew medical report and shall only be removed by an AeMC or the CAA MAs.

GM to FCL-3.740 Limitations

(a) When assessing whether the holder of a cabin crew license may be able to perform cabin crew duties safely if complying with one or more limitations, the following possible limitations should be considered:

(b) a restriction to operate only in multi-cabin crew operations (MCL); can only be inserted by SAME or AME in consultation with AMS.

(c) a restriction to specified aircraft type(s) (OAL) or to a specified type of operation (OOL); can only be inserted by SAME or AME in consultation with AMS.

(d) a requirement to undergo the next aero-medical examination and/or assessment at an earlier date than required by CAR FCL-3.020 and CAR FCL-3.025 can only be inserted by SAME or AME in consultation with AMS.

(e) a requirement to undergo specific regular medical examination(s) (SIC); can only be inserted by SAME or AME in consultation with AMS.

(f) a requirement for visual correction (CVL), or by means of corrective lenses only (CCL); can be inserted by SAME or AME.

(g) a requirement to use hearing aids (HAL); can only be inserted by SAME or AME in consultation with AMS; and

(h) special restriction as specified (SSL); can only be inserted by SAME or AME in consultation with AMS.

Intentionally Left Blank

SUBPART E — REQUIREMENTS FOR AIR TRAFFIC CONTROLLERS MEDICAL

SECTION 1 – General

CAR FCL-3.750 ATC Limitations to medical certificates

(a) Limitations to Class 3 medical certificate
  (1) If the applicant does not fully comply with the requirements for a Class 3 medical certificate but is considered to be not likely to jeopardise the safe exercise of the privileges of the license, the AeMC or AME shall:
    i. refer the decision on fitness of the applicant to the CAA as indicated in this Subpart; or
    ii. in cases where a referral to the CAA is not indicated in this Subpart, 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.
  (2) The AeMC or AME may revalidate or renew a medical certificate with the same limitation without referring the applicant to the CAA.

(b) 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 license is not likely to jeopardize flight safety;
  (2) the applicant's experience relevant to the operation to be performed.

(c) Operational limitations
  (1) The Senior AME or the CAA, in conjunction with the air navigation service provider, shall determine the operational limitations applicable in the specific operational environment concerned.
  (2) Appropriate operational limitations shall only be placed on the medical certificate by the Senior AME and /or CAA.

(d) Any other limitation may be imposed on the holder of a medical certificate if required to ensure the safe exercise of the privileges of the license.

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

CAR FCL-3.755 ATC Limitations to Class 3 medical certificates

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

(b) In cases where a fit assessment may only be considered with a limitation, the AeMC, AME or the CAA should evaluate the medical condition of the applicant with appropriate personnel from the ANSP and other experts, if necessary

(c) Entry of limitations
  (1) Limitations VDL, VML, VNL, CCL, may be imposed by an AME or an AeMC.
  (2) Limitations VXL and VXN should be imposed with advice of the air navigation service provider.
  (3) Limitations SIC SSL, TML, HAL and RXO should only be imposed by the AeMC or CAA.

(d) Removal of limitations
  (1) All limitations should only be removed by the CAA

CAR FCL-3.760 ATC Limitations to Class 3 medical certificates

LIMITATION CODES

(a) The following abbreviations for limitations should be used on the medical certificate as applicable:

Code	Limitation
TML	Restriction of the period of validity of the medical certificate
VDL	Wear correction for defective distant vision and carry spare set of spectacles
VXL	Correction for defective distant vision depending on the working environment
VML	Wear correction for defective distant, intermediate and near vision and carry spare set of spectacles
VNL	Have correction available for defective near vision and carry spare set of spectacles
VXN	Correction for defective near vision; correction for defective distant vision depending on the working environment
RXO	Specialist ophthalmological examinations
CCL	Correction by means of contact lenses
HAL	valid only when hearing aids are worn
SIC	Specific medical examination(s)
SSL	Special restrictions as specified

(b) The abbreviations for the limitation codes should be explained to the holder of a medical certificate as follows:

(1) TML — Time limitation

The period of validity of the medical certificate is limited to the duration as shown on the medical certificate. This period of validity commences on the date of the medical examination. Any period of validity remaining on the previous medical certificate is no longer valid. The air traffic controller should present him/herself for reassessment or examination when advised and should follow any medical recommendations.

(2) VDL — Wear corrective lenses and carry a spare set of spectacles

Correction for defective distant vision: whilst exercising the privileges of the license, the air traffic controller should wear spectacles or contact lenses that correct for defective distant vision as examined and approved by the AeMC or AME. Contact lenses may not be worn until cleared to do so by an AeMC or AME. A spare set of spectacles, approved by the AeMC or AME, should be readily available

(3) VXL — Correction for defective distant vision depending on the working environment

Correction for defective distant vision does not have to be worn if the air traffic controller's visual working environment is in the area of up to 100 cm. Applicants who do not meet the uncorrected distant visual acuity requirement but meet the visual acuity requirement for intermediate and near vision without correction and whose visual working environment is only the intermediate and near vision area (up to 100 cm) may work without corrective lenses.

(4) VML — Wear multi focal spectacles and carry a spare set of spectacles

Correction for defective distant, intermediate and near vision: whilst exercising the privileges of the license, the air traffic controller should wear spectacles that correct for defective distant, intermediate and near vision as examined and approved by the AeMC

or AME. Contact lenses or full frame spectacles, when either correct for near vision only, may not be worn

(5) VNL — Have available corrective spectacles and a spare set of spectacles

Correction for defective near vision: whilst exercising the privileges of the license, the air traffic controller should have readily available spectacles that correct for defective near vision as examined and approved by the AeMC or AME. Contact lenses or full frame spectacles when either correct for near vision only may not be worn

(6) VXN—Have available corrective spectacles and a spare set of spectacles; correction for defective distant vision depending on the working environment

Correction for defective distant vision does not have to be worn if the air traffic controller's visual working environment is in the area of up to 100 cm. Applicants who do not meet the uncorrected distant and uncorrected near visual acuity requirements, but meet the visual acuity requirement for intermediate vision without correction and whose visual working environment is only the intermediate and near vision area (up to 100 cm) should have readily available spectacles and a spare set that correct for defective near vision as examined and approved by the AeMC or AME. Contact lenses or full frame spectacles when either correct for near vision only may not be worn.

(7) CCL — Wear contact lenses that correct for defective vision

Correction for defective distant vision: whilst exercising the privileges of the license, the holder of a medical certificate should wear contact lenses that correct for defective distant vision, as examined and approved by the AeMC or AME. A spare set of similarly correcting spectacles shall be readily available for immediate use whilst exercising the privileges of the license

(8) RXO — Specialist ophthalmological examinations

Specialist ophthalmological examination(s), other than the examinations stipulated in this Part, are required for a significant reason.

(9) HAL — Hearing aid(s)

Whilst exercising the privileges of the license, the holder of the medical certificate should use hearing aid(s) that compensate for defective hearing as examined and approved by the AeMC or CAA. A spare set of batteries should be available.

(10) SIC — Specific regular medical examination(s)

This limitation requires the AeMC or AME to contact the CAA before embarking upon renewal or revalidation medical assessment. It is likely to concern a medical history of which the AME should be aware prior to undertaking the assessment.

(11) SSL — Special restrictions as specified

This limitation may be considered when an individually specified limitation, not defined in this paragraph, is appropriate to mitigate an increased level of risk to the safe exercise of the privileges of the license. The description of the SSL should be entered on the medical certificate or in a separate document to be carried with the medical certificate

SECTION 2 – Medical Requirements for Class 3 ATC Medical Certificates

CAR FCL-3.770 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 performance of duties or could render the applicant likely to become suddenly unable to exercise the privileges of the license safely.

CAR FCL-3.775 Cardiovascular system

(a) ***General requirements***
  (1) A standard 12-lead resting electrocardiogram (ECG) and report shall be completed at the examination for the initial issue of a medical certificate and then:
    i. every 4 years until the age of 30
    ii. at all revalidation or renewal examinations thereafter; and
    iii. when clinically indicated.
  (2) An extended cardiovascular assessment shall be completed:
    i. when clinically indicated.
    ii. at the first revalidation or renewal examination at the age 60; and
    iii. every year thereafter.
  (3) Estimation of serum lipids, including cholesterol, shall be required at the examination for the initial issue of a medical certificate, at the first examination after having reached the age of 40, and every 5 years thereafter and when clinically indicated.
  (4) For Class 3 medical certificate, HBA1c shall be required at the first examination after having reached the age of forty (40), and every 5 years thereafter and when clinically indicated.

(b) ***Cardiovascular system — General***
  (1) Applicants for a Class 3 medical certificate with any of the following conditions shall be assessed as unfit:
    i. aneurysm of the thoracic or supra-renal abdominal aorta before surgery;
    ii. significant functional or symptomatic abnormality of any of the heart valves;
    iii. heart or heart/lung transplantation.
  (2) Applicants for a Class 3 medical certificate with an established history or diagnosis of any of the following conditions shall be referred to the licensing authority before a fit assessment may be considered:
    i. Peripheral arterial disease before or after surgery;
    ii. Aneurysm of the thoracic or supra-renal abdominal aorta after surgery;
    iii. Congenital abnormality of the heart, before or after corrective surgery;
    iv. Aneurysm of the infra-renal abdominal aorta before or after surgery;
    v. Functionally insignificant cardiac valvular abnormalities;
    vi. After cardiac valve surgery;
    vii. Abnormality of the pericardium, myocardium or endocardium
    viii. Recurrent vasovagal syncope;
    ix. Arterial or venous thrombosis;
    x. Pulmonary embolism;
    xi. Cardiovascular condition requiring systemic anticoagulant therapy.

(c) ***Blood pressure***

(1) Blood pressure shall be recorded at each examination.

(2) The applicant's blood pressure shall be within normal limits.

(3) Applicants for a Class 3 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 unfit assessment to establish the absence of significant side effects.

(d) ***Coronary artery disease***

(1) Applicants with any of the following conditions shall be assessed as unfit:

i. symptomatic coronary artery disease;

ii. symptoms of coronary artery disease controlled by medication

(2) Applicants for a Class 3 medical certificate with:

i. suspected myocardial ischemia;

ii. asymptomatic minor coronary artery disease requiring no anti-anginal treatment shall be referred to the CAA and undergo cardiological evaluation to exclude myocardial ischemia before a fit assessment may be considered.

(3) Applicants with a history or diagnosis of:

i. myocardial infarction;

ii. revascularization and stenting for coronary artery disease Shall be referred to the CAA and undergo a cardiological evaluation before a fit assessment may be considered

(e) ***Rhythm/Conduction disturbances***

(1) Applicants for a Class 3 medical certificate with any significant disturbance of cardiac conduction or rhythm, intermittent or established, 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. Brugada pattern on electrocardiography asymptomatic QT prolongation;

vii. shall be referred to the CAA and undergo cardiological evaluation with satisfactory results before a fit assessment may be considered.

(2) Applicants with any of the following:

i. incomplete bundle branch block;

ii. complete right bundle branch block;

iii. stable left axis deviation;

iv. first degree atrioventricular block;

v. asymptomatic sinus bradycardia;

vi. asymptomatic sinus tachycardia;

vii. asymptomatic isolated uniform supra-ventricular or ventricular ectopic complexes;

viii. Mobitz type 1 atrioventricular block may be assessed as fit in the absence of any other abnormality and subject to satisfactory cardiological evaluation.

(3) Applicants with a history of:

i. ablation therapy;

ii. pacemaker implantation shall be referred to the CAA and undergo cardiological evaluation with satisfactory results before a fit assessment may be considered.

(4) 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.

CAR FCL-3.780 Cardiovascular system

(a) ***Electrocardiography***

(1) An exercise electrocardiogram (ECG) when required as part of a cardiovascular assessment should be symptom limited and completed to a minimum of Bruce Stage IV or equivalent. It should be done by an approved CAA Cardiologist.

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

(3) The extended cardiovascular assessment should be undertaken by an approved Cardiologist

(b) ***General***

(1) Cardiovascular risk factor assessment
   i. Serum/plasma lipid estimation is case finding and significant abnormalities should require investigation and management under the supervision by the AeMC or AME in consultation with the CAA if necessary.
   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 CAA if necessary.

(2) Extended cardiovascular assessment
   i. The extended cardiovascular assessment should be undertaken by an approved CAA Cardiologist.
   ii. The extended cardiovascular assessment should include an exercise ECG or other test that will provide equivalent information

(c) ***Peripheral arterial disease***

Applicants with peripheral arterial disease, before or after surgery, should undergo satisfactory cardiological evaluation including an exercise ECG and 2D echocardiography. Further tests may be required which should show no evidence of myocardial ischemia or significant coronary artery stenosis. A fit assessment may be considered provided:

(1) exercise ECG is satisfactory; and

(2) there is no sign of significant coronary artery disease or evidence of significant atheroma elsewhere, and no functional impairment of the end organ supplied.

(d) ***Aortic aneurysm***

Applicants with an aneurysm of the infra-renal abdominal aorta may be assessed as fit Applicants may be assessed as fit after surgery for an infra-renal aortic aneurysm without complications and subject to being free of disease of the carotid and coronary circulation.

(e) ***Cardiac valvular abnormalities***

(1) Applicants with previously unrecognized cardiac murmurs should require cardiological evaluation. If considered significant, further investigation should 1) include at least 2D Doppler echocardiography.

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

(3) Aortic valve disease

i. Applicants with bicuspid aortic valve may be assessed as fit if no other cardiac or aortic abnormality is demonstrated. Regular cardiological follow up, including 2D Doppler echocardiography, may be required.

ii. Applicants with mild aortic stenosis may be assessed as fit. Annual cardiological follow-up may be required and should include 2D Doppler echocardiography.

iii. Applicants with aortic regurgitation may be assessed as fit only if regurgitation is minor and there is no evidence of volume overload. There should be no demonstrable abnormality of the ascending aorta on 2D Doppler echocardiography. Cardiological follow-up including 2D Doppler echocardiography may be required.

(4) Mitral valve disease

i. Applicants with rheumatic mitral stenosis may only be assessed as fit in favourable cases after cardiological evaluation including 2D echocardiography.

ii. Applicants with uncomplicated minor regurgitation may be assessed as fit.

iii. Regular cardiological follow-up including 2D echocardiography may be required.

iv. with mitral valve prolapse and mild mitral regurgitation may be assessed as fit.

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

(f) ***Valvular surgery***

(1) Applicants with cardiac valve replacement/repair should be assessed as unfit. After a satisfactory cardiological evaluation fit assessment may be considered.

(2) Asymptomatic applicants may be assessed as fit by the licensing authority 6 months after valvular surgery subject to:

i. normal valvular and ventricular function as judged by 2D Doppler echocardiography;

ii. satisfactory symptom limited exercise ECG or equivalent;

iii. demonstrated absence of coronary artery disease unless this has been satisfactorily treated by re-vascularization;

iv. no cardioactive medication is required;

v. annual cardiological follow-up to include an exercise ECG and 2D Doppler echocardiography. Longer periods may be acceptable once a stable condition has been confirmed by cardiological evaluations.

(3) Applicants with implanted mechanical valves may be assessed as fit subject to documented exemplary control of their anti-coagulant therapy. Age factors should form part of the risk assessment.

(g) ***Thromboembolic disorders***

Applicants with arterial or venous thrombosis or pulmonary embolism should be assessed as unfit during the first 6 months of anticoagulation. A fit assessment, with a limitation if necessary, may be considered by the CAA after 6 months of stable anticoagulation. 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 and the hemorrhagic risk is acceptable. Applicants with pulmonary embolism should also be evaluated by a cardiologist. Following cessation of anticoagulant therapy, for any indication, applicants should undergo a re-assessment by the CAA.

(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 following complete resolution and satisfactory cardiological evaluation which may include 2D Doppler echocardiography, exercise ECG, 24- hour ambulatory ECG, and/or myocardial

perfusion scan or equivalent test. Coronary angiography may be indicated. Regular cardiological follow-up may be required.

(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 following cardiological assessment. No cardioactive medication is acceptable. Investigations may include 2D Doppler echocardiography, exercise ECG and 24-hour ambulatory ECG. Regular cardiological follow-up may be required.

(i) ***Syncope***

(1) Applicants with a history of recurrent episodes of syncope should be assessed as unfit. A fit assessment may be considered after a sufficient period of time without recurrence provided cardiological evaluation is satisfactory.

(2) A cardiological evaluation should include:

i. a satisfactory symptom exercise ECG. If the exercise ECG is abnormal, a myocardial perfusion scan or equivalent test 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 ischemia;

iv. a tilt test carried out to a standard protocol showing no evidence of vasomotor instability.

(3) Neurological review should be required

(4) Applicants who experienced loss consciousness without significant warning should be assessed as unfit.

(j) ***Blood pressure***

(1) Anti-hypertensive treatment should be agreed by the CAA. Medication may include:

i. non-loop diuretic agents;

ii. Angiotensin Converting Enzyme (ACE) inhibitors;

iii. angiotensin II receptor blocking agents;

iv. long-acting slow channel calcium blocking agents;

v. certain (generally hydrophilic) beta-blocking agent

(2) 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 license held.

(k) ***Coronary artery disease***

(1) Applicants with chest pain of an uncertain cause should undergo a full investigation before a fit assessment may be considered. Applicants with angina pectoris should be assessed as unfit, whether or not it is abolished by medication.

(2) Applicants with suspected asymptomatic coronary artery disease should undergo a cardiological evaluation including exercise ECG. Further tests (myocardial perfusion scanning, stress echocardiography, coronary angiography or equivalent) may be required, which should show no evidence of myocardial ischemia or significant coronary artery stenosis.

(3) After an ischemic cardiac event, including revascularization, 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 ischemic myocardial event and a complete, detailed clinical report of the ischemic event and of any operative procedures should be available:
   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 revascularizations;
   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 six (6) months from the ischemic myocardial event, including revascularization, the following investigations should be completed:
   A. an exercise ECG showing neither evidence of myocardial ischaemia nor rhythm or conduction disturbance;
   B. an echocardiogram or equivalent test 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 equivalent test, 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 conducted annually (or more frequently, if necessary) to ensure that there is no deterioration of the cardiovascular status. It should include a cardiological evaluation, exercise ECG and cardiovascular risk assessment. Additional investigations may be required.

iv. After coronary artery vein bypass grafting, a myocardial perfusion scan or equivalent test should be performed on clinical indication, and in all cases within 5 years from the procedure.

v. In all cases, coronary angiography, or an equivalent test, should be considered at any time if symptoms, signs or non-invasive tests indicate myocardial ischemia.

vi. Applicants may be assessed as fit after successful completion of the 6- month or subsequent review with appropriate limitation

(l) ***Rhythm and conduction disturbances***

(1) Applicants with any significant rhythm or conduction disturbance may be assessed as fit after cardiological evaluation and with appropriate follow-up. Such evaluation should include:

i. exercise ECG which should show no significant abnormality of rhythm or conduction, and no evidence of myocardial ischemia. Withdrawal of cardioactive medication prior to the test should be required;

ii. 4-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:

iv. 24-hour ECG recording repeated as necessary;

v. electrophysiological study;

vi. myocardial perfusion imaging or equivalent test;
vii. cardiac magnetic resonance imaging (MRI) or equivalent test;
viii. coronary angiogram or equivalent test.

(2) Applicants with supraventricular or ventricular ectopic complexes on a resting ECG may require no further evaluation, provided the frequency can be shown to be no greater than one per minute, for example on an extended ECG strip. The evaluation should be done by an approved CAA Cardiologist.

(3) Applicants with asymptomatic isolated uniform ventricular ectopic complexes may be assessed as fit but frequent or complex forms require full cardiological evaluation.

(4) Ablation

i. Applicants who have undergone ablation therapy should be assessed as unfit for a minimum period of 2 months.
ii. A fit assessment may be considered following successful catheter ablation provided an electrophysiological study (EPS) demonstrates satisfactory control has been achieved
iii. Where EPS is not performed, longer periods of unfitness and cardiological follow-up should be considered. Follow-up should include a cardiological review.

(5) 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 if cardiological evaluation is satisfactory.

i. For initial applicants with atrial fibrillation/flutter a fit assessment should be limited to those with a single episode of arrhythmia which is considered to be unlikely to recur.
ii. Applicants with asymptomatic sinus pauses up to 2.5 seconds on a resting ECG may be assessed as fit if exercise ECG, 2D echocardiography and 24- hour ambulatory ECG are satisfactory.
iii. Applicants with symptomatic sino-atrial disease should be assessed as unfit.

(6) Mobitztype 2 atrio-ventricular block

Applicants with Mobitz type 2 AV block may be assessed as fit after a full cardiological evaluation confirms the absence of distal conducting tissue disease.

(7) Complete right bundle branch block

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

(8) Complete left bundle branch block

A fit assessment may be considered:

i. Initial applicants may be assessed as fit after full cardiological evaluation showing no pathology. Depending on the clinical situation, a period of stability may be required.
ii. Applicants for revalidation or renewal of a medical certificate with a de-novo left bundle branch block may be assessed as fit after cardiological evaluation showing no pathology. A period of stability may be required.
iii. A cardiological evaluation should be required after 12 months in all cases.

(9) Ventricular pre-excitation

Applicants with pre-excitation may be assessed as fit if they are asymptomatic, and an electrophysiological study, including an adequate drug-induced autonomic stimulation protocol, reveals no inducible re-entry tachycardia and the existence of multiple pathways is excluded. Cardiological follow-up should be required including a 24 hour ambulatory ECG recording showing no tendency to symptomatic or asymptomatic tachy-arrhythmia.

(10) Pacemaker

i. Applicants with a subendocardial pacemaker may be assessed as fit 3 months after insertion provided:
ii. there is no other disqualifying condition;
iii. bipolar lead systems programmed in bipolar mode without automatic mode change have been used;
iv. that the applicant is not pacemaker dependent;
v. regular cardiological follow-up should include a symptom limited exercise ECG that shows no abnormality or evidence of myocardial ischaemia

(11) QT prolongation
Applicants with QT-prolongation require cardiological evaluation. A fit assessment may be considered in asymptomatic applicants.

CAR FCL-3.785 Cardiovascular system assessment

(a) Cardiovascular risk assessment:
Indication:
(1) Hypertension
(2) Hyperlipidemia
(3) Diabetes
(4) Smoking
(5) Obesity, and lack of exercise
(6) Adults 45–74 years without known history of CVD.
(7) The Metabolic Syndrome (hypertension, hyperlipidemia, insulin resistance and truncal obesity) carries a significantly increased risk of such event.
(8) Obstructive Sleep Apnea

(b) Method for CVD risk assessment
(1) Test required for assessment include but are not limited to Lipid profile, Check for blood pressure, random blood glucose and HBA1c and ultrasensitive CRP
(2) The AME should use internationally recognized calculators/charts/or score cards for the estimation of CVD.

The preferred calculator for the CAA medical examination is as below; this calculator considers all the risks factors – the modifiable and non-modifiable:
https://patient.info/doctor/cardiovascular-risk-assessment

(c) Assessing and management of the cardiovascular risks
(1) Risk group less than 10% risk over 10 years
The license 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.
(2) Risk group 10-20% over 10 years:
i. Modifiable risk factors should be addressed in conjunction with adjustment of current or the addition of approved prevention medications e.g. Statins
ii. After the control of the modifiable risk factors, if the calculated risk remains in the intermediate zone, further cardiac evaluation by an approved cardiologist should be required.
iii. 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.
(3) 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)
i. The license holder should be grounded

ii. An approved cardiac consultation will be required with further cardiac evaluation to rule out any significant risk of ischemic heart events changes.
iii. All the modifiable risk factor should be discussed with the applicant and a management strategy detailed in the report to the licensing authority.
iv. On satisfactory the medical certificate may be issued with OML restriction and cardiology follow up as detailed by the approved cardiologist.

CAR FCL-3.790 Cardiovascular system – Valvular Heart Disease

(a) **Bicuspid Aortic Valve**

(1) 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.

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

(b) **Aortic Stenosis**

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

(1) Investigations required for recertification are:
   i. Routine aviation medical examination
   ii. Approved cardiologist's assessment and risk calculation
   iii. Standard 24 lead ECG
   iv. Doppler echocardiogram
   v. Other investigations as necessary

(2) Aeromedical Disposition
   i. Echocardiography
      - The systolic function should be normal (EF >60%) and aortic valve calcification should be minimal.
      - The principle measurement to determine medical certification of ATCO with Aortic stenosis is aortic valve area during Echocardiography. Based on European Sociality of Cardiology Guidelines:

Valve Area	Mean Aortic Gradient	Severity	Certification
>1.5cm^2	0-30 mmhg	mild	Fit class3
1-1.5cm^2	30-50 mmhg	moderate	Fit class3
<1.5 cm^2	>50 mmhg	severe	unfit

      - Indexing valve area to Body Surface Area (BSA) can be useful in cases of unusually large or small BSA – (Moderate 0.6- 9 cm^2/ m ^{2}; severe < 0.6 cm^2 / cm^2)
      - other factors to be considered in each case, including:
         - left ventricular Hypertrophy
         - reduced left ventricular diastolic function
         - reduced left ventricular ejection fraction
         - aortic regurgitation
   ii. A history of transient ischemic attack (TIA) disqualifies for all classes of certification

(3) Subsequent Reviews

At annual intervals:
   i. Routine aviation medical examination
   ii. Approved cardiologist review

iii. Standard 24 lead ECG
iv. Doppler echocardiogram

(c) **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 CAA and advise the applicant not to exercise the privileges of his license until cleared to do so by CAA. This will not be considered until all investigations have been completed and results assessed as satisfactory to the CAA.

(1) Investigations required for recertification are:
i. Routine aviation medical examination
ii. Approved cardiologist's assessment
iii. Standard 24 lead ECG
iv. Doppler echocardiogram
v. Exercise ECG to Bruce protocols or equivalent
vi. Minor regurgitation in the absence of aortic root disease may be compatible with fit assessment for all the classes.
vii. Co-existent dilatation of the aortic root >4.5 cm is disqualifying.
viii. Evidence of volume overloading of the left ventricle (left ventricular end diastolic dilatation >6.0cm) is disqualifying although minor increase in the left ventricular end diastolic diameter may be acceptable with Class 3.

(2) Subsequent Reviews
i. At annual intervals:
ii. Routine aviation medical examination
iii. Approved cardiologist review
iv. Standard 24 lead ECG
v. Doppler echocardiogram

(d) **Mitral valve disease**

(1) Investigations required for recertification are:
i. Routine aviation medical examination
ii. Approved cardiologist's assessment
iii. Standard 24 lead ECG
iv. Doppler echocardiogram
v. Exercise ECG to Bruce protocols or equivalent

(2) Recertification
i. Minor regurgitation or mitral valve prolapse only in the absence of thickened leaflets or flail chordae and left atrial internal diameter less than or equal to 4.0 cm, may be compatible with fit assessment for Class 3
ii. Moderate regurgitation will be fit for Class 3
iii. Severe regurgitation, indicated by any of the following will not be fit for Class 3:
A. LV internal diameter (diastole) > 6.0 cm; or
B. LV internal diameter (systole) > 4.1 cm; or
C. Left atrial internal diameter > 4.5 cm.
iv. Doppler indices, such as width of jet, backwards extension and whether there is flow reversal in the pulmonary veins may be helpful in assessing severity of regurgitation.

(3) Subsequent Reviews
At annual intervals:

i. Routine aviation medical examination
ii. Approved cardiologist review
iii. Doppler echocardiogram
iv. Other investigation if necessary

(e) **Aortic Valve replacement**
The CAA may certificate ATCO with tissue or mechanical valves after comprehensive assessment by an approved CAA Cardiologist.
(1) If mechanical valve, there must be exemplary control of anticoagulant therapy and age should form part of the risk assessment.
(2) The ATCO should not have cardiac symptoms and on acceptable cardiac medication.
(3) Exercise ECG - Bruce protocol and symptom limited. Requirements are at least
(4) Any abnormality may require further investigation such as myocardial perfusion scanning.
(5) If coronary artery surgery was performed at the same time as the valve replacement, the appropriate post-CABG protocol will need to be completed as well.
(6) Echocardiogram - The valve should be functioning normally. Left ventricular size and function should show appropriate improvement compared with pre-operative measurements
(7) Annual cardiological review to include an exercise ECG and echocardiography

CAR FCL-3.795 Cardiovascular system – Ventricular Pre-Excitation (WPW)

(a) initial applicant with pre-excitation will not be issued with CAA medical certificate.

(b) Asymptomatic applicants with pre-excitation may be assessed as fit at revalidation with an appropriate limitation if they meet the following criteria:
(1) Exercise ECG – Bruce protocol and symptom limited;
(2) Twenty-four (24) hour ECG – No significant rhythm or conduction disturbance.
(3) Echocardiogram- structurally normal heart and normal lV and RV function

(c) Electrophysiological studies, should be done on all cases upon diagnosis and should include an isoprenaline/adrenaline infusion sufficient to increase the sinus rate by 25%, and the following criteria should be met:
(1) HV interval < 70 ms
(2) No inducible atrio-ventricular re-entry tachycardia
(3) An antegrade refractory period of accessory pathway >300 ms (>250 msec with isoprenaline)
(4) delta-delta interval during atrial fibrillation >300 ms (>250 msec with isoprenaline)
(5) Cycle length with 1:1 accessory pathway conduction >300 ms (>250 msec with isoprenaline)
(6) No evidence of multiple pathways

CAR FCL-3.800 Cardiovascular system – Post Catheter Ablation of Pre-excitation (WPW) syndrome or atrioventricular nodal re-entry tachycardia (AVNRT)

(a) Investigations required for recertification are:
(1) Routine aviation medical examination
(2) Approved cardiologist's assessment, without a history of arrhythmia (Tachycardia or Atrial Fibrillation)

(3) Exercise ECG to Bruce protocols up to stage 4, symptom limited, should be achieved and no significant abnormality of rhythm or conduction or evidence of myocardial ischemia should be demonstrable. Withdrawal of cardio-active medication prior to the test should be considered.
(4) 24 hour ECG without evidence of significant rhythm or conduction disturbance
(5) Echocardiogram -no significant selective chamber enlargement or significant structural or functional abnormality and left ventricular ejection fraction of at least 50%
(6) Electrophysiological studies required for applicant with a history of significant tachycardia (syncope or hemodynamic compromise).
In case of Pre-excitation - no evidence of accessory pathway, conduction pre or post isoprenaline/adrenaline. For PWP where antegrade conduction was present pre-ablation, a satisfactory adenosine test may be sufficient.
AVNRT – No inducible tachycardia pre or post isoprenaline/adrenaline. Dual pathways and single echoes acceptable
(7) Further tests may be requested if needed according to cardiologist decision

(b) Recertification
(1) Applicants who have undergone successful ablation therapy should be assessed as fit Class 3.
(2) Applicants who have undergone ablation and in whom a EPS is required, a fit assessment may be considered by the CAA following successful catheter ablation and satisfactory post ablation EPS (undertaken at a minimum of 2 months after the ablation),
(3) Applicant who have undergone successful ablation and in whom a EPS is required, and the applicant elect not to have a post ablation EPS, will be assessed as fit Class 3 after one (1) year with satisfactory cardiac review.

CAR FCL-3.805 Cardiovascular system – Complete Left Bundle Branch Block

(a) investigation required for recertification
(1) Exercise ECG - Bruce protocol and symptom limited. Requirements are at least 9 minutes and no significant ECG (apart from LBBB) or blood pressure changes.
(2) Twenty-four (24) hour ECG - No significant rhythm or conduction disturbance apart from LBBB
(3) Echocardiogram - Structurally normal heart and normal LV and RV function (ejection fraction > 50%).
(4) Coronary artery investigation - shall be required in all applicants over the age of 40.
(5) A myocardial perfusion scan will normally be sufficient (Pharmacological stress should be used to avoid difficulties in the interpretation of septal perfusion).
(6) EPS studies - should be performed if the PR interval is >200 msec, and possibly if the ECG shows an abnormal axis. The HV interval should be less than 100 msec.

(b) Recertification
(1) Satisfactory investigations will allow Class 3 renewal/revalidation certification.
(2) Initial Class 3 applicants will need to show a one (1) year period of stability, as above, before a certificate can be issued.
(3) Require annual cardiology review and other requirements if deemed necessary

Note: ATCOs with long standing LBBB should expect to be asked to have occasional cardiology reviews to check that all remains well.

CAR FCL-3.810 Cardiovascular system – Pacemaker

Requirements: The CAA may permit ATCO with pacemaker provided that the:

(a) Pacemaker is bipolar lead system and non-dependence shown by a satisfactory underlying rhythm
(b) Exercise ECG to the Bruce protocol or equivalent. The test should be to maximum effort or symptom limited. Bruce stage 4 should be achieved and no significant abnormality of rhythm or conduction, nor evidence of myocardial ischemia shall be demonstrated. Withdrawal of cardio-active medication prior to the test should be considered.
(c) Twenty-four (24) hour ambulatory ECG which shall demonstrate no significant rhythm or conduction disturbance - Echocardiogram which shall show no significant selective chamber enlargement, or significant structural or functional abnormality, and a left ventricular ejection fraction of at least 50%.
(d) Follow-up will be a minimum of a six monthly pacemaker check and an annual cardiology review and Holter monitoring if indicated.

Note 1: Experience has shown that any failures of pacemakers are most likely to occur in the first. 3 months after being fitted. Therefore, a fit assessment should not be considered before this period has elapsed.

Note 2: It is known that certain operational equipment may interfere with the performance of the pacemaker. The type of pacemaker used, therefore, should have been tested to ensure it does not suffer from interference in the operational environment. Supporting data and a performance statement to this effect should be available from the supplier.

CAR FCL-3.815 Cardiovascular system – Hypertension

(a) Evaluation required for recertification
  (1) Documentation of good blood pressure control which require 24 hour BP check at initial diagnosis and after Successful treatment, without significant side effects, this should be confirmed by undertaking a repeat twenty-four (24) hr BP check no sooner than ten (10) days after starting treatment
  (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, HBA1c and renal function test,
    iii. Full blood count,
    iv. Liver function tests
    v. Carbohydrate deficient transferrin
    vi. Urine micro albumin vii. Standard 12 lead ECG
    vii. Cardiac echo
    viii. 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 apnea
    xi. Any pathology detected will require specialist evaluation and risk mitigation

(b) Subsequent review annually
  (1) Lipid levels- cholesterol, LDL, HDL, Total cholesterol/ HDL ratio,
  (2) Triglycerides
  (3) Random blood glucose and HBA1c
  (4) renal function test
  (5) Standard 12 lead ECG& Echocardiogram
  (6) Urine micro albumin level

(7) Comment on evidence for hypertensive Fundoscopic findings
(8) Documentation of good blood pressure control (from clinic visit or daily review of the record from B.P measurement machine)

(c) Aeromedical consideration
(1) The diagnosis of uncontrolled hypertension is disqualifying
(2) Unrestricted waiver is possible if
(3) adequate control of blood pressure is achieved (BP <140/90)
(4) There is no evidence of end-organ damage,
(5) There is no significant medication side effects
(6) There is absence of other cardiovascular risk factors.
(7) The addition of any appropriate limitation may be required on case by case basis

CAR FCL-3.820 Cardiovascular system - Atrial Fibrillation

(a) investigations for recertification are:
(1) Routine aviation medical examination
(2) An approved cardiologist's assessment which should include the following tests (Thyroid function test, full blood count, liver function tests and carbohydrate deficient transferrin)
(3) Exercise ECG
(4) Twenty-four (24) hours ECG more than one may be required), the following criteria should be met:
i. If in sinus rhythm (i.e. single original episode of AF) No episode of AF and no pause >2.5 secs whilst awake.
ii. In the presence of established atrial fibrillation, the RR interval > 300 msecs and < 3.5 secs (i.e. no very rapid rates or long pauses). Ventricular arrhythmia should not exceed an aberrant beat count >2% of the total, with no complex forms.
iii. Paroxysmal Atrial Fibrillation, as above plus the longest pause on recapture of sinus rhythm should not exceed 2.5 sec whilst awake.
(5) Echocardiogram should 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.
(6) Further tests may be requested if needed according to cardiologist decision.

(b) Aeromedical Disposition
(1) 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.
(2) If suppression of the attacks is incomplete, or if/when atrial fibrillation becomes established, the CAA 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 CAA, a fit assessment for Class 3 may be permitted.
(3) 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. The acceptable treatment includes sotalol or other beta – blocking drugs, verapamil and digitalis. Exceptionally flecainide or propafenone may be used. Amiodarone may be acceptable at a maximum dose of 200mg daily, subject to satisfactory ophthalmologist review to include assessment of contrast sensitivity. Anticoagulation is not acceptable

(c) Subsequent reviews every six months for a minimum of 2 years should include:
(1) Routine aviation medical examination
(2) An approved cardiologist review
(3) Twenty-four (24) hour ECG monitoring

CAR FCL-3.825 Respiratory system – General

(a) Applicants for a Class 3 medical certificate with significant impairment of pulmonary function shall be referred to the CAA for the aero-medical assessment. A fit assessment may be considered once pulmonary function has recovered and is satisfactory.

(b) Examination
Pulmonary function tests are required at the initial examination and on clinical indication.

(c) Applicants with a history or established diagnosis of asthma requiring medication shall undergo a satisfactory respiratory evaluation. A fit assessment may be considered if the applicant is asymptomatic and treatment does not affect safety.

(d) Applicants with a history or established diagnosis of:
(1) active inflammatory disease of the respiratory system;
(2) active sarcoidosis;
(3) pneumothorax;
(4) sleep apnea syndrome;
(5) major thoracic surgery;
(6) chronic obstructive pulmonary disease;
(7) lung transplantation

shall be referred to the CAA and undergo respiratory evaluation with a satisfactory result before a fit assessment may be considered. Applicants with an established diagnosis of the conditions specified in (2) and (4) shall undergo satisfactory cardiological evaluation before a fit assessment can be considered.

CAR FCL-3.830 Respiratory system – Assessment

(a) Examination
Spirometric examination is required for initial examination. An FEV1/FVC ratio less than 70 % should require evaluation by a specialist in respiratory disease before a fit assessment can be considered.

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 after specialist respiratory evaluation. Applicants with pulmonary emphysema may be assessed as fit following specialist evaluation showing that the condition is stable and not causing significant symptoms.

(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 the safe execution of the privileges of the applicable license. Use of low dose systemic steroids may be acceptable.

(d) Inflammatory disease
(1) 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.
(2) Applicants with chronic inflammatory diseases may be assessed as fit following specialist evaluation showing mild disease with acceptable pulmonary function test and medication compatible with the safe execution of the privileges of the applicable license.

(e) Sarcoidosis

(1) Applicants with active sarcoidosis should be assessed as unfit. Specialist evaluation 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 limited to hilar lymphadenopathy and inactive. Use of low dose systemic steroids may be acceptable.
(2) Applicants with cardiac or neurological sarcoid should be assessed as unfit.

(f) Pneumothorax
Applicants with a spontaneous pneumothorax should be assessed as unfit. A fit assessment may be considered:
(1) 6 weeks after the event provided full recovery from a single event has been confirmed in a full respiratory evaluation including a CT scan or equivalent;
(2) following surgical intervention in the case of a recurrent pneumothorax provided there is satisfactory recovery.

(g) Thoracic surgery
(1) Applicants requiring 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 license.
(2) A fit assessment may be considered after satisfactory recovery and full respiratory evaluation including a CT scan or equivalent. The underlying pathology which necessitated the surgery should be considered in the assessment process. (CAA Referral for Special issuance)

(h) Sleep apnoea syndrome/sleep disorder
(1) Applicants with unsatisfactorily treated sleep apnoea syndrome and suffering from excessive daytime sleepiness should be assessed as unfit.
(2) A fit assessment may be considered (CAA Referral for SODA) subject to the extent of symptoms, including vigilance, and satisfactory treatment. ATCO education and work place considerations are essential components of the assessment.

CAR FCL-3.835 Respiratory system – OSA Screening

(a) OSA Screening is usually indicated in:
(1) History of Excessive Daytime Sleepiness
(2) History of Snoring
(3) Witnessed apnea
(4) Resistant /uncontrolled Hypertension,
(5) Uncontrolled Diabetes
(6) Metabolic Syndrome
(7) Obesity, BMI> 35
(8) Significant weight gain (10% increase in total body weight)
(9) A high neck circumference >40 cm
(10) Complaints of frequent nocturnal awakenings
(11) Complaints of difficulty concentrating
(12) Complaints of problems with memory
(13) Complaints of daytime sleepiness
(14) Complaints of fatigue
(15) Complaints of low mood
(16) Complaints of erectile dysfunction
(17) Stop Bang questionnaire score of ≥3
(18) Epworth sleep score ≥10

Methods of Objective screening:

(1) Physical examination including, vital signs (blood pressure, pulse, respiration); height, weight, and body mass index (BMI), neck circumference, ear, nose, and throat examination thyroid assessment; cardiovascular; pulmonary assessment, and psychological assessment for presence of mood disorder; if clinically indicated.

(2) 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 apnea. ESS of ≥10, considered indicative of pathological sleepiness and specialist referral is required. Refer to Appendix-V.

(3) 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 apnea which requires further assessment by specialist. Refer to Appendix-VI

(4) The gold standard diagnostic test is; nocturnal full polysomnographic attended by technologist diagnostic testing (Type-1 Sleep Study).

(5) When the diagnosis is suspected, the AME must refer the applicant for sleep 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.

(6) The CAA accepts the use of CPAP (Continuous Positive Airway Pressure) as an appropriate treatment for Obstructive Sleep Apnea. The machine must have the ability for data capture ensure compliance. Other methods of treatment including positional therapy and 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 CAA protocols in addition.

(7) The applicant should have documentary advice to lose at least 5% of the current weight over the following year.

(8) The minimum grounding period of two (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 four 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 the CAA for Aeromedical section for reinstatement of the applicant.

(9) The CAA will issue the medical certificate with SIC restriction.

(10) Follow up recommendations, will include 6 monthly Specialist review and 3 monthly AME review to check for compliance, weight loss and other medical conditions which require periodic review. For those managed with dental splinting, in addition to the specialist review, they would require a Dental assessment every six months to check on compliance and fitting.

(11) 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

(12) The CAA will not consider removal of the SIC restriction, until the time when the applicant's medical condition satisfactory controlled, and all associated risk factors are eliminated or controlled.

(13) 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.

CAR FCL-3.840 Digestive system – General

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

(b) Applicants shall be free from hernia that might give rise to incapacitating symptoms.

(c) Applicants with disorders of the gastrointestinal 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 may be assessed as fit SAME subject to a satisfactory gastroenterological evaluation after successful treatment or full recovery after surgery.

CAR FCL-3.845 Digestive system – Assessments

(a) Esophageal varices
Applicants with esophageal varices should be assessed as unfit.

(b) Pancreatitis
   (1) 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.
   (2) Alcohol may be a cause of dyspepsia and pancreatitis. If considered appropriate, a full evaluation of its use/abuse should be required. (cross reference to alcohol screening protocol in -FCL-3).

(c) Gallstones
   (1) Applicants with a single large gallstone may be assessed as fit after evaluation.
   (2) Applicants with multiple gallstones may be assessed as fit while awaiting assessment or treatment provided the symptoms are unlikely to interfere with flight safety.
   (3) Applicant with Small multiple asymptomatic stones with functional gallbladder may cause colic and potential incapacitation and are disqualifying until adequately treated.

(d) Inflammatory bowel disease
Applicants with an established diagnosis or history of chronic inflammatory bowel disease may be assessed as fit if the disease is in established stable remission, and only minimal, if any, medication is being taken. Regular follow-up should be required.

(e) Dyspepsia
Applicants with recurrent dyspepsia requiring medication should be investigated by internal examination including radiologic or endoscopic examination. Laboratory testing should include hemoglobin assessment and fecal examination. Any demonstrated ulceration or significant inflammation requires evidence of recovery before a fit assessment may be considered

(f) Abdominal surgery
Applicants, who have undergone a surgical operation on the digestive tract or its adnexa, including a total or partial excision or a diversion of any of these organs, should be assessed as unfit. A fit assessment BY SAME may be considered if recovery is complete, the applicant is asymptomatic, and the risk of secondary complication or recurrence is minimal.

CAR FCL-3.850 Metabolic and Endocrine Systems – General

(a) 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) Diabetes mellitus
  (1) Applicants with diabetes mellitus requiring insulin shall be assessed as unfit.
  (2) Applicants with diabetes mellitus requiring medication other than insulin for blood sugar control shall be referred to the CAA FOR SIC. A fit assessment may be considered if it can be demonstrated that blood sugar control has been achieved and is stable.

CAR FCL-3.855 Metabolic and endocrine system – Assessments

(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
  (1) 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 license(s) and a satisfactory cardiovascular risk review has been undertaken. The presence of sleep apnea syndrome should be ruled out.
  (2) Functional testing in the working environment may be necessary before a fit assessment may be considered.

(c) Thyroid dysfunction
Applicants with hyperthyroidism or hypothyroidism should attain a stable euthyroid state before a fit assessment may be considered.

(d) 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.

(e) Diabetes mellitus
  (1) The following medication, alone and in combination, may be acceptable for control of Type-2 diabetes:
    i. alpha-glucosidase inhibitors;
    ii. medication that acts on the incretin pathway;
    iii. biguanides
  (2) A fit assessment may be considered after evaluation of the operational environment, including means of glucose monitoring/management whilst performing rated duties, and with demonstrated exemplary glycaemic control.
  (3) Annual follow-up by a specialist should be required including demonstration of absence of complications, good glycaemic control demonstrated by six (6) monthly Hb1c measurements, and a normal exercise tolerance test. (cross reference to -FCL-3

CAR FCL-3.860 Metabolic and endocrine system – Specific Conditions

1. Obesity

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

1 .1.1 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.

1 .1.2 Waist circumference and waist hip ratio

Waist circumference is the distance around the natural waist (just above the navel). (The tape should 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 ratio.

1 .1.3 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.

1 .1.4 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).

1.2 Aeromedical Disposition

For the CAA medical certification purpose the definition of obesity include:

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

(a) Obese applicant with incapacitation risk of >1%, should be suspended and required full cardiology assessment and enter a weight management program which should include dietary advice, an increased exercise regime and regular three (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 should be monitored and controlled. Obese applicant with incapacitation risk of less than 1% still needs advice on weight management.

(b) Obese applicants who are otherwise well and can exercise the privileges of a license safely will be certificated without restriction.

(c) Obese Individual with OSA should be managed as per the protocol of OSA.

(d) The nature of operating environment in relation to the BMI should also be considered. A functional assessment may be required if the ATCO with BMI of thirty-five (35) or more fails to lose weight over six (6) months period, or even gain more weight, the ATCO will need to

undergo a workplace assessment with their supervisor to ensure that they can work without restriction and evacuate their workplace quickly in the event of an emergency. This is particularly important if the ATCO is based in a control tower or remote location.

(e) 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.

(f) Failure to comply with any or all of these points may lead to permanent unfitness.

1.3 Treatment that affect Medical certification

1.3.1 Medication

Orlistat or other medications which reduce the absorption of dietary fat, when combined with a change in lifestyle, can be used to treat obesity in individuals with a BMI in excess of 30 or in excess of 28 if other risk factors such as hypertension, diabetes or high cholesterol are present.

ATCO elected to use this medication should inform the AME about its use and should be grounded for at least two weeks to ensure absence of adverse effects from the medication. Side effects might include flatulence, oily or leaky stools and abdominal pain and bloating, headaches and anxiety.

Note: Appetite suppressants are disqualifying for medical certification, and they are not recommended for the treatment of obesity.

1.3.2 Surgery

Bariatric surgery promotes weight loss by altering the anatomy of digestive system and limiting the amount of food that can be eaten/digested e.g. gastric bypass, Sleeve Gastrectomy or gastric banding. It is a major procedure that is usually considered as an option if an individual's BMI is 40 or more, or between 35 and 40 if other risk factors that could be improved by a reduction in weight are present. Other criteria also need to be fulfilled and this option should be discussed with the Specialists.

If it is deemed an acceptable for treatment for the ATCO, he/she should notify the AME to suspend him/her for a period of up to three (3) months post-surgery which will be dependent upon the type of procedure performed and the recovery. Endoscopic procedures will significantly reduce this period.

Detailed reports will be required to confirm that the ATCO made a full recovery from the procedure, are not experiencing any incapacitating side effects and a final assessment with the AME will be required before returning the ATCO to controlling duties again. Any other treatment or procedure that the ATCO might be considering must be discussed with the AME.

2. Thyroid

(a) Initial applicants with an established diagnosis of thyroid dysfunction will have the issue of their medical certificate referred until acceptable reports have been received. On diagnosis of thyroid dysfunction, a certificate holder shall be assessed as unfit.

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

(c) An annual report as detailed above will be submitted to the AME for review.

(d) All changes in management will be notified to an AME and the ATCO will be assessed as unfit until clinically euthyroid and a satisfactory report has been received.

2.1 Hypothyroidism

Any changes in management, including medication changes, must be notified to the AME. If the certificate holder is asymptomatic then no suspension period will be required for minor (up to 25mcg) changes in dose of thyroxine. If any symptoms are present then the ATCO will be assessed as unfit until symptom free.

2.2 Hyperthyroidism

(a) Anti-thyroid drugs in the absence of side-effects are not disqualifying.

(b) Class 3 holders will undergo review with an ophthalmic specialist to ensure satisfactory eye movements and no diplopia. If normal, a fit assessment can be made by the AME, otherwise review by the CAA Medical Assessor will be required for SIC.

2.3 Thyroidectomy

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

(b) 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.

2.4 Radioactive Iodine Treatment

The ATCO 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 test confirming euthyroid status.

3. Diabetes Mellitus

3.1 Diagnostic criteria

	Fasting	**2 hours post prandial**
Normal <120/mg/100 ml	<6.1 mmol/1 <110 mg/100/ml	< 7.8 mmol/l <140 mg/100/ml
Impaired glucose regulation	>6.1-6.9mmol/l or	>7.8- 11mmol/l
Diabetes Mellitus	>7mmol/l >120 mg/100/ml	>11.1 mmol/l >180 mg/ 100/ml

3.2 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 Auto-immune 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 hyperinsulinemia with insulin resistance. Rarely if ever ketotic. Onset 40+ There is a non-obese sub-group which have different aethiology and family aggregation.

3.3 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.

3.4 Management of Diabetes Mellitus

3.4.1 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.

3.4.2 Certification

(a) 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 should inform the license holders about all possible outcome of this condition and should 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.

(b) 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.

(c) Insulin use is disqualifying from all the classes of medical.

(d) The use of oral hypoglycemic drugs may be acceptable for controlling duties with certain limitation with its use as a single agent (e.g. Biguanides, Thiazolidinedione or Alphaglucosidase inhibitors and Sitagliptin).

(e) Combination of agents may be considered on a case by case basis in coordination with the CAA Medical Assessor, provided there is no evidence of hypoglycemia.

3.4.3 Anti diabetic medications:

Medication	*Class 3*
Biguanides	*Yes, (with SIC limitation if applicable)*
Alpha-glucosidase Inhibitors	*Yes, (with SIC limitation if applicable) if used as single therapy*
Sulphonylureas	*Not acceptable*
Pioglitazone	*Acceptable if unable to tolerate Metformin on a case by case basis*
Repaglinide	*Not acceptable*
Sitagliptin	*Acceptable if unable to tolerate Metformin /or combination with Metformin on a case by case basis*

3.4.4 Initial assessment

(a) At the time of diagnosis of Type 2 Diabetes mellitus, the CAA requires the following evaluations to be done:
   (1) Careful examination to exclude common complications of diabetes including neuropathy
   (2) HbA1c should be >7 %
   (3) Blood Glucose should be reasonably controlled
   (4) BMI level, and determine the desired goal (BMI of <25 IS THE TARGET)
   (5) Diabetes Mellitus should be treated as high risk for cardiovascular disease and all modifiable risk factors should be managed aggressively.
   (6) Blood tests including HBA1c, renal function, liver function and lipids.
   (7) A CAA extended eye examination.
   (8) ECG at the time of diagnosis
   (9) An approved cardiologist consultation
   (10) Urine microalbuminuria

(b) single medication is required to control blood glucose level the ATCO should be suspended for 30 day ground trial to ensure good glycaemic control, minimal side-effects & a HBA1c > 7% If single medication fails to adequately control blood glucose levels , and addition of other agent is required the ATCO will be further suspended for period of 30 days ;to ensure no hypoglycemic episodes, no additional other side-effects, good glycemic control, a falling HBA1c and or HbA1c >7%

Note 1: To provide a complete record of blood glucose monitoring to AME - random daily record for a minimum 30 days ideally via a data card.

Note 2: occasionally the CAA may reinstate a pilot whom HBA1C is > 7% if a significant fall in the level of HBA1C is documented from the date of diagnosis; however, his subsequent follow up HBA1C should remain under satisfactory control.

3.4.5 Follow up for cases of Type 2 diabetes mellitus

(a) 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.

(b) Periodic tests including renal function, blood lipids and urinary tests for detecting early renal damage (microalbuminuria)

(c) Annual CAA approved ophthalmologist review.

(d) CNS and foot examination for evidence of neuropathy; either by neurologist, family physician or AME.

(e) Approved Cardiology review.

Note: The CAA may on individual cases permit the use of a medications not listed above for Diabetes treatment provided the risk assessment performed on the case is satisfactory

CAR FCL-3.865 Hematology

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

(b) Full blood count shall be tested at initial issue of a medical certificate; and thereafter Full blood count test shall be determined by the AME or AeMC taking into account the medical history and following the physical examination.

(c) Applicants with a hematological condition, such as:
   (1) coagulation, hemorrhagic or thrombotic disorder;
   (2) chronic leukemia;
   (3) abnormal hemoglobin, including, but not limited to, anemia related to abnormal hemoglobin, erythrocytosis or haemoglobinopathy;
   (4) significant lymphatic enlargement;
   (5) enlargement of the spleen shall be referred to the CAA. A fit assessment may be considered subject to satisfactory aero-medical evaluation.

(d) Applicants suffering from acute leukaemia shall be assessed as unfit.
   (1) Anemia
      i. Anemia demonstrated by a reduced hemoglobin level or Hematocrit less than 32% should 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 hemoglobin or hematocrit has stabilized at a satisfactory level.
      ii. Anaemia which is unamenable to treatment should be disqualifying.
   (2) Haemoglobinopathy
      i. Applicants with a haemoglobinopathy should be assessed as unfit. A fit assessment maybe considered where minor thalassaemia, sickle cell disease or other haemoglobinopathy is diagnosed without a history of crises and where full functional capability is demonstrated.
   (3) Coagulation disorders
      i. Significant coagulation disorders require investigation. A fit assessment may be considered if there is no history of significant bleeding or clotting episodes and the hematological data indicate that it is safe to do so.
      ii. If anticoagulant therapy is prescribed, CAR--FCL-33 ATC .4.2 Cardiovascular system(g) should be followed
   (4) Disorders of the lymphatic system
      i. Lymphatic enlargement requires 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, or that requires minimal or no treatment.
   (5) Leukaemia
      i. Applicants with acute leukaemia should be assessed as unfit. Once in established remission, applicants may be assessed as fit.
      ii. Applicants with chronic leukaemia should be assessed as unfit. A fit assessment may be considered after remission and a period of demonstrated stability.
      iii. 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.

iv. Regular follow-up is required in all cases of leukaemia.

(6) Splenomegaly.

i. Splenomegaly requires investigation. A fit assessment may be considered if the enlargement is minimal, stable and no associated pathology is demonstrated, or if the enlargement is minimal and associated with another acceptable condition.

CAR FCL-3.870 Haematology – Hodgkin's Lymphoma

Due to potential side effects of specific chemotherapeutic agents, the precise regime utilized should be taken into account.

CAR FCL-3.875 Haematology – Chronic Leukaemia

A fit assessment may be considered if the chronic leukaemia has been diagnosed as:

(a) lymphatic at stages 0, I, and possibly II without anaemia and minimal treatment; or

(b) stable 'hairy cell' leukaemia with normal haemoglobin and platelets

CAR FCL-3.880 Haematology – Splenomegaly

(a) Splenomegaly should not preclude a fit assessment, but should be assessed on an individual basis.

(b) Associated pathology of splenomegaly is e.g. treated chronic malaria.

(c) An acceptable condition associated with splenomegaly is e.g. Hodgkin's lymphoma in remission.

CAR FCL-3.885 Genitourinary system – General

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

(b) Applicants with any sequelae of disease or surgical procedures on the genitourinary system or its adnexa likely to cause incapacitation, in particular any obstruction due to stricture or compression, shall be assessed as unfit.

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

(1) renal disease;

(2) one or more urinary calculi may be assessed as fit subject to satisfactory renal/urological evaluation.

(d) Applicants who have undergone:

(1) a major surgical operation in the genitourinary system or its adnexa involving a total or partial excision or a diversion of its organs; or

(2) major urological surgery shall be referred to the CAA for an aero-medical assessment after full recovery before a fit assessment may be considered

CAR FCL-3.890 Genitourinary system – Urinary

(a) Abnormal urinalysis
Any abnormal finding on urinalysis requires investigation. This investigation should include proteinuria, hematuria and glycosuria.

(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) Applicants requiring dialysis should be assessed as unfit.

(c) Urinary calculi
(1) Applicants with an asymptomatic calculus or a history of renal colic require investigation. A fit assessment may be considered after successful treatment for a calculus and with appropriate follow-up.
(2) Residual calculi should be disqualifying unless they are in a location where they are unlikely to move and give rise to symptoms.

(d) Renal and urological surgery
(1) Applicants who have undergone a major surgical operation on the genitourinary system or its adnexa involving a total or partial excision or a diversion of any of its organs should be assessed as unfit until recovery is complete, the applicant is asymptomatic and the risk of secondary complications is minimal.
(2) Applicants with compensated nephrectomy without hypertension or uremia 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 tolerated with only minimal immuno-suppressive therapy after at least twelve (12) months.
(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.

CAR FCL-3.895 Genitourinary system – Urinary Calculi

(a) Asymptomatic stone(s)
Incidental finding of renal tract stones, the ATCO may be considered for a fit assessment with annual urologist review (Radiological investigation, biochemistry, metabolic screen and any other relevant investigation).

(b) 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. If the stone is parenchymal, then the hazard is minimal and the ATCO may be considered fit with annual Urologist review.

(c) Recurrent renal colic
Recurrent renal colic when associated with calculi should be investigated. If a comprehensive urological examination indicates a condition susceptible to treatment and subsequent review over an extended period after treatment shows 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 should be required by the CAA at year two (2) and seven (7).

(d) Previous history of ureteric colic more than seven (7) years
ATCO with history of documented renal colic more than seven (7) years ago can be assessed as fit 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 and he should have a regular urologist review. If he underwent successful treatment and the ATCO remains asymptomatic he may be given unrestricted medical certificates.

CAR FCL-3.900 Infectious disease – General

(See Appendix 6)

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

(b) Applicants diagnosed with or presenting symptoms of infectious disease such as:
   (1) acute syphilis;
   (2) active tuberculosis;
   (3) infectious hepatitis;
   (4) tropical diseases shall be referred to the CAA for an aero-medical assessment. A fit assessment may be considered after full recovery and specialist evaluation provided the CAA has sufficient evidence that the therapy does not affect the safe exercise of the privileges of the license.

CAR FCL-3.905 Infectious disease – Specific Symptoms

(See Appendix 6)

(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
   (1) Applicants with active tuberculosis should be assessed as unfit. A fit assessment may be considered following completion of therapy.
   (2) Applicants with quiescent or healed lesions may be assessed as fit. Specialist evaluation should consider the extent of the disease, the treatment required and possible side effects of medication.

(c) Syphilis
Applicants with acute syphilis should be assessed as unfit. A fit assessment may be considered in the case of those fully treated and recovered from the primary and secondary stages.

(d) HIV positivity
   (1) HIV positivite is disqualifying.
   (2) The occurrence of AIDS related complex is disqualifying

(e) Infectious hepatitis
Applicants with infectious hepatitis should be assessed as unfit. A fit assessment may be considered once the applicant has become asymptomatic after treatment and specialist evaluation. Regular review of the liver function should be carried out.

CAR FCL-33.910 Infectious Diseases - Hepatitis

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 controlling duties. Fit assessment may be considered by the AME in conjunction with the CAA 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.

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 ATCO in the 'immune tolerant' or 'inactive HBV carrier state'.

(a) ATCOs are required to submit a report from a liver specialist, to include:
  (1) History of infection and Current symptoms;
  (2) Stability of condition;
  (3) Liver Function Tests;
  (4) HBV serology;
  (5) HBV DNA levels;
  (6) Alphafoetoprotein (AFP);
  (7) Report of ultrasound of the liver

(b) Requirement for treatment is disqualifying.

1.2 Hepatitis C

(a) Applicant with HCV-antibody positive and HCV-PCR is considered unfit for certification, recertification may be considered for Class 3 with restricted medical certificate

(b) ATCOs are required to submit a report from a liver specialist, to include
  (1) History of infection;
  (2) Current symptoms including any CNS effects;
  (3) Stability of Condition;
  (4) Liver Function Tests;
  (5) HCV Serology;
  (6) HCV RNA and genotype;
  (7) Report of ultrasound of the liver including biopsy results if available.

(c) Requirement for treatment is disqualifying;

CAR FCL-3.915 Obstetrics and Gynecology – General

(See Appendix 7)

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

(b) Pregnancy

In the case of pregnancy, if the AeMC or AME considers that the license holder is fit to exercise her privileges, he/she shall limit the validity period of the medical certificate to the end of the 34th week of gestation. The license holder shall undergo a revalidation examination and assessment after full recovery following the end of the pregnancy.

CAR FCL-3.920 Obstetrics and gynecology – Specific

(See Appendix 7)

(a) Gynecological surgery

Applicants who have undergone a major gynecological operation should be assessed as unfit until recovery is complete, the applicant is asymptomatic and the risk of secondary complications or recurrence is minimal.

(b) Pregnancy

(1) A pregnant license holder may be assessed as fit during the first the thirty-four (34) weeks of gestation provided obstetric evaluation continuously indicates a normal pregnancy.
(2) The AeMC or AME, or the CAA, should provide written advice to the applicant and the supervising physician regarding potentially significant complications of pregnancy which may negatively influence the safe exercise of the privileges of the license.

CAR FCL-3.925 Musculoskeletal system

(See Appendix 8)

(a) Applicants shall have satisfactory functional use of the musculoskeletal system to enable them to safely exercise the privileges of the license.

(b) Applicants with static or progressive musculoskeletal or rheumatologic conditions likely to interfere with the safe exercise of the license privileges shall be referred to the CAA. A fit assessment may be considered after satisfactory specialist evaluation.

(c) Applicants with any significant sequelae from disease, injury or congenital abnormality affecting the bones, joints, muscles or tendons with or without surgery require full evaluation prior to a fit assessment.

(d) Abnormal physique, including obesity, or muscular weakness may require medical assessment and particular attention should be paid to an assessment in the working environment.

(e) Locomotor dysfunction, amputations, malformations, loss of function and progressive osteoarthritic disorders should be assessed on an individual basis in conjunction with the appropriate operational expert with a knowledge of the complexity of the tasks of the applicant.

(f) Applicants with inflammatory, infiltrative, or degenerative disease of the musculoskeletal system may be assessed as fit provided the condition is in remission and the medication is acceptable

CAR FCL-3.930 Psychiatry – General

(See Appendix 9)

(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 license(s).

(b) Applicants with a mental or behavioural disorder due to alcohol or other use or abuse of psychoactive substances shall be assessed as unfit pending recovery and freedom from substance use and subject to satisfactory evaluation as per CAA protocol and after successful treatment. Applicants shall be referred to the CAA.

(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 may be considered. Applicants shall be referred to the CAA for the assessment of their medical fitness.

(d) Applicants with a history of a single or repeated act of deliberate self-harm shall be assessed as unfit. Applicants shall be referred to the CAA and shall undergo satisfactory psychiatric evaluation before a fit assessment may be considered.

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

CAR FCL-3.935 Psychiatry – Disorders

(a) Disorders due to alcohol or other substance use

(1) A fit assessment may be considered after successful treatment, a period of documented sobriety or freedom from substance use, and review by a psychiatric specialist. The CAA, with the advice of the psychiatric specialist, should determine the duration of the period to be observed before a medical certificate can be issued (cross reference to alcohol rehabilitation program)

(2) Depending on the individual case, treatment may include in-patient treatment of some weeks.

(3) Continuous follow-up, including blood testing and peer reports may be required indefinitely.

(b) Mood disorder

Applicants with an established mood disorder should be assessed as unfit. 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 stability on maintenance psychotropic medication is confirmed, a fit assessment with an appropriate limitation may be considered. If the dosage of the medication is changed, a further period of unfit assessment should be required. Regular specialist supervision should be required. ATCO with Bipolar Disorder is disqualifying.

(c) Psychotic

Applicants with a history, or the occurrence, of a functional psychotic disorder is disqualifying unless it can be confirmed that the original diagnosis was inappropriate or inaccurate, or was a result of a single toxic episode.

(d) Alcohol Screening Tests

(1) Indications
   i. Screening as part of over 60 medical certification
   ii. As part of the medical evaluation determined by the AME during the regulatory medical examination
   iii. New cases of cardiac arrhythmias especially Atrial Fibrillation, Insomnia, Mood disorders, Liver function derangement, Isolated Hypertriglyceridemia, newly diagnosed Hypertension, Newly diagnosed Diabetes, Suspicious Musculoskeletal injuries e.g. Rib fractures or Metacarpal fractures or Road Traffic Accidents, New onset of Gout
   iv. Any elevated MCV, isolated elevated GGT, elevated ferritin and elevated CDT detected on routine testing not related with clinical findings and investigated appropriately.
   v. Referral following an aviation incident or work related issues.
   vi. 3rd party notifications for suspected Drug or Alcohol misuse.
   vii. Drink/Drug drive arrests whether local or international

(2) Screening Tools:
   i. A detailed interview and system review should be conducted with emphasis on the following:
      - Alcohol intake – amount /type/how often

- Smoking history
- Family history of substance misuse
- Physical dependence – withdrawal symptoms
- Sickness absence record-pattern of frequent, short term, last minute leave is often seen with substance-use disorder.
- Neurological issues
- Cardiac – arrhythmias/hypertension
- Gastroenterology – Gastritis/GORD
- Injuries- recurrent or unexplained
- Legal and social problems
- Marital disharmony

(3) Examination

i. Physical dependence – signs of withdrawal (e.g. irritability, restlessness, apprehension …)
ii. General appearance- complexion, smell of alcohol
iii. Liver damage – spider naevi, hepatomegaly
iv. Hypertension
v. Pancreatitis Cardiomegaly, arrhythmias
vi. Mood issues- anger/ agitation, irritability, apprehension
vii. Neurological disturbance
viii. Cognitive disturbance

(4) Questionnaire

i. AUDIT (Alcohol Use Disorders Identification test) – score of 8 or more suggests increased risks for hazardous/ harmful drinking alcohol.
ii. It should be correlated with history, clinical examination and further investigations.

(5) Laboratory Testing

i. GGT (gamma-glutamyl transferase): Is raised in about 80% of heavy drinkers, but is not a completely specific marker for harmful use of alcohol.
ii. 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.
iii. 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.
iv. 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.
v. Any elevation of CDT requires immediate suspension, a liver ultrasound to assess for biliary disease and a full report from a substance abuse specialist to the CAA regarding alcohol intake.

Note: CDT may not be measurable due to genetic variations. Other tests should be used in these cases e.g. PeTH blood testing or Hair testing for Alcohol.

(6) Protocol for Rehabilitation/Treatment/Reinstatement and Follow Up

i. If there is evidence in the history, examination, laboratory findings, AUDIT scores or psychological assessments suggestive of a possible substance use disorder, the license holder shall be suspended until all the investigations are complete.
ii. The AME should refer the license holder to Substance Abuse Specialist familiar with aviation environment to determine the diagnosis to CAA standards.

iii. If the substance abuse specialist assessment confirmed the diagnosis of alcohol use disorder to CAA standards, then it will be required for the ATCO to undertake a minimum twenty-eight (28) day in-patient rehabilitation stay under the Minnesota model at a recognized treatment centre.
iv. Aftercare and long-term follow-up. Even intensive in-patient care, is unlikely to result in long term recovery unless it is followed by on-going assistance. In the workplace, this must include:
v. Monitoring, preferably by a named employee assistance professional or named designated peer.
vi. Periodic re-evaluation by a substance abuse specialist, it will be determined on an individual basis by the treatment facility and the treating SAME.
vii. 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.
viii. Monthly Senior AME contact
ix. Monthly Blood tests
x. Urine, breath and or other tests as deemed appropriate by the SAME or specialists
xi. A minimum of fifteen unannounced breath alcohol testing per year, this may include the non-work
xii. related testing.
xiii. 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 CAA.
    - This can only be a minimum of three months after the treatment has been completed.
    - The CAA shall convene an aeromedical board consisting of one approved CAA 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 ATCO to return to controlling duties with restricted license.
    - The follow up will be indefinitely.
    - The initial license will be six monthly for the first 3 years of post-rehabilitation licensing.
    - Each license application shall have a letter from the applicant's management/ HR manager detailing sick days and any issues related to employment.
    - If relapse occurs at any time during the follow up program, the ATCO will be removed permanently from controlling duties.

    Failure to meet any of the mitigation strategies enforced with the reinstatement will lead to suspension and further investigation by the CAA. The SAME shall immediately suspend the license holder and inform the CAA about this failure

(e) Major Depression

(1) Protocol for licensing ATCOs with Major Depression

i. Initial diagnosis of a Depressive episode (according to ICD 10/or DSM V criteria) and treatment must be initiated by a CAA approved Psychiatrist.
ii. Baseline Clinical Psychologist assessment must be done by CAA 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 CAA Psychologist.

iii. 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.

iv. 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.

v. Initial grounding should be for at least four weeks post commencement of treatment. This period to:
   A. Check for potential side effects
   B. Improvement in the condition
   C. Stability

vi. The ATCO will be reviewed monthly by the treating Psychiatrist and AME with a Hamilton rating score or Becks anxiety inventory.

vii. 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.

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

ix. The AME will send the following reports to the CAA:
   A. Initial psychiatrist reports with all details of the case as per CAA form.
   B. Initial psychologist assessment including the result of psychometric test.
   C. Monthly follow up of the case from the first Psychiatrist and the AME.
   D. Second psychometric test result after stability of the condition.
   E. The second psychiatrist evaluation of the condition after stabilisation of the condition.
   F. simulator test result.

x. The CAA will evaluate the reports and determine the fitness of the applicant. Class 3 may be granted medical certificate with SIC limitation and other appropriate limitation.

xi. After returning to controlling duties the ATCO must ground himself if he feels a worsening of his condition or cognitive functioning.

xii. After returning to controlling duties and being treated, the ATCO must be evaluated every month by CAA Approved Psychiatrist, Psychologist or Senior AME. The review must include Hamilton score if depressed, if the score is above 8, the ATCO should be suspended for further assessment and treatment.

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

xiv. Any decline in cognitive function detected on routine duties (by Colleague or Supervisor) or during Simulator check must necessitate immediate suspension and Psychiatric re-evaluation.

xv. Any suicidal ideation during the course of stability will necessitate suspension and further Psychiatric re-evaluation.

xvi. Evidence of non-compliance with treatment or ignorance of Psychiatric or AME reviews, necessitates immediate suspension.

xvii. Once CBT treatment has finished, ATCO 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 CAA will convene a second Aeromedical evaluation

board, at the request of the AME, to reassess the ATCO's condition to remove the limitation.

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

xix. For ATCO 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. Issue no: Initial Page 234 of 258 Issue date: September 2015 Rev.no: 00 Revision date: September 2015

xx. Once successful withdrawal has occurred, a report to be sent to the CAA recommending return to controlling duties with appropriate limitation off medication. The ATCO will be subjected to monthly AME or Psychiatric review.

xxi. After minimum of 6 month controlling duties with satisfactory Psychiatric and AME reviews, a full report recommending removal of limitation to be forwarded to the CAA for their consideration. Second Psychiatrist evaluation may be required by the CAA.

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

(2) Specification for Psychiatric report

i. Applicant details
ii. History of presenting complaint
iii. Current neuro-vegetative signs and symptoms
iv. Past psychiatric history
v. Substance abuse history
vi. Family psychiatric history
vii. Medical History
viii. Social history
ix. Career history
x. Forensic history
xi. Mental status examination
xii. Diagnosis
xiii. Treatment plan
xiv. Follow up requirements
xv. Prognosis
xvi. Fitness assessment requirement

CAR FCL-3.940 Psychology – General

(a) If a psychological evaluation is indicated, it should be carried out by a psychologist taking into account the ATC environment and the associated risks.

(b) Where there is established evidence that an applicant may have a psychological disorder, the applicant should be referred for psychological opinion and advice.

(c) Established evidence should be verifiable information from an identifiable source which related to the mental fitness or personality of a particular individual. Sources for this information can be accidents or incidents, problems in training or competency assessments, behaviour or knowledge relevant to the safe exercise of the privileges of the license.

(d) The psychological evaluation may include a collection of biographical data, the administration of aptitude as well as personality tests and psychological interview

(e) The psychologist should submit a written report to the AME, AeMC or the CAA as appropriate, detailing his/her opinion and recommendation.

(f) Any company wishes to mandate initial Psychometric for their Class 3 applicant should follow the guidelines established by the CAA for this purpose and should be done by approved Psychologist.

CAR FCL-3.945 Neurology – General

(a) Applicants with an established history or clinical diagnosis of:
  (1) epilepsy except in cases in (b)(1) and (2) below;
  (2) recurring episodes of disturbance of consciousness of uncertain cause;
  (3) conditions with a high propensity for cerebral dysfunction;

(b) Applicants with an established history or clinical diagnosis of:
  (1) epilepsy without recurrence after the age of 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 disturbances or loss of consciousness;
  (6) brain injury;
  (7) spinal or peripheral nerve injury;
  (8) disorders of the nervous system due to vascular deficiencies including haemorrhagic and ischaemic events shall be referred to the licensing authority and undergo further evaluation before a fit assessment may be considered.

(c) Electroencephalography
  (1) EEG should be carried out when indicated by the applicant's history or on clinical Grounds.
  (2) Epileptiform paroxysmal EEG abnormalities and focal slow waves should be disqualifying. A fit assessment may be considered after further evaluation.

(d) Epilepsy
  (1) Applicants who have experienced one or more convulsive episodes after the age of 5 should be assessed as unfit.
  (2) A fit assessment may be considered if:
    i. The applicant is seizure free and off medication for a period of at least 10 years;
    ii. Full neurological evaluation shows that a seizure was caused by a specific non-recurrent cause, such as trauma or toxin.
  (3) Applicants who have experienced an episode of benign Rolandic seizure may be assessed as fit provided the seizure has been clearly diagnosed including a properly documented history and typical EEG result and the applicant has been free of symptoms and off treatment for at least ten (10) years.

(e) Neurological disease
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. A fit assessment may be considered in cases of minor functional losses associated with stationary disease after full neurological evaluation.

(f) Disturbance of consciousness
Applicants with a history of one or more episodes of disturbed consciousness may be assessed as fit if the condition can be satisfactorily explained by a non-recurrent cause. A full neurological evaluation is required.

(g) Head injury
Applicants with a head injury which was severe enough to cause loss of consciousness or is associated with penetrating brain injury should be evaluated 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. Behavioural and cognitive aspects should be taken into account.

CAR FCL-3.950 Neurology – Classification of Head Injury and Aeromedical Implications.

(a) Mild Head Injury

(1) This is characterized by:

i. 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.

ii. Normal CT scan and MRI i.e. no skull fractures or cerebral bleeding

iii. Normal neuropsychological testing

(2) Aero medical disposition

i. With the above criteria all satisfied, the main determinant factor for certification decision will be the PTA duration.

A. A clear documented history of PTA lasting 1 hour or less and no LOC, the applicants are generally considered to be fit for duty after four weeks.

B. A clear documented history of PTA/LOC lasting 1-12 hours, the applicants may be granted restricted medical certification by one year.

C. A clear documented history of PTA/LOC more than 12 hours a restricted certification can be considered at two years

ii. In all cases, formal confirmation of neurological fitness should precede a return to controlling duties and referral to the CAA for a final decision is required.

(b) Significant head injury

(1) Presence of any of the following:

i. PTA/LOC >12 hrs, and

ii. Focal neurological deficits

iii. Basal Skull fracture or Depressed fracture (Linear Fracture with intact dura not included)

iv. Surgical or traumatic penetration of the dura

v. Neurological/intellectual impairment

vi. Any intracranial bleeding (Subdural Hematoma, Epidural Hematoma, Intracranial Hemorrhage, Intraventricular Hemorrhage, Subarachnoid Hemorrhage)

vii. Abnormal EEG

(2) Aero medical disposition

i. In the presence of any of the above findings, the license holder must be assessed unfit.

ii. However, reconsideration of certification decision may be done by the CAA a 2 years after the index event. In this case a Evaluation Aeromedical Board will be conducted.

iii. The main determinant factor for certification decision will be the:

iv. Extent and nature of any neurological deficit.
v. Risk of post traumatic epilepsy

(3) Certification Requirements:
i. Two Neurology consultations by Neurologists acceptable to the CAA 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 / Photo stimulation EEG.
v. Simulator assessment
vi. Evaluation medical board

CAR FCL-3.955 Visual system – General

(a) Examination
(1) 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.
(2) A routine eye examination shall form part of all revalidation and renewal examinations.
(3) Applicants shall undergo tonometry at the first revalidation examination after the age of 40, on clinical indication and if indicated considering the family history.
(4) Applicants shall supply the AeMC or AME with an ophthalmic examination report in cases where
i. the functional performance shows significant changes;
ii. the distant visual standards can only be reached with corrective lenses;
(5) Applicants with a high refractive error shall be referred to the CAA.

(b) Distant visual acuity, with or without optimal correction, shall be 6/9 (0,7) or better in each eye separately, and visual acuity with both eyes shall be 6/6 (1,0) or better.

(c) Initial applicants having monocular or functional monocular vision, including eye muscle balance problems, shall be assessed as unfit. At revalidation or renewal examinations the applicant may be assessed as fit provided that both an ophthalmological examination and the functional assessment are satisfactory. The applicant shall be referred to the CAA.

(d) Initial applicants with acquired substandard vision in one eye shall be assessed as unfit. At revalidation or renewal examinations the applicant shall be referred to the CAA and may be assessed as fit provided that both an ophthalmological examination and functional test are satisfactory.

(e) Applicants for class 1 and 2 shall be able to read an N5 chart or equivalent at 30-50 cm and an N14 chart or equivalent at 100 cm, if necessary with correction either spectacles or contact lenses or any other corrective procedures.

(f) Applicants shall have normal fields of vision and normal binocular function.

(g) Applicants who have undergone eye surgery shall be assessed as unfit until full recovery of the visual function. A fit assessment may be considered by the CAA subject to satisfactory ophthalmic evaluation.

(h) Applicants with a clinical diagnosis of keratoconus shall be referred to the CAA and may be assessed as fit subject to a satisfactory examination by an ophthalmologist.

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

(j) Spectacles and contact lenses

(1) If satisfactory visual function for the rated duties is achieved only with the use of correction, the spectacles or contact lenses must provide optimal visual function, be well tolerated, and suitable for air traffic control purposes.
(2) No more than one pair of spectacles, when worn during the exercise of licensed privileges, shall be used to meet the visual requirements at all distances.
(3) A spare set of similarly correcting spectacles shall be readily available when exercising the privileges of the license(s).
(4) Contact lenses, when are worn during the exercise of licensed privileges, shall be mono-focal, non-tinted and not orthokeratological. Monovision contact lenses shall not be used.
(5) Applicants with a large refractive error shall use contact lenses of high index spectacle lenses.

CAR FCL-3.960 Visual system – Examination Standards

(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 ophthalmological examinations are required for any significant reason, this should be imposed as a limitation on the medical certificate.
(4) The effect of multiple eye conditions should be evaluated by an ophthalmologist with regard to possible cumulative effects. Functional testing in the working
(5) environment may be necessary to consider a fit assessment.
(6) Visual acuity should be tested using Snellen charts, or equivalent, under appropriate illumination. Where clinical evidence suggests that Snellen may not be appropriate, Landolt 'C' may be used.

(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) objective refraction — hyperopic initial applicants with a hyperopia of more than +2 diopters and under the age of 25 in cycloplegia;
(4) ocular motility and binocular vision;
(5) colour vision;
(6) visual fields;
(7) tonometry;
(8) examination of the external eye, anatomy, media (slit lamp) and fundoscopy;
(9) assessment of contrast and glare sensitivity.

(c) Routine eye examination

At each revalidation or renewal examination an assessment of the visual fitness of the applicant should be performed and the eyes should be examined with regard to possible pathology. All abnormal and doubtful cases should be referred to a CAA approved ophthalmologist. This routine eye examination should include:

(1) history;
(2) visual acuities — near, intermediate and distant vision; uncorrected and with best optical correction if needed;
(3) morphology by ophthalmoscopy;
(4) further examination on clinical indication

(d) Refractive error

(1) Applicants with a refractive error exceeding +5.0 dioptres should be assessed as unfit.

(2) Applicants with a refractive error between +5.0/-6.0 dioptres may be assessed as fit provided optimal correction has been considered and no significant pathology is demonstrated. If the refractive error exceeds +3.0/-3.0 dioptres, a 4-yearly follow up by an eye specialistshould be required.

(3) Applicants with:
   i. a refractive error exceeding -6 dioptres;
   ii. an astigmatic component exceeding 3 dioptres; or
   iii. anisometropia exceeding 3 dioptres;

   may be considered for a fit assessment if:
      A. no significant pathology can be demonstrated;
      B. optimal correction has been considered;
      C. visual acuity is at least 6/6 (1.0) in each eye separately with normal visual fields while wearing the optimal spectacle correction;
      D. 2-yearly follow-up is undertaken by an eye specialist.

(4) Applicants who need a myopic correction exceeding -6 dioptres should wear contact lenses or spectacles with high-index lenses in order to minimise peripheral field distortion.

(e) Convergence

Applicants with convergence outside the normal range may be assessed as fit provided it does not interfere with near vision (30-50 cm) or intermediate vision (100 cm) with or without correction.

(f) Substandard vision

(1) Applicants with reduced central vision in one eye may be assessed as fit for a revalidation or renewal of a medical certificate if the binocular visual field is normal and the underlying pathology is acceptable according to ophthalmological evaluation. Testing should include functional testing in the appropriate working environment.

(2) Applicants with acquired substandard vision in one eye (monocularity, functional monocular vision including eye muscle imbalance) may be assessed as fit for revalidation or renewal if the ophthalmological examination confirms that:
   i. the better eye achieves distant visual acuity of 1.0 (6/6), corrected or uncorrected;
   ii. the better eye achieves intermediate and near visual acuity of 0.7 (6/9), corrected or uncorrected;
   iii. there is no significant ocular pathology; and
   iv. a functional test in the working environment is satisfactory;
   v. 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 is assessed as unfit.

(3) An applicant with a monocular visual field defect may be assessed as fit if the binocular visual fields are normal and the he passed successfully the functional assessment.

(g) Keratoconus

Applicants with keratoconus may be considered for a fit assessment 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 when measured with optimal correction, if prescribed:

(1) at 6 meters:

i. 2.0 prism diopters in hyperphoria,
ii. 10.0 prism diopters in esophoria,
iii. 8.0 prism diopters in exophoria and

(2) at 33 centimeters:

i. prism diopter in hyperphoria,
ii. prism diopters in esophoria,
iii. prism diopters in exophoria
iv. may be assessed as fit provided that orthoptic evaluation demonstrates that the fusional reserves are sufficient to prevent asthenopia and diplopia. TNO testing or equivalent should be carried out to demonstrate fusion.

(i) Eye surgery

(1) After refractive surgery or surgery of the cornea including cross linking, a fit assessment may be considered, provided:

i. pre-operative refraction was less than +5 diopters;
ii. satisfactory stability of refraction has been achieved (less than 0.75 diopters variation diurnally);
iii. examination of the eye shows no post-operative complications;
iv. glare sensitivity is normal;
v. mesopic contrast sensitivity is not impaired;
vi. Evaluation is undertaken by an ophthalmologist.

(2) Cataract surgery

Applicants who underwent cataract surgery may be assessed as fit after 2 months provided the visual requirements are met either with contact lenses or with intraocular lenses (monofocal, non-tinted).

(3) Retinal surgery/retinal laser therapy

i. After retinal surgery applicants may be assessed fit around 6 months after successful surgery. Annual ophthalmological follow-up may be necessary. Longer periods may be acceptable after 2 years on recommendation of the ophthalmologist. A fit assessment may be considered earlier if recovery is complete.
ii. After successful retinal laser therapy applicants may be assessed as fit provided an ophthalmological evaluation shows stability.

(4) Glaucoma surgery

After glaucoma surgery applicants may be assessed as fit around 6 months after successful surgery. 6-monthly ophthalmological examinations to follow-up secondary complications caused by the glaucoma may be necessary. A fit assessment may be considered earlier if recovery is complete.

(5) Extra ocular muscle surgery

A fit assessment may be considered not less than 6 months after surgery and after a satisfactory ophthalmological evaluation.

(6) Visual correction
Spectacles should permit the license holder to meet the visual requirements at all distances.

CAR FCL-3.965 Visual system – Testing

(a) Test distance: 40 cm

Comparison of different reading charts (approximately)

Decimal	Nieden	Jaeger	Snellen	N	Pari naud
1.0	1	2	1.5	3	2
0.8	2	3	2	4	3
0.7	3	4	2.5		
0.6	4	5	3	5	4
0.5	5	5		6	5
0.4	7	9	4	8	6
0.35	8	10	4.5		8
0.32	9	12	5.5	10	10
0.3	9	12		12	
0.25	9	12		14	
0.2	10	14	7.5	16	14
0.16	11	14	12	20	

(b) Test distance: 80 cm

Comparison of different reading charts (approximately)

Decimal	Nieden	Jaeger	Snellen	N	Pari naud
1.2	4	5	3	5	4
1.0	5	5		6	5
0.8	7	9	4	8,0	6
0.7	8	10	4,5		8
0.63	9	12	5.5	10	10
0.6	9	12		12	10
0.5	9	12		14	10
0.4	10	14	7.5	16	14
0.32	11	14	12	20	14

CAR FCL-3.970 Colour vision

(a) Applicants shall be normal trichromates.

(b) Pseudoisochromatic plate testing alone is not sufficient.

(c) Colour vision shall be assessed using means able to demonstrate normal trichromacy.

(d) Class 3 applicant is considered Normal/colour safe if all the 24 plates, presented in a random order, are identified without uncertainty or hesitation (less than 3 seconds per plate) and without error, or had passed successfully CAD test.

(e) Initial Applicants for Class 3 who fail the Ishihara's test, shall undertake advanced colour vision testing (CAD)

(f) Renewal Applicants who previously passed screening test and failed the current screening testing, shall undertake advanced colour vision testing (CAD)

(g) Current holder of a CAA Medical Class 1 who had previously granted a waiver based on foreign waiver/or advance colour vision tests not approved by the CAA, shall undertake advanced colour vision testing (CAD).

(h) Initial ATC applicant who fails the CAD test will NOT be granted a CAA Class 3 medical certificate.

(i) Renewal ATC who fails the CAD test will not be granted a CAA Class 3 medical certificates without functional colour vision assessment at work place.

Note: Current CAA License Holders who had previously passed Anomaloscopy or Lantern testing acceptable to CAA (Holmes Wright, Beynes, or Spectrolux) are not required to take CAD test.

CAR FCL-3.975 Otorhinolaryngology – General

(a) Examination

(1) A routine otorhinolaryngological examination shall form part of all initial, revalidation and renewal examinations.

(2) Hearing shall be tested at all examinations. The applicant shall understand correctly conversational speech when tested with each ear at a distance of 2 meters from and with his/her back turned towards the AME.

(3) Hearing shall be tested with pure tone audiometry at the initial examination and at subsequent revalidation or renewal examinations every 4 years until the age of 40 and every 2 years thereafter.

(4) Pure-tone audiometry:

i. Applicants for a Class 3 medical certificate 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.

ii. Applicants who do not meet the hearing criteria above shall be referred to the CAA and undergo an approved CAA specialist assessment before a fit assessment may be considered. Initial applicants shall undergo a speech discrimination test.

iii. Applicants for a revalidation or renewal of a Class 3 medical certificate shall undergo a functional hearing test in the operational environment.

(5) Hearing aids

i. Initial examination: the need of hearing aids to comply with the hearing requirements entails unfitness.

ii. Revalidation and renewal examinations: a fit assessment may be considered if the use of hearing aid(s) or of an appropriate prosthetic aid improves the hearing to achieve a normal standard as assessed by fully functional testing in the operational environment.

iii. If a prosthetic aid is needed to achieve the normal hearing standard, a spare set of the equipment and accessories, such as batteries, shall be available when exercising the privileges of the license.

(b) Applicants with:

(1) an active chronic pathological process of the internal or middle ear;
(2) unhealed perforation or dysfunction of the tympanic membrane(s);
(3) disturbance of vestibular function;
(4) significant malformation or significant chronic infection of the oral cavity or upper respiratory tract;
(5) significant disorder of speech or voice reducing intelligibility

Shall be referred to the CAA and undergo further ORL examination and assessment to establish that the condition does not interfere with the safe exercise of the privileges of the license.

CAR FCL-3.980 Otorhinolaryngology – Examination

(a) Examination
  (1) An otorhinolaryngological examination includes:
    i. history;
    ii. clinical examination including otoscopy, rhinoscopy, and examination of the mouth and throat;
    iii. clinical assessment of the vestibular system.
  (2) ENT specialists involved in the assessment of air traffic controllers should have an understanding of the functionality required by air traffic controllers in the exercise of their licenses functions.
  (3) Where a full assessment and functional check is needed, due regard should be paid to the operating environment in which the operational functions are undertaken.

(b) Hearing
  (1) The follow-up of an applicant with hypoacusis should be decided by the CAA. If at the next annual test there is no indication of further deterioration, the normal frequency of testing may be resumed.
  (2) An appropriate prosthetic aid may be a special headset with individual earpiece volume controls. Full functional and environmental assessments should be carried out with the chosen prosthetic equipment in use.

(c) Ear conditions

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

The presence of vestibular disturbance and spontaneous or positional nystagmus requires complete vestibular evaluation by a specialist. Significant abnormal caloric or rotational vestibular responses are disqualifying. At revalidation and renewal examinations abnormal vestibular responses should be assessed in their clinical context.

(e) Speech disorder

Applicants with a speech disorder should be assessed with due regard to the operational environment in which the operational functions are undertaken. Applicants with significant disorder of speech or voice should be assessed as unfit.

(f) Hearing
  (1) Speech discrimination test: discriminating speech against other noise including other sources of verbal communication and ambient noise in the working environment, but not against engine noise.
  (2) Functional hearing test: the objective of this test is to evaluate the controller's ability to hear the full range of communications that occur in an operational environment and not just through a headset or speaker.
  (3) Prosthetic aid: the functional hearing test to be carried out with the prosthetic aid in use is to ensure that the individual is able to perform the functions of his/her license and that the equipment is not adversely affected by interference from headsets or other factors.
  (4) Pure-tone audiometry: testing at frequencies at or above 4000 Hz will aid the early diagnosis of acoustic neuroma, noise induced hearing loss (NIH), and other disorders of

hearing. Particular attention should be paid in cases where there is a significant difference between thresholds of the left and right ear.

CAR FCL-3.985 Dermatology

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

(b) Referral to the licensing authority shall be made if doubt exists about the fitness of an applicant with eczema (exogenous and endogenous), severe psoriasis, chronic infections, drug induced, or bullous eruptions or urticaria.

(c) Systemic effects of radiation or pharmacological treatment for a dermatological condition shall be evaluated before a fit assessment can be considered.

(d) An applicant with a skin condition that causes pain, discomfort, irritation or itching may only be assessed as fit if the condition can be controlled and does not interfere with the safe exercise of the of the privileges of the license.

(e) In cases where a dermatological condition is associated with a systemic illness, full consideration shall be given to the underlying illness before a fit assessment may be considered.

CAR FCL-3.990 Oncology – General

(See Appendix 10)

(a) After diagnosis of primary or secondary malignant disease, applicants shall be referred to the CAA and shall undergo satisfactory oncological evaluation before a fit assessment may be considered.

(b) Applicants with an established history or clinical diagnosis of an intracerebral malignant tumor shall be assessed as unfit

CAR FCL-3.995 Oncology – Assessment

(See Appendix 10)

(a) Applicants who have been diagnosed with malignant disease may be assessed as fit provided:
  (1) after primary treatment there is no evidence of residual malignant disease likely to jeopardise flight safety;
  (2) time appropriate to the type of tumour has elapsed since the end of primary treatment;
  (3) the risk of incapacitation from a recurrence or metastasisis 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 CAA.
  (6) Applicants with peripheral arterial disease before or after surgery shall be assessed as unfit.
  (7) Provided there is no significant functional impairment a fit assessment may be considered by the AMB.

Appendix 1 – Specification for Respiratory Report

The following subheadings are for guidance purposes only and should not be taken as an exhaustive list

(a) Diagnoses

(b) History
  (1) Current/presenting symptoms
    i. Shortness of breath, wheeze or bronchospasm, nocturnal symptoms
    ii. Circumstances surrounding onset, precipitating factors
    iii. Residual impairment or loss of function
  (2) Confirmation of any systemic involvement
  (3) Details of respiratory events within past 5 years (include l treatment and admissions)
  (4) Childhood and other relevant medical history
  (5) Family history

(c) Examination and Investigation findings
  (1) Clinical findings.
  (2) Standard spirometry / exercise spirometry.
  (3) Bronchial reactivity/reversibility test (if indicated).
  (4) Radiology imaging reports (e.g. x-ray, serial imaging if indicated).
  (5) Other investigations (e.g. bronchoscopy/thoracoscopy if performed).

(d) Treatment
  (1) Current and recent past medications (dose, start and finish dates) -Include frequency of bronchodilator use (as applicable).
  (2) Confirmation no side effects from medication.
  (3) Current and past history of systemic steroids.
  (4) Other treatments must be detailed.
  (5) For OSA CPAP report included with medical report.
  (6) Surgical reports (where performed).

(e) Follow up and further investigations/referrals planned or recommended
  (1) Anticipated follow up/frequency of clinical reviews and investigations.
  (2) Prognosis and risk of recurrence.
  (3) Confirmation of full recovery or remission on maintenance dose of acceptable medication and well controlled at date of report.

(f) Clinical Implications

Any concerns regarding disease progression, treatment compliance or risk of sudden incapacity.

Appendix 2 – Substance Abuse Specialist specification report

The following subheadings are for guidance purposes only and should not be taken as an exhaustive list.

(a) License holder details
  (1) Name
  (2) Date of Birth
  (3) License No. and class of Medical
  (4) Employer

(b) Evaluation Date

(c) Review Type
  (1) Initial review
  (2) Second opinion

(d) Reason for referral

(e) History of present complaint

(f) Past Medical History

(g) Past psychiatric history

(h) Forensic history (DUI, Traffic violation), state date of offence

(i) Substance use /or Abuse history

(j) Current Work related issues (aggression /violent behaviour/incident)

(k) Career History (List of x-employers, years of experiences with each, total flying hours)

(l) Family History of Psychiatric disorder /& or Substance abuse disorder

(m) Investigation (if applicable to the case)

(n) Alcohol intake history (age consumption started, amount consumed, type of alcohol consumed and any attempt to stop in the past)

(o) Mental status examination

(p) Diagnosis as per DSM – V criteria

(q) Treatment Plan (Medication – Psychotropic – Detoxification / inpatient treatment)

(r) Follow up (if applicable)

(s) Recommendation

Appendix 3 – Specification for a CAA Aeromedical Board and Medical Assessor Report

The following subheadings are for guidance purposes only and should not be taken as an exhaustive list

(a) License holder profile

(b) Name

(c) D.O.B.

(d) License No. and class of medical

(e) Employer 2.

(f) Reason for convening the board

(g) Personal and work history
  (1) Past Medical history
  (2) Family History
  (3) Social History
  (4) Medication

(h) History of the condition
  (1) Presenting symptoms & initial examination
  (2) Nature of condition, circumstances surrounding onset, precipitating factors
  (3) Other relevant medical history
  (4) Initial investigation
  (5) Initial consultant evaluation

(i) Functional simulator assessment (if applicable to the case)

(j) Physical examination general &relevant to the medical condition

(k) Aeromedical considerations
  (1) Reference from CAA CAR -FCL-3
  (2) Reference from ICAO Annex 6 or ICAO Documents
  (3) Reference from Literature review

(l) Attachment:
  (1) Investigation relevant to the case
  (2) Consultation report relevant to the case
  (3) References

(m) Summary

(n) Recommended aeromedical Disposition

(o) Signature of all board members

Appendix 4 – Specification for Hypertension Report

The following subheadings are for guidance purposes only and should not be taken as an exhaustive list.

(a) Diagnosis

(b) History
  (1) Presenting symptoms.
  (2) Nature of condition, circumstances surrounding onset, precipitating factors.
  (3) Other relevant medical history (e.g. diabetes).

(c) Examination and Investigation findings
  (1) Blood Pressure stabilized within acceptable parameters (international recognized Hypertension Guidelines, (e.g. British /or NICE guidelines).
  (2) Three BP readings each taken more than eighteen (18) hrs apart or a twenty-four (24) hr BP recording. Readings should be taken no sooner than two weeks after commencing antihypertensive medication

(d) General Blood Tests
  (1) Urea and Electrolyte.
  (2) Liver and Renal Function (eGFR).
  (3) Lipid Profile - serum total cholesterol and HDL cholesterol.
  (4) Plasma glucose

(e) Confirmation of no end organ damage
  (1) Renal disease
    i. Urinalysis (albumin, creatinine ratio and haematuria).
  (2) Hypertensive retinopathy
    i. Cardiovascular risk assessment
  (3) Ophthalmology evaluation

(f) Family history

(g) Smoking

(h) Alcohol history

(i) Weight (BMI)

(j) Resting ECG

(k) Exercise Tolerance Test Report where indicated (e.g. Class 1 multiple risk factors)
  (1) Protocol used
  (2) Walking time
  (3) Symptoms experienced
  (4) ECG changes
  (5) Summary & conclusions

(l) Echocardiogram where indicated
  (1) Valve structure & function
  (2) Standard chamber dimensions
  (3) Ejection Fraction (indicate measurement technique)
  (4) Summary & conclusions

Note: Where investigations are abnormal or borderline the hard copy traces/images are likely to be required for review.

(m) Treatment
  (1) Current and recent past medication (dose, frequency, start date.)
  (2) Confirmation no side effects from medication.

(3) Lifestyle interventions.

(n) Follow up and further investigations/referrals planned or recommended
(1) Plan of management and anticipated follow up.

(o) Clinical Implications
(1) Any concerns regarding disease progression, treatment compliance or risk of sudden incapacity.

Appendix 5 – Aeromedical Psychology – Clinical and Cognitive Assessment Standards

(a) The Psychological Evaluation

(1) The following assessment standards are to cover:

i. Suitability for medical certification for suspected or confirmed psychological issues including alcohol/substance abuse or dependence.

ii. Assessment of neurocognitive status of aviators with neurological trauma or illness.

iii. Evaluations on aviators with problems that arise in training, upgrading, transitioning aircraft, or in proficiency testing.

(2) Who may perform a psychological evaluation?

i. Clinical psychological evaluations must be conducted by a licensed clinical psychologist who ideally possesses a doctoral degree in clinical psychology and has expertise in psychological assessment and specialist training/experience in aeromedical psychology.

ii. Specialist training in psychology must be accredited by a recognized professional body.

iii. The clinical psychologist must be able to evidence ongoing training and specific supervision from an appropriately trained supervisor in aeromedical psychology.

iv. For an aviation neuropsychological evaluation, the clinical psychologist must be able to evidence specific expertise and specialist training in neuropsychology/aeromedical psychology and supervision in this sub-specialty of clinical psychology.

v. In summary, it is critical the clinical psychologist has relevant experience and training so they are aware of relevant aviation regulations and can contextualize the clinical and cognitive test findings to the flight environment, interpersonal demands of the job and aviation risks.

(3) A psychologist with a Master's degree in clinical psychology must be able to evidence documented specialist training in psychological assessment and a minimum of five (5) years practice in addition to all other fitness-to-practice standards. All psychologists providing these expert assessments must be able to evidence they have acted within their area of expertise.

i. For example, an Aviation Medicine course recognized by ICAO and or CAA.

(4) What must the psychological evaluation include? At a minimum:

i. Review of all available records (medical, psychological, operational, training, selection etc.).

ii. Clinical interview (including with family members, colleagues etc. if indicated).

iii. Mental status examination.

iv. Interpretation of a full battery of psychological tests including but not limited to the minimum dataset (specified below).

v. An integrated summary of findings and recommendations with a clear opinion regarding clinically or aero medically significant findings and the potential impact on aviation safety.

Appendix 6 to Subpart C – Cardiovascular Evaluation

(a) Applicants with significant abnormality of any of the heart valves shall be assessed as unfit.
   (1) Applicants with minor cardiac valvular abnormalities may be assessed as fit by the AMB subject to compliance with Aeromedical Guidance Manual Vol 2.
   (2) Applicants with cardiac valve replacement/repair shall be assessed as unfit. A fit assessment may be considered by the AMB subject to compliance with Aeromedical Guidance Manual Vol 2.

(b) Systemic anticoagulant therapy is disqualifying. Applicants who have received treatment of limited duration, may be considered for a fit assessment by the AMB subject to compliance with Aeromedical Guidance Manual Vol 2.

(c) Applicants with any abnormality of the pericardium, myocardium or endocardium not covered above shall be assessed as unfit. A fit assessment may be considered by the AMB following complete resolution and satisfactory cardiological evaluation in compliance with Aeromedical Guidance Manual Vol 2.

(d) Applicants with congenital abnormality of the heart, before or after corrective surgery, shall be assessed as unfit. A fit assessment may be considered by the AMB in compliance with Aeromedical Guidance Manual Vol 2.

(e) Heart or heart/lung transplantation is disqualifying.

(f) Applicants with a history of recurrent vasovagal syncope shall be assessed as unfit. A fit assessment may be considered by the AMB in an applicant with a suggestive history subject to compliance with Aeromedical Guidance Manual Vol 2.

Appendix 7 to Subpart C – Sexually transmitted diseases and other infections

(See CAR-FCL-3.480/CAR-FCL-3.900/CAR-FCL-3.905)

(a) HIV positivity is disqualifying.

(b) Recertification of HIV positive individuals to multi-pilot (Class 1 'OML') or safety pilot (Class 2 'OSL') operations may be considered by the AMB subject to frequent review. The occurrence of AIDS or AIDS related complex is disqualifying.

(c) Acute syphilis is disqualifying. Certification may be considered by the AMB in the case of those fully treated and recovered from the primary and secondary stages.

(d) The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding certification and should be consulted together with the Chapter specific to this system.

Appendix 8 to Subpart C – Gynaecology and Obstetrics

(See CAR FCL-3.490/3.495/3.915/3.920)

(a) The AMB may approve certification of pregnant aircrew during the first twenty-six (26) weeks of gestation following review of the obstetric evaluation. The AMB shall provide written advice to the applicant and the supervising physician regarding potentially significant complications of pregnancy (see Manual). Class 1 certificate holders shall be restricted to multi-pilot operations (Class 1 'OML').

(b) Major gynaecological surgery is disqualifying for a minimum of three months. The AMB may consider earlier recertification if the holder is completely asymptomatic and there is only a minimal risk of secondary complication or recurrence.

(c) The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding certification and should be consulted together with the Chapter specific to this system.

Appendix 9 to Subpart C – Musculoskeletal requirements

(See CAR-FCL-3.500 to FCL-3.510 and CAR-FCL-3.925)

(a) Abnormal physique, including obesity, or muscular weakness may require medical flight test or flight simulator testing approved by the AMB. Particular attention shall be paid to emergency procedures and evacuation. Restriction to specified type(s) or multi-pilot (Class 1 'OML') or safety pilot (Class 2 'OSL') operations may be required.

(b) In cases of limb deficiency, recertification (Class 1) and certification (Class 2) may be considered by the AMB according to CAR-FCL-3.500 to CAR-FCL-3.510 and 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 considered for certification by the AMB. 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 when necessary, restriction to specified type(s) or multi-pilot (Class 1'OML') or safety pilot (Class 2 'OSL') operation may be required.

(d) The assessment of malignant conditions in this system is also explained in the Oncology Chapter of the Manual which provides information regarding certification and should be consulted together with the Chapter specific to this system

Appendix 10 to Subpart C – Psychiatric requirements

(See CAR-FCL-3.520 to CAR-FCL-3.530 and CAR-FCL-3.930)

(a) An established condition including psychotic symptoms is disqualifying. Certification may only be considered if the AMB can be satisfied that the original diagnosis was inappropriate or inaccurate, or in the case of a single toxic episode.

(b) An established neurosis is disqualifying. The AMB may consider certification after review by a psychiatric specialist acceptable to the AMB and all psychotropic medication has been stopped for at least three months.

(c) A single self-destructive action or repeated overt acts are disqualifying. Certification may be considered by the AMB after full consideration of an individual case and may require psychological or psychiatric review.

(d) Alcohol, psychotropic drug or substance abuse with or without dependency is disqualifying. Psychotropic drugs and substances include sedatives and hypnotics, barbiturates, anxiolytics, opioids, central nervous system stimulants such as cocaine, amphetamines and similarly acting sympathomimetics, hallucinogens, phencyclidine or similarly acting arylcyclohexylamines, cannabis, inhalants and other psychoactive drugs or substances. Certification may be considered by the AMB after a period of two years documented sobriety or freedom from drug use. Recertification at an earlier point for multi-pilot operations (Class 1 'OML') or safety pilot restriction (Class 2 "OSL') may be considered by the AMB following:

(1) a minimum of four (4) weeks inpatient treatment;

(2) review by a psychiatric specialist acceptable to the AMB; and

(3) ongoing review including blood testing and peer reports for a period of three years. Multi-pilot (Class 1 'OML') or safety pilot (Class 2 'OSL') restrictions may be reviewed by the AMB after eighteen (18) months from recertification.

Appendix 11 to Subpart C – Oncology Requirements

(See CAR-FCL-3.650 to CAR-FCL-3.660 and CAR-FCL-3.990/995)

(a) Class 1 certification may be considered by the AMB and Class 2 certification may be considered by the AME in consultation with the AMB 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 within limits acceptable to the AMB;
   (4) There is no evidence of short or long-term sequelae from treatment. Applicants who have received anthracycline chemotherapy shall require cardiological review;
   (5) Arrangements for follow-up are acceptable to the AMB.

(b) Multi-pilot (Class 1 OML) for recertification or safety pilot (Class 2 OSL) restriction may be appropriate.

Appendix 12 – Identification of Alcohol Disorders

Form 3 – Self Test Version

The Alcohol Use Disorders Identification Test: Self-Report Version					
PATIENT: Because alcohol use can affect your health and can interfere with certain medication and treatments, it is important that we ask some questions about your use of alcohol. Your answers will remain confidential so please be honest. Place an X in one box that best describes your answer to each question.					
Questions	0	1	2	3	4
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
9. Have you or someone else been injured because of your drinking?	NO		Yes, but not in the last year		Yes, during the last year
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	NO		Yes, but not in the last year		Yes, during the last year
					Total

Form 4 – Interview Version

<table>
<tr><th colspan="2">The Alcohol Use Disorders Identification Test: Interview Version</th></tr>
<tr><td colspan="2">Read questions as written. Record answers carefully. Begin the AUDIT by saying “Now I am going to ask you some questions about your use of alcoholic beverages during this past year.” Explain what is meant by “alcoholic beverages” by using local examples of beer, wine, vodka, etc. Code answers in terms of “standard drinks”. Place the correct answer number in the box at the right.</td></tr>
<tr><td>1. How often do you have a drink containing alcohol?
(0) Never [Skip to Qs 9-10]
(1) Monthly or less
(2) 2 to 4 times a month
(3) 2 to 3 times a week
(4) 4 or more times a week ☐</td><td>6. How often during the last year have you needed first drink in the morning to get yourself going after a heavy drinking session?
(0) Never
(1) Less than monthly
(2) Monthly
(3) Weekly
(4) Daily or almost daily ☐</td></tr>
<tr><td>2. How many drinks containing alcohol do you have on a typical day when you are drinking?
(0) 1 or 2
(1) 3 or 4
(2) 5 or 6
(3) 7, 8, or 9
(4) 10 or more ☐</td><td>7. How often during the last year have you had a feeling of guilt or remorse after drinking?
(0) Never
(1) Less than monthly
(2) Monthly
(3) Weekly
(4) Daily or almost daily ☐</td></tr>
<tr><td>3. How often do you have six or more drinks on one occasion?
(0) Never
(1) Less than monthly
(2) Monthly
(3) Weekly
(4) Daily or almost daily ☐
Skip to Questions 9 and 10 if Total Score for Questions 2 and 3 = 0</td><td>8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
(0) Never
(1) Less than monthly
(2) Monthly
(3) Weekly
(4) Daily or almost daily ☐</td></tr>
<tr><td>4. How often during the last year have you found that you were not able to stop drinking once you had started?
(0) Never
(1) Less than monthly
(2) Monthly
(3) Weekly
(4) Daily or almost daily ☐</td><td>9. Have you or someone else been injured as a result of your drinking?
(0) No
(2) Yes, but not in the last year
(4) Yes, during the last year ☐</td></tr>
<tr><td>5.How often during the last year have you failed to do what was normally expected from you because of drinking?
(0) Never
(1) Less than monthly
(2) Monthly
(3) Weekly
(4) Daily or almost daily ☐</td><td>10. Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down?
(0) No
(2) Yes, but not in the last year
(4) Yes, during the last year ☐</td></tr>
<tr><td colspan="2">Record total of specific items here ☐
If total is greater than recommended cut-off, consult User’s Manual.</td></tr>
</table>

Form 5 – Alcohol Evaluation Form

CAA ALCOHOL USE EVALUATION FORM

Applicant Name	License Num.	Class	Rank	Date of birth	
AME NAME and Number				Nationality	
Interview and system review				Yes	No
Alcohol intake – amount /type/how often					
Smoking history					
Family history of substance misuse					
Physical dependence – withdrawal symptoms					
Sickness absence record-pattern of frequent, short term, last minute leave is often seen with substance-use disorder Neurological issues					
Cardiac – arrhythmias/hypertension					
Gastroenterology – Gastritis/GORD					
Injuries- recurrent or unexplained					
Legal and social problems					
Marital disharmony					
Psychological problems					
Details of the interview and System review if answer positive					
Examination				NORM.	ABNORMAL
Physical dependence – signs of withdrawal (e.g. irritability, restlessness, apprehension …)					
General appearance- complexion					
Liver damage – spider naevi, hepatomegaly					
Hypertension					
Pancreatitis					
Cardiomegaly, arrhythmias					

Laboratory test	Result
GGT (Gamma-Glutamyl Trasferase)	
MCV (mean Corpuscular Volume	
CDT (Carbohydrate Deficient Transferring)	
Others if indicated (LFTs, Triglycerides, Ferritin, Liver Ultrasound, Urine EtG/ PeTH)	

In the presence of high index of suspicion, the AME will without delay evaluate the applicant to all the assessments as per CAA Alcohol Use Disorder Form and then the AME should refer the case to the SAME and/or CAA for further evaluation recommendation.

Appendix 13 – Sample "Letter of Denial of Medical Certificate"

The following sample letter is to be used by an AME or SAME when an applicant does not pass all requirements for the issue of a medical certificate.

CIVIL AVIATION AUTHORITY

Letter of Denial Issued by AME

Dear (Name of applicant), Date:_____

I have determined, based upon the information on your application for medical certification and my medical examination, that you do not meet the medical standards established by the Civil Aviation Authority (CAA).

Your history of _____ is (are) disqualifying under CAR.FCL 3(Ref) of Civil Aviation Regulations, Medical Standards and Certification.

Therefore, based upon the authority delegated to me by the Administrator of the CAA, your application for medical certification is denied. This denial is not a final agency action under CAR FCL-3.200 of Civil Aviation Authority and is subject to reconsideration by CAA Medical Assessor.

You are cautioned to abide by CAA CAR FCL-3.220 aeromedical certification relating to an applicant's medical fitness for aviation duties as specified in ICAO Annex 1, Chapter 6.

TO REQUEST RECONSIDERATION OF MY DETERMINATION:

The request for reconsideration must be made in writing, within 30 days of the date of the denial and mailed to the following address

Civil Aviation authority,
Flight Safety Department,
Medical Assessor,
PO Box 1, PC 111,
Muscat,
Sultanate of Oman.

WHAT HAPPENS IF I DO NOT ASK FOR RECONSIDERATION?

The CAA considers a failure to request reconsideration of the denial as your withdrawal of the application for medical certification from further consideration.

Yours sincerely,

_____
(Signature & Name of AME)

Appendix 14 – Application for Aeromedical Examiner Designation

SECTION:	PERSONNEL LICENSING AEROMEDICAL FORMS	PELO/210 Rev 02 Nov/21
TITLE:	APPLICATION FOR AEROMEDICAL EXAMINER DESIGNATION	

1. APPLICATION TYPE

☐ Initial issue ☐ Renewal ☐ Change of facility address

2. FACILITY INFORMATION

Name of the Facility:	Trading Name (if applicable):
Facility Address (main location and postal number):	Facility Telephone No.:

3. APPLICANT DETAILS

First Name:	Middle Name:	Last Name:

Gender:	☐ Male ☐ Female		
Nationality:		Name of Employer:	
Mobile Number:		CAA Authorization (designation) Number (if applicable)	
OMAN Postal Address		Oman National/ Resident ID Number (if available)	
Email:		Tel. No. (Office):	

Medical Specialty:
Number of post graduate years in clinical practice:
Do you hold qualification in Aerospace/Aviation medicine? ☐ YES ☐ NO Qualification:_____
Do you have military flight surgeon experience? ☐ YES ☐ NO If yes, please state the details.
Do you have Aviation experience as a pilot? ☐ YES ☐ NO ☐ Other:_____
Do you hold a license to practice medicine in OMAN? ☐ YES ☐ NO • OMAN Ministry of Health (MOH) License No.: _____ Expiry Date: ____/___/____

Do you hold a license to practice medicine overseas? ☐ YES ☐ NO If yes, please state the details. _____

For Renewal only: Number of medical tests conducted: CLASS I: CLASS II: CLASS III: CLASS Cabin Crew: Others:	Number of medical Evaluation boards conducted: As president: As member:

1. **CME RECORDS (APPROVED AEROMEDICAL REFRESHER TRAINING DURING LAST DESIGNATION PERIOD)**

Date (dd/mm/yyyy)	Activity	CME Hours

APPLICANT DECLARATION

I certify that the information provided hereon and in attachments is correct to the best of my knowledge and belief and if granted I hereby accept the authority, duties, and responsibilities, and shall conduct such activities in compliance with CAR FCL-3, and the directives of the Civil Aviation Authority.

SIGNATURE OF APPLICANT (sign inside the above box) Date: _____

Notes:

1. ***All fields are mandatory and must be completed in English.***

Appendix 14 – Cont'd

CAA USE ONLY-APPROVAL		
☐ Recommended for all classes	☐ Not Recommended	☐ Recommended with Restricted class _____
Aeromedical Inspector Name: Signature:	Date:	
Aeromedical Assessor Name: Signature:	Date:	

CHECKLIST
☐ Request Letter from the Examiner
☐ Passport size photo with white background
☐ Passport copy with visa page (if applicable)
☐ Copy of the Applicant's qualifications ***(for Initial only)***
☐ Copy of the Aviation Medicine Certificate (***for Initial only)***
☐ Copy of the CME records for the past two years ***(for renewal only)***
☐ Copy of Oman license
☐ Copy of the CAA medical facility approval
☐ Applicant's Resume stating the applicant's clinical experience.
☐ Fees of OMR /…..should be submitted with Initial and/or renewal applications
☐ Fast Track Application – additional OMR….. (Within ten working days)

Notes:

2. ***All fields are mandatory and must be completed in English.***

Appendix 15 – Aeromedical Declaration Form

This form is completed by the Applicant which is then submitted direct to the AME/ SAME with the Applicant's medical application form. These forms are retained by the AME/SAME and forwarded to the CAA with the result of the examination conducted. The electronic form shall be requested from the CAA website using the following link https://www.caa.gov.om/services-1/flight-safety-1/licensing-application-form.

CAA هيئة الطيران المدني

Declaration Form
Aeromedical Certificate

CANDIDATE DETAILS TO BE COMPLETED BY THE APPLICANT				
First Name	Middle Name	Last Name	Crew Position	License No

OMANI/FOREIGN LICENSE DETAILS			FOREIGN License Details *(if applicable)*	
Type of license	Class	Medical Expiry date	State of Issue	Foreign License No.

CANDIDATE IDENTIFICATION TO BE COMPLETED APPLICANT APPLYING FOR CERTIFICATE					
Gender	Nationality	Passport Number	Place of Issue	Issue Date	Expiry Date
Contact No.	Email Address	Personal Address		Operator Address	

Declaration

I hereby declare that I have carefully considered the statements made above and that to the best of my belief they are complete and correct and that I have not withheld any relevant information or made any misleading statement. I understand, that if I have made any false or misleading statements in connection with this application, or fail to release the supporting medical information, the Licensing Authority may refuse to grant me a medical certificate or may withdraw any medical certificate granted, without prejudice to any other action applicable under Sultanate Oman law. I hereby authorize the release of all information contained in this report and any or all its attachments and all information which I have provided to the CAA and that relates to me to my AME and, where necessary, to:

- The Medical Assessor /or ALSI of my licensing authority; and
- The Medical Assessor /or ALSI of the competent authority of my AME; and
- Other health professionals and administration staff as part of the medical assessment process.

I recognize that these documents or electronically stored data are to be used for completion of a medical assessment and for oversight purposes, providing that I or my physician may have access to them according to Sultanate Oman law. The medical record will become and remain the property of the Licensing Authority. Medical confidentiality will be respected at all times. NOTIFICATION OF DISCLOSURE OF PERSONAL DATA: I hereby declare that I have been informed and I understand that the data contained in my medical certificate application according to CAA.MED Form. for Aircrew and ATCO may be electronically stored and made available to my AME in order to provide historical data required and to the Aeromedical licensing senior inspector (ALSI).

Witness Name	Witness Signature	Date	Applicant Signature

Submit

AGM Form 02 – Declaration Statement Page 1 of 1 Rev 01 – 20 FEB 2022