HONG KONG
CIVIL AVIATION DEPARTMENT

Guidance Notes for Approved Medical Examiners

2nd Edition – September 2022

HONG KONG CIVIL AVIATION DEPARTMENT (HKCAD)
GUIDANCE NOTES FOR APPROVED MEDICAL EXAMINERS (AME)

HKCAD VISION AND MISSION STATEMENTS
&
ENDORSEMENT of DOCUMENT by HKCAD MANAGEMENT

The HKCAD Vision Statement
"Committed to a Safe, Efficient and Sustainable Air Transport System"

The HKCAD Mission Statement
"To ensure that high safety standards for Hong Kong SAR civil aviation are set and achieved in a co-operative and cost effective manner"

Chief, Flight Standards (C,FS) Endorsement

In order to ensure continual compliance with the HKCAD Vision and Mission Statements and the international standards in personnel licensing, this "Guidance Notes for Approved Medical Examiners" is produced for guidance to Approved Medical Examiners to set high standards in completion of regulatory functions in an effective manner. Their use is endorsed for the tasks relating to medical examinations.

The procedures contained in this document are subject to ongoing review and refinement. Every Approved Medical Examiner applying these procedures has the obligation to highlight and suggest any constructive changes or additions that will make their use more effective and efficient.

Signed: _____
Captain Lawrence WONG A/C, FS

Date: 8th September 2022

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GUIDANCE NOTES FOR APPROVED MEDICAL EXAMINERS

These Guidance Notes are written to assist Approved Medical Examiners (AMEs) in carrying out medical examinations and should be read in conjunction with the Standards and Recommended Practices (SARPs) stipulated in the Annex 1 to the Convention on International Civil Aviation - (Personnel Licensing) of the International Civil Aviation Organisation (ICAO).

Additional important information is in the current edition of the ICAO Manual of Civil Aviation Medicine (Doc 8984), CAP 448C Air Navigation (Hong Kong) Order 1995 (AN(HK)O) and Hong Kong Aeronautical Information Circulars (AICs).

Resources online:

The ICAO Manual of Civil Aviation Medicine (Doc 8984) is found at:
http://www.icao.int/publications/pages/publication.aspx?docnum=8984

The AN(HK)O is found at:
http://www.hklii.hk/eng/hk/legis/reg/448C/

AICs are found at:
http://www.ais.gov.hk/HK_AIP/aic.htm

CIVIL AVIATION DEPARTMENT, HONG KONG, CHINA

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CHAPTER 1 GENERAL

1.1 APPOINTMENT OF APPROVED MEDICAL EXAMINERS

1.1.1 The appointment period for successful candidate is normally three years.

1.1.2 A candidate who has a record of any professional misconduct or any offence involved imprisonment, whether in Hong Kong or elsewhere, must provide details to HKCAD at the time of application or as soon as possible if he has been already an AME.

1.1.3 To apply for initial appointment as an Approved Medical Examiner (AME), a medical doctor must meet the following pre-requisites:

(a) He/She must be registered to practise medicine in the state or territory in which medical examinations are to be conducted;

(b) He/She must have completed aviation medicine training acceptable to the HKCAD, such as the Basic and Advanced Course in Aviation Medicine held in UK, the Aviation Medicine for Aviation Examiner and Assessors (Core-Competence) course held in Singapore;

(c) He/She must possess practical experience in aviation medicine acceptable to the HKCAD, such as demonstration with documented evidence of the familiarization/ exposure of the working environment of flight crews and air traffic controllers;

(d) He/She must have access to facilities and equipment to conduct medical examinations; these facilities will be inspected by a person approved by the HKCAD as required;

(e) He/She must have a genuine requirement to hold the AME approval;

(f) For applicants based outside Hong Kong,

(i) he/she must hold AME authority granted by the State's aviation authority of his/her place of business in addition to satisfying the above requirements; and

(ii) not more than three AMEs will normally be appointed in a city or a State at the discretion of the HKCAD.

1.1.4 To apply for renewal of AME appointment, the applicant must meet the following requirements:

(a) Number of medical examinations conducted in the approval period:

(i) Hong Kong based AME must complete at least 30 medical examinations during the three-year approval period;

(ii) AME located outside Hong Kong should normally conduct at least 10 or more Hong Kong medicals# in the appointment period and before submission of reappointment application.

(# If an overseas AME does not meet condition (ii) above, a trial period of one year will be imposed on that AME. If within the trial period, less than 5 Hong Kong medicals are carried out by that overseas AME, HKCAD will consider that the demand for medical examinations at that particular place is not justified for approving any AME there. Reconsideration of AME approval at such location will depend on future demand of medical examinations there, e.g. upon operators' request due to crew basing or proximity of Training Organization.)

(b) have received 90 hours of continuing medical education (CME) or equivalent in the respective fields of specialty for the previous 3-year block period and in which, at least 20 hours of CME are in aviation medicine or equivalent training acceptable to the HKCAD during the three-year approval period;

(c) complete and return the "Self Audit of AME Premises" Form; and

(d) his/her performance during the previous period of appointment will be reviewed by Medical Board.

(Details listed in the "HKCAD AME Appointment/ Reappointment Guidelines" at the Appendix 1)

1.1.5 Consideration for appointment or renewal of appointment depends on industry demand. Candidates who satisfy the above criteria should not expect an automatic appointment or renewal of appointment.

1.1.6 To allow sufficient time for processing, an application for renewal of AME appointment should be submitted to the HKCAD at least three months prior to the expiry date of the existing approval.

1.1.7 The HKCAD reserves the right to amend the AME criteria and/or to grant AME approval to any person as HKCAD thinks fit without further notice.

1.2 AME AS AN AGENT OF THE HKCAD

1.2.1 AMEs are appointed as independent contractors by the HKCAD. The AME should work according to the "Terms and Responsibilities of the AME" (Appendix 2). The AME should be familiar with the current requirements of the HKCAD regarding medical examination protocols, forms to be used, administrative transactions and processes, etc. The AME should ensure that any investigations required for the medical examination, whether routine or additional, are done and the results reviewed. Whenever an AME refers applicants for specialist evaluation (i.e. when an opinion from the specialist is pertinent to the aeromedical decision making) and coordinate for a full medical report from the specialist, the AME has to evaluate the results of the medical examination,

including pertinent specialist reports and investigation results, to provide a recommendation on medical fitness to HKCAD. As such they are expected to exercise impartiality in the capacity of the AME and uphold the standards set forth in ICAO Annex 1 and adhere to the guidance in this publication at all time.

1.2.2 Upon completion of a medical examination, the AME shall ensure that a signed and duly completed medical report in the form of DCA 153 must be submitted to the HKCAD Personnel Licensing Office by the most expeditious means and without undue delay.

1.2.3 **Prevention of bribery:** The AME is prohibited from soliciting, accepting or offering any bribe in conducting their duties as AME, whether in Hong Kong or elsewhere. In conducting the assessments and medical examinations, they must comply with the Prevention of Bribery Ordinance (Cap. 201) of Hong Kong and must not solicit or accept any advantage from others as a reward for or inducement to doing any act or showing favour in relation to their duties as AME.

1.2.4 **Conflict of Interest:** The AME should avoid any conflict of interest situation (i.e. situation where their personal interest conflicts with their AMEs' duties) or the perception of such conflicts. When actual or potential conflict of interest arises, the AME should notify the HKCAD in writing.

1.2.5 Enquiries may be directed to the AME concerned or the HKCAD Personnel Licensing Office (PLO) via email to plo@cad.gov.hk or telephone on (852) 2910 6046.

1.2.6 It should be noted that the HKCAD PLO cannot be held liable for any errors in the professional judgement that an AME may make in carrying out medical examinations.

1.3 LEGAL FRAMEWORK

1.3.1 Director-General of Civil Aviation is delegated under Air Navigation (Hong Kong) Order 1995 to approve medical examiners to conduct medical examinations for the grant of a Hong Kong Medical Certificate. After completing a medical examination, the AME shall make a report to Director-General of Civil Aviation.

1.4 MEDICAL CONFIDENTIALITY

1.4.1 All information obtained by AMEs (including non-medical details such as names and addresses) during or for the purpose of the medical examinations must be regarded as confidential. AMEs must ensure that they are aware of relevant legal constraints such as the Personal Data (Privacy) Ordinance.

1.5 THE HKCAD PERSONNEL LICENSING OFFICE

1.5.1 The HKCAD Personnel Licensing Office is at the following address:

Personnel Licensing Office
Flight Standards and Airworthiness Division
Civil Aviation Department
1/F Civil Aviation Department Headquarters
1 Tung Fai Road
Hong Kong International Airport
Lantau
HONG KONG

Tel: (852) 2910 6046
Fax: (852) 2329 8595
Email: plo@cad.gov.hk

CHAPTER 2 TYPES OF LICENCE AND MEDICAL CERTIFICATE REQUIREMENTS

2.1 INTRODUCTION

2.1.1 All professional flight crew, private pilots and Air Traffic Control Officers must hold a valid licence, of which the medical certificate forms part. Broadly speaking, professional pilots are entitled to undertake commercial flying while private pilots are limited to private recreational flying. Student pilots do not require a licence, and a medical certificate is sufficient to fly solo, under the supervision of a flying instructor. There are separate licences for Air Traffic Control Officers.

2.1.2 In order to qualify for the initial issue of a licence and to maintain its validity, each holder must meet the medical fitness requirements as required by ICAO Annex 1 - Personnel Licensing. To this end the HKCAD issue medical certificates. There are three classes of medical certificate, namely Class One, Two and Three, which are applicable to professional pilots, private pilots and Air Traffic Control Officers respectively.

2.1.3 A sample of the medical certificate is shown at Appendix 3.

2.2 CLASSIFICATION AND VALIDITY OF MEDICAL CERTIFICATES

2.2.1 The Medical Certificate is valid until the last day of the month in which the renewal medical falls due. Unless otherwise specified, to determine the month when a renewal medical falls due the appropriate period from the table below must be added to the date of the medical examination.

Licence	Holder's Age	Class of Medical Certificate	Validity period in months	
CPL / MPL(A) / ATPL	Under 40	1	12	
	40-59	1	(i) Single-crew commercial air transport operations carrying passengers ***Notes: Not applicable to MPL(A) holders.***	6
		1	(ii) Commercial air transport operations other than (i) above	12
	60 or over	1	6 for commercial air transport operations	
PPL/IR	Under 60	1	12	
	60 or over	1	6	
PPL / Student Pilot	Under 40	2	60	
	40-49	2	24	
	50 or over	2	12	
Air Traffic Controller's Licence	Under 40	3	48	
	40-49	3	24	
	50 or over	3	12	

Provided that:

(a) unless otherwise restricted, a Class 1 Medical Certificate will be valid for Class 2 purposes for the period appropriate to age and privileges.

(b) the expiry of any special examination listed on page 1 of the Medical Certificate does not affect the validity of the certificate. However, the Medical Certificate will not be renewed until any expired special examinations have been renewed.

2.2.2 Notwithstanding paragraph 2.2.1 above, the period of validity of a medical certificate may be reduced when clinically indicated. For instance, a holder of a medical certificate must consult an AME following hospital treatment or the commencement of continued treatment with prescribed medication. If the AME believes that the medical certificate holder is no longer medically fit to perform the functions to which his/her licence relates, the AME must advise the medical certificate holder to contact HKCAD without delay regarding the suspension of his/her medical certificate and should inform HKCAD in writing of the case details.

2.2.3 Notwithstanding paragraph 2.2.1 above, the period of validity of a medical certificate may be extended by 14 days, at the discretion of the AME, provided that the following conditions are met:

(a) A medical certificate endorsed with the limitation of "as or with qualified co-pilot only" or "valid only when another qualified ATCO is immediately available to assume your duty" shall **NOT** be eligible for an extension of validity granted by an AME;

(b) The applicant has completed the DCA 153 medical examination including all the applicable special examinations required for the renewal of a medical certificate;

(c) The AME is satisfied that there has been no significant change in the medical condition of the applicant since the last medical examination and that he/she is medically fit to perform the functions to which his/her licence relates;

(d) The AME must cause the medical report(s) to be submitted to HKCAD as soon as practicable; and

(e) The current medical certificate must be stamped and signed by the AME stipulating the specific extension of validity.

2.2.4 There are three special examinations listed on page 1 of the Medical Certificate, namely Electrocardiogram, Audiogram and Ophthalmic Review. Frequency of such examinations are as follows:

(a) Electrocardiogram

Licence	Class of Medical Certificate	Test Requirements and Validity
PPL/IR / CPL / MPL(A) / ATPL	1	• At initial issue • Aged 30 and up to just under 50 – 2 years • Aged 50 or over – 1 year
PPL / Student Pilot	2	• At initial issue • At the first examination after the age of 40 • Aged 50 or over – 2 years
ATCL	3	• At initial issue • Aged 50 or over – 2 years

(b) Audiogram

Licence	Class of Medical Certificate	Test Requirements and Validity
PPL/IR / CPL / MPL(A) / ATPL	1	• At initial issue • Aged under 40 – 5 years • Aged 40 or over – 2 years
PPL / Student Pilot	2	• At initial issue • Aged 50 or over – 2 years
ATCL	3	• At initial issue • Aged under 40 – 4 years • Aged 40 or over – 2 years

(c) Ophthalmic Review

If deemed necessary on clinical grounds, an AME may require an applicant to undergo an ophthalmic review conducted by a registered ophthalmologist.

2.2.5 When a medical certificate is due for renewal, the medical examination required may not be deferred.

2.3 STUDENT PILOT PRIVILEGES

2.3.1 The medical certificate permits the holder, provided he is 17 years or more, to act as pilot in command of an aircraft for the purpose of becoming qualified for the grant or renewal of a pilot's licence, or the inclusion or variation of any rating in a pilot's licence provided that: -

(a) all flights are made within the territorial limits of Hong Kong;

(b) the Medical Certificate is valid at the time of the flight;

(c) the holder complies with any limitations subject to which the Medical Certificate was issued;

(d) no other person is carried in the aircraft;

(e) the holder acts in accordance with instructions given by a person holding a pilot's licence granted under the AN(HK)O as amended, being a licence which includes a flying instructor's rating or an assistant flying instructor's rating entitling him to give instruction in flying the type of aircraft being flown; and

(f) the aircraft is not flying for the purpose of public transport or aerial work other than aerial work which consists of the giving of instruction in flying or the conducting of flying tests.

2.4 APPLICANTS FOR INCLUSION OF AN INSTRUMENT RATING IN A PRIVATE PILOT'S LICENCE

2.4.1 Applicants for inclusion of an instrument rating in a **private pilot's licence** are required to hold the Class 1 medical certificate.

CHAPTER 3 MEDICAL EXAMINATION FORM DCA 153

3.1 INTRODUCTION

3.1.1 Form DCA 153 is to be used for recording the medical examination findings of licence holders for all classes of medical certificates – both initial and renewal examinations.

(Please note: An initial medical examination is to be conducted on the first application for a HKCAD medical certificate, and for applicants whose last medical examination was more than 5 years previously.)

3.1.2 The Medical Assessment and issue of a medical certificate are determined by a person approved by HKCAD on the basis of the information contained in the completed form. It is essential, therefore, that DCA 153 be compiled accurately, completely and in as much detail as possible. This can only be achieved if the history taking and examination have been conducted throughout in accordance with the highest standards of medical practice. The Standards and Recommended Practices (SARPs) which form the basis of the assessment are in Chapter 6 of ICAO Annex 1 but they cannot, on their own, be sufficiently detailed to cover all possible individual situations. It is sometimes possible to issue a medical certificate even though the individual does not reach the laid down standard by taking account of all factors relating to his condition and the circumstances under which he will be using his licence.

3.1.3 Once completed Form DCA 153, with attached medical reports, should be posted to the HKCAD Personnel Licensing Office as soon as possible. To minimize delay, the completed DCA 153, with supporting documents, may be faxed or emailed to the HKCAD but the original must still be posted. Even if the applicant elects not to complete the examination process, the AME must still forward Form DCA 153 and attached reports to the HKCAD with the reason for the failure to complete the form. AMEs should keep a photocopy of the completed form. Recommendation on the fitness of the applicant shall be given after completion of the DCA 153.

3.1.4 The AME should bear three main principles in mind when reporting examination findings:

(a) Is there any reason that the applicant cannot physically or mentally perform the necessary tasks?

(b) Is there any particular risk of physical or mental incapacitation occurring, especially suddenly, during the period of validity of the medical certificate?

(c) Is the flight environment likely to adversely affect any condition present?

3.1.5 Medical confidentiality shall be respected at all times. The AME shall ensure the DCA 153, medical reports and records be securely held with accessibility restricted to authorized personnel.

3.1.6 The AME is ultimately responsible for the entire documentation of the medical examination and the compilation of the results or specialist reports for the medical assessment process. The AME shall sign on the compiled report before submitting to HKCAD as an undertaking for the veracity and completeness of the data submitted.

3.2 BEFORE THE MEDICAL EXAMINATION

3.2.1 Before starting the medical examination, check both the licence and previous medical certificates. If the applicant is not personally known to the AME, he should be asked to produce identification that includes a photograph.

3.2.2 This is most important. If a current certificate or licence is unavailable for inspection, especially if the applicant is not known to you, a telephone call to the HKCAD Personnel Licensing Office is strongly recommended to check that the applicant has been assessed unfit or has had a limitation placed on him previously.

3.3 COMPLETING THE FRONT OF THE FORM

3.3.1 The applicant should complete the first 20 paragraphs of the form. He should sign the declaration in paragraph 21 and the AME should witness the applicant's signature. The applicant being seen by the AME for the first time, whether for an initial or renewal examination should always be interrogated on the data contained in these paragraphs. Dates should be entered in the format dd/mmm/yyyy (e.g.01/Jan/2016).

3.3.2 Items No. 1 to 7 - Personal Details

The full name must be entered, together with the date of birth and other data. A reliable address is necessary, together with an email address and telephone number as it is sometimes necessary to contact the individual. The date of birth is a necessary aid to identification of records.

3.3.3 Items No. 8 to 10 - Licence and Flying Details

The type of licence currently held, or being applied for, shall be clearly indicated and details of any licence already held shall be entered. A record of the total logged flying hours and of the number of hours flown since the previous Hong Kong medical examination is required.

3.3.4 Items No. 11 to 20 - Medical History

These sections together constitute a review of the applicant's lifestyle, personal and family medical history. Some points of importance are outlined below.

3.3.4.1 Item 11 – Contact details of the applicant's usual medical practitioner.

The contact details (name, address, telephone number and email) of the applicant's usual medical practitioner enable the AME to obtain further medical information when appropriate.

3.3.4.2 Item 12 – List of all medications, whether prescribed, over the counter (OTC), vitamins, herbal remedies and supplements.

(a) The medication taken often indicates the presence of a disease or concern about a particular disease and appropriate enquiry should be made about all medications being taken including the reason they are taken and the presence of side effects. Applicants often do not consider it necessary to list herbal remedies, vitamins and supplements in the mistaken belief that they do not have side effects. The AME should specifically ask about them.

(b) When the AME is confirming that the applicant has completed Item 12 correctly, it is a good opportunity to remind the examinee that medication which may have an effect on performance (such as tranquillisers, hypnotics, sedatives and medication with sedating properties etc), should not be taken when flying and if the licence holder is uncertain he should contact his AME.

3.3.4.3 Items 13 to 14 – History on smoking and use of alcohol

This assists in individual risk factor analysis and also provides an opportunity for the AME to give appropriate advice on, e.g. quitting smoking, drinking not more than five unit of alcohol per week, administration of CAGE or Alcohol Use Disorder Identification Test (AUDIT) questionnaire, etc., if necessary.

3.3.4.4 Item 15 – Medical history since last aviation medical examination

The AME should make specific enquiry about medical events since the last aviation medical examination as the HKCAD may not be aware of them. Any significant injury, even if not lasting for 20 days must also be reported. It may be necessary to formally suspend the medical certificate under the provisions of the AN(HK)O, until such time as full recovery has occurred. In such a situation, reinstatement may require a further examination by AME and clearance made by a HKCAD Medical Assessor (AMA). The AME should advise the applicant of the legal requirement that the licence holder must not operate while unwell and, that any sickness or disability lasting 20 days or more must be reported to the HKCAD.

3.3.4.5 Item 16 – Medical History

All items should be answered with a tick (✓) in the 'yes' or 'no' column. Even a remote history of a condition should be answered with a 'yes' tick. All items ticked 'yes' should be detailed in the 'Remarks' column or in paragraph 20 unless the AME knows they have been detailed previously and the condition is unchanged. In this case the item should be annotated "previously reported – no change". If the condition has not been reported previously or it has changed, the AME should fully explore the history of the item, obtain copies of previous reports from any specialist consulted and arrange a further specialist opinion or investigation if these are indicated. If the AME is unsure whether further investigation or opinion is required, he should contact an AMA via the PLO.

(a) Item 16(a) Eye disorders, eye surgery including refractive surgery

A history of eye surgery to correct childhood squints, or any form of refractive surgery should be specifically asked for. A family history of eye disease, particularly of retinal disorders or glaucoma may be relevant. Errors of refraction and the requirement to wear correcting lenses will be noted in the visual acuity section.

Special Considerations

(1) **Refractive Eye Surgery**

Initial applicant who has refractive surgery performed within one year will NOT normally be considered for certification. (Pre-operative refraction for Class 1 must not have exceeded +/- 5.00 diopters, for Class 2 must not have exceeded +5.00 diopters to -8.00 diopters.)

An applicant who has undergone surgery affecting the refractive status shall be assessed as unfit. The applicant should have obtained medical clearance from AMA before resuming flying duties.

Before being cleared back to flight, a report from the treating ophthalmologist is obtained detailing:

(i) Pre-operative visual acuity and dioptres
(ii) Size of the pupil and ablation zone
(iii) Post-operative visual acuity and dioptres
(iv) Results of an objective test of mesopic contrast sensitivity
(v) Ophthalmological examination for any abnormalities
(vi) Any other sequelae.

Expected time frame to obtain Ophthalmologist report:
- 6 months following Photo Refractive Keratectomy (PRK) for myopia
- 6 months and 12 months following PRK for hypermetropia
- Laser Assist in-Situ Epithelial Keratomileusis (LASEK): same as PRK
- 4 weeks and 6 weeks following Laser Assist in-Situ Keratomileusis (LASIK)

Providing that 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 reviewed by the AME. The AME has to file a comment for an AMA to consider.

An annual full ophthalmic report (using Form DCA 153 (Oph)) is required for all classes of licence-holder for four more years post-surgery to assess stability, and subsequent ophthalmic evaluation will be subject to clinical indications (e.g. deterioration in visual acuity).

If the applicant's pre-operative visual acuity was ≥ 6/60 or ≥ -5.00 diopters spherical equivalent, ophthalmic surveillance once every five years is required as for high myopic applicants to assess for retinal abnormalities.

Please note that refractive surgery is always elective and there is never a medical indication for such surgery. It is strongly recommended that an applicant considering refractive eye surgery should first consult an AME.

Remarks:
(i) If the surgery was done 4 years ago or longer, HKCAD may accept the AME's ophthalmic evaluation and the applicant's statement regarding the absence of adverse sequela.
(ii) If the surgery was done within 4 years, the above surveillance procedures remained.

(2) **Cataract Surgery**

The assessment of individuals following cataract surgery should be done on a case by case basis. This should take into account clinical evidence on recovery times and outcomes from modern day surgery. A pilot can be assessed as fit following cataract surgery from 6 weeks post-operatively.

An ophthalmic report (using Form DCA 153 (Oph)) shall be provided and it should include the date of surgery and type of implant used, details of distance and near visual acuities, any post-operative complications, confirmation that the pilot has fully recovered from surgery and that there is no significant photophobia, glare or diplopia.

Note:
(i) Multifocal and bifocal implants are NOT compatible with certification.
(ii) Monovision is not recommended and pilot would require well-tolerated multifocal spectacles in order to meet the distance and near vision standards.

(3) **Glaucoma Surgery**

An ophthalmic report (using Form DCA 153 (Oph)) shall be provided by the ophthalmologist who performed the procedure and should include full details of the treatment carried out, current management, visual acuities and up to date visual field results.

Following selective trabeculoplasty, a pilot may be re-certificated immediately. The assessment of individuals follow other procedures should be done on a case by case basis.

(b) Item 16(b) Ear disease or deafness

A history of ear disease may cause vertigo, hearing problem and/or problem in equalizing the ambient pressure. All these may have safety implication on board. In case of any query, further specialist's view may be required to ensure the applicant is capable for the duty.

(c) Item 16(c) Motion sickness requiring medication

Although motion sickness is not a bar to licensing, some medications to control symptoms cause drowsiness and are not acceptable.

(d) Item 16(d) and 16(j) Hay Fever or Allergy and Asthma or other Lung Disorder

These disorders, as part of an atopic diathesis, may be the cause of acute incapacitation and require special consideration. The sedating effects of some antihistamines are not compatible with flying. Some non-sedating antihistamines have been found to be free of significant side effects and, individual idiosyncrasy apart, may be utilised safely. The asthmatic applicant requires special consideration and full details should be forwarded to the HKCAD.

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(e) Item 16(e) Frequent or severe headaches

Any history of frequent headaches should lead to detailed questioning and the site, duration and severity together with details of any associated symptoms such as vomiting, visual disturbances or abnormal pain should be documented. The use of any medication for treatment or prophylaxis should be noted.

Classical migraine or a diagnosis of "cluster headache" will normally be disqualifying. All details should be submitted to HKCAD.

(f) Item 16(f) Dizziness, fainting or unconsciousness

A history of "dizziness" requires careful discussion. True vertigo, syncope or loss of consciousness is incompatible with medical certification and a full evaluation will be required.

(g) Item 16(g) Epilepsy or fits

A history of epilepsy, whether "grand mal", "petit mal" or "focal" in nature, however remote this diagnosis might be, or whether successful control has been achieved by medication, requires a full report. Often a neurological consultation will be required before a licensing decision can be made by HKCAD.

The term "fits" encompasses a broader spectrum of possible aetiology. A history of a single loss of consciousness will lead to denial, or suspension, of medical certification by HKCAD until full investigation shows a clearly identifiable cause, which presents no significant risk of recurrence. Only in such cases will a certificate be issued or renewed. The importance of obtaining eye-witness reports in all cases of loss of consciousness cannot be over-emphasised.

(h) Item 16(h) Head injury or concussion

A full history and details of any hospital admission or treatment should be obtained in all but the most transient event, and documentation should be sent to HKCAD for consideration. Neurological consultation may be required before certification can be agreed.

(i) Item 16(i) Psychiatric or Nervous Trouble of any sort

The applicant will, in the majority of cases, infer that this refers to emotional or psychiatric illness. A careful history is essential and supportive evidence from the family doctor or hospital may be required before any certification decision can be made by HKCAD.

A history of major psychotic illness will lead to denial of any class of medical certification. Episodes of short lived anxiety or of a single minor depressive illness where well defined and non-recurring precipitating factors were evident, may be considered acceptable for medical certification. To ensure clinical stability, a 3-month period of observation after stopping the antidepressant with no suggestion of recurrence of symptoms and satisfactory medical and/or peer monitor reports (as appropriate) would be required prior to the consideration of recertification. All available data should be referred to HKCAD.

(j) Item 16(k) Heart trouble or high/low blood pressure

A history of myocardial infarction, coronary artery by-pass surgery or angioplasty and other significant cardiac pathology must result in a report to HKCAD with full details. Certain protocols and assessments will be followed, that may result in certification in some cases.

Antihypertensive medication can cause side effects and this is the reason for applicants to be grounded for at least the first two weeks when commencing new medication or change the dose of medication. Once the applicant's blood pressure is under control and no side-effects from medication were noted, the applicant can return to flying or controlling duty.

(k) Item 16(l) Anaemia or other blood disorder

Flying at height is at risk of hypoxic insult. If there is anaemia or other blood disorder found in the history or medical examination, full evaluation is required and the details should be forwarded to HKCAD. Pilots exposed to reduced barometric pressure and reduced partial pressure of oxygen are at increased risk for suffering hypoxia if anaemic.

(l) Item 16(m) Stomach, liver or intestinal disorder

Transient attacks of gastro-enteritis need not necessarily interfere with a fit assessment. A history of peptic ulceration, duodenitis or pancreatitis requires that evidence of complete healing is provided before HKCAD will certify fitness. Endoscopic confirmation of ulcer resolution is normally required. Recurrent episodes of peptic ulceration or of duodenitis suggest the possibility of alcohol abuse.

A history of inflammatory bowel disease, provided the disease is inactive, well controlled by suitable medication or treated by radical surgery may not be disqualifying, but full details will be required and should be submitted to the HKCAD for assessment.

(m) Item 16(n) Diabetes, thyroid or other hormone disease

Diabetes mellitus is a relative common disorder which is of major aeromedical concern. Abnormalities of thyroid function will preclude aircrew from flight duties. Full evaluation of the applicants should be obtained and forwarded to HKCAD.

(n) Item 16(o) Sugar or protein in the urine

This will require investigation and a detailed report should be sent to the HKCAD.

(o) Item 16(p) Kidney stone or blood in the urine

A history of urinary calculus needs to be explored and the details provided to HKCAD. Necessary investigations are likely to include KUB X-ray or ultrasound of renal tract and biochemistry to discover the cause of the stone formation. The presence of parenchymal stones only may allow unrestricted certification but if stones are present in the calyces or collecting system, then certification may not be possible. A history of urinary calculus will usually require surveillance imaging on the second and seventh years.

The finding of haematuria requires investigation as soon as possible, and investigation details and diagnosis must be forwarded to HKCAD.

(p) Item 16(q) Musculo-skeletal disorder

Musculoskeletal injury or disorder will affect one's mobility, strength, and/or cause pain which may result in sudden change in function. All these are of aeromedical concerns and should be recorded on the DCA 153.

(q) Item 16(r) Malaria or other tropical disease

Aircrew operate into many areas of the world where tropical or other exotic disease may be endemic. A history of any such illness and its treatment should be documented. Discussion concerning prevention and prophylaxis may be needed.

(r) Item 16(s) A positive HIV test

A positive response here will almost certainly mean that the individual has been extensively counselled by other agencies. It should be noted that a positive HIV status may not automatically debar the individual from continuing medical certification, but frequent and detailed follow up reviews will be necessary. These will include blood tests, physical examination and neuropsychological testing. Certification is unlikely if certain antiviral medications need to be taken and an operational limitation will normally be applied in those who continue to be fit for certification. Progression to an AIDS-defining illness is disqualifying.

(s) Item 16(t) and 16(u) Alcohol/substance abuse or related problem and use of opioids, cannabinoids, sedatives, cocaine, hallucinogens, solvents, recreational drugs or other psychoactive substances

A history of alcohol or drug abuse, however remote that might be, is of interest to HKCAD. All available information should be referred to HKCAD for consideration. The candidate may be required to undergo review by a qualified AME/AMA, a psychiatrist or an addiction specialist before fitness for any class or certificate can be considered.

(t) Item 16(v) Admission to hospital overnight

The indication for such admission should be noted and results of any medical or surgical treatment forwarded to HKCAD as soon as possible.

(u) Item 16(w) Any other illness or injury

These should be briefly noted and, where relevant, details forwarded to HKCAD as soon as possible.

3.3.4.6 Item 17 – Personal History

(a) Item 17(a) Refused life insurance

A positive response probably indicates a significant medical event and should prompt enquiries with details forwarded to HKCAD as soon as possible.

(b) Item 17(b) Denied, deferred or delayed in an application or renewal of an aviation medical certificate by any licensing authority

A positive response should prompt enquiries for details. The details from the applicant, including whether a medical certificate/assessment has previous been refused, denied, revoked, suspended, deferred, suspended or delayed and if so, the reason, should be forwarded to HKCAD as soon as possible.

(c) Item 17(c) Convicted of a civil or criminal offence

A positive response may indicate a personality disorder and details should be forwarded to HKCAD as soon as possible.

3.3.4.7 Item 18 – Family History

A positive family history is a risk factor for some diseases and gives the AME an opportunity for counselling.

3.3.4.8 Item 19 – Female conditions

Pregnancy results in an 'unfit' assessment until it is clear that the pregnancy is uncomplicated and in the middle trimester.

3.3.4.9 Item 20 – Remarks

This space may be used by the applicant or the AME to elaborate any significant point of history.

3.3.5 Item 21 – Declaration and Consent to obtain medical information

The applicant is required to sign the declaration and consent paragraph. The AME should witness the signature. Failure by the applicant to sign will result in a denial of all classes of medical certificate by HKCAD. The AME should still forward the form to HKCAD noting that the applicant has refused to sign item 21.

3.3.6 Items 22 – Comments and Reports

The overall comments on the applicant's fitness and any relevant recommendations should be made on Item 67 at page 4 of Form DCA 153. The AME is reminded to keep copies of all forms and reports sent to HKCAD.

3.3.7 Items 23 to 67 – Medical Examination Findings

The medical examination should be completed in accordance with good medical practice.
For item 25, if the waist circumstance is greater than 102 cm, obesity should be checked. If the neck circumference is greater than or equal to 40 cm, obesity/sleep apnea should be checked.

All items should be completed at all examinations except items 45, 53, 54, 65 and 66 which are only required if clinically indicated, items 58, 62 and 65 which are only required for an initial examination and items 60 and 61 which are required at specific intervals.

3.3.7.1 Items 55 to 58 – Vision

(a) Visual Requirements for Certification

The visual requirements for various certificates are outlined in the Standards and Recommended Practices in ICAO Annex 1 - Personnel Licensing.

Visual acuity tests should be conducted in an environment with a level of illumination which corresponds to ordinary office illumination (30 – 60 cd/m^2).

(b) Examination Equipment

(i) Several charts of Snellen distant test types.

(ii) Near and intermediate vision should be tested using the Faculty of Ophthalmologists reading chart, standard N type.

(iii) The RAF near point rule for measuring accommodation and convergence.

(iv) A Maddox Rod (details please refer to paragraph 3.3.7.1.10).

(v) An Ishihara book of pseudo-isochromatic plates is essential for assessment of colour perception.

(vi) The fundi should be routinely examined, for which an ophthalmoscope will be necessary.

Any significant changes from the previous examination should be referred for an ophthalmological opinion. The issue of a medical certificate by HKCAD will be deferred until such time as this opinion is obtained and any significant disorder is excluded or corrected.

3.3.7.1.1 Distance Visual Acuity

This should be measured binocularly and in each eye separately without glasses as well as with glasses when available. Each eye must reach the relevant licensing standard of 6/9 with or without correction for Classes One and Three, 6/12 for Class Two. Applicants for all classes of Medical Certificate must achieve at least 6/6 vision using BOTH eyes with or without correction.

Special Consideration for High Myopias (≥ 6/60 or ≥ -5.00 D)

A high myope may be assessed fit provided that

(i) The corrected visual acuity can meet the visual requirement as described in 3.3.7.1.1;
(ii) The ophthalmic report (using Form DCA 153 (Oph)) shows no significant abnormalities;

(iii) An ophthalmic report (using Form DCA 153 (Oph)) is submitted every five years.

There are no limits applied to uncorrected visual acuity. Contact lenses or high index spectacle lenses shall be used.

3.3.7.1.2 Intermediate Vision

This should be measured binocularly and in each eye separately without glasses as well as with glasses when required. The test type must be held at a distance of 100 cm and the candidate shall be able to read N14 type, either with or without correction.

3.3.7.1.3 Near Visual Acuity

This should be measured binocularly and in each eye separately without glasses as well as with glasses when required. The applicant should hold the test type at a distance selected by that applicant in the range of 30-50 cm and shall be able to read N5 type, either with or without correction.

3.3.7.1.4 Accommodation

This should be measured in each eye separately and recorded in centimetres. It is most conveniently measured using the RAF Near Point Rule. It should be measured both with and without glasses if available. The candidate is instructed to read out the smallest print he can and, as the drum is moved at a steady slow speed towards his eyes, he is instructed to say when the print first becomes blurred. This distance shown by the rear edge of the slide carrying the drum, is recorded in centimetres.

3.3.7.1.5 Convergence

The same Near Point Rule can be used for testing convergence. The side of the drum bearing the line and the dot is used. The candidate fixes on the target and is instructed to say when he/she notices a doubling of target (2 vertical lines or dots).

3.3.7.1.6 Prescription of Glasses/Contact Lenses

Review by a vision care specialist is required at least every two years for an applicant requiring visual correction, and a lens prescription should be submitted after every review.

Special Consideration for Contact Lens

Applicants may use contact lenses to meet the visual requirement provided that

(i) the lenses are monofocal & non-tinted;

(ii) the lenses are well tolerated;

(iii) a pair of suitable correcting spectacles is kept readily available whilst exercising the privileges of the licence; and

(iv) the use at any time of lenses to mould the cornea is not permissible.

3.3.7.1.7 Field of Vision

The field of vision should be tested by the confrontation test. Any abnormality affecting the field of vision should be commented upon.

3.3.7.1.8 Cover Test

The cover test is used for the detection of strabismus or heterophoria.

Distance: The candidate is instructed to look at an object at a distance of 6 metres and the position of the corneal reflections of room and other lights is observed. If both corneal reflections are central or symmetrical, no manifest strabismus is present.

If one reflection is eccentric, a manifest strabismus may be present, or the pupil of that eye is placed eccentrically on the visual axis.

The eye in which the reflection is central should then be covered. If the other eye now moves to assume fixation, that eye exhibits a manifest strabismus which may be convergent, divergent, vertical or alternating depending on the direction of the movement made.

If no movement takes place, an eccentric pupil is present.

If both reflections are central or symmetrical, heterophoria may be present. With the candidate fixing the distant target, one eye should be covered and observations made to see whether any movement of the eye behind the cover occurs, and also whether any movement occurs when the cover is removed. The test should be repeated with the other eye. If no movement occurs on covering or uncovering either eye, orthophoria is present.

If the eye converges when covered and diverges to the straight position when uncovered, esophoria is present. If the eye diverges or elevates when covered, and converges or depresses when uncovered, exophoria or hyperphoria is present.

The degree of deviation should be recorded as slight/moderate/marked; latent; convergent/divergent/vertical deviation; rapid/slow/nil recovery.

Near: This test may be combined with that of ocular movement. While the candidate's eyes are still following the moving target held at a distance of 1/3 metre, one eye is occluded and the target brought to rest in the mid-line. When the occluder is removed, the type of deviation and its recovery should be noted.

3.3.7.1.9 Colour Perception

This test is only required on initial examination unless the AME has some reason for expecting it to be abnormal.

Ishihara Plates

(a) Each eye should be tested separately. The pseudosiochromatic Ishihara plates are made up of primary colours printed on a background of similar dots in a confusion of colours. These dots are in patterns, shapes, numbers, or letters that would be recognized by a normal individual but not perceived by those with colour perception defects.

(b) The plates must be presented in a random order as it is very easy to learn the sequence of the plates. The test should be conducted in good DAYLIGHT conditions or by the use of an approved 'daylight' viewing lamp. Tungsten lighting appreciably alters the colour values of the plates and assessment errors can result. Applicants are shown the plates held at a distance of 1 arm length's and tilted so that the plane of the paper is at right angles to the line of vision. The numerals that are seen on plates are stated and each answer should be given without more than 3 seconds delay. Any applicant who makes more than one error in the sequence of plates should be regarded as temporarily unfit until such time as a lantern test has been conducted.

Lantern Test

(a) For applicants who fail the colour plate tests, colour lanterns can be used to screen for the more serious red-green colour deficiencies. Nowadays the lantern available in Hong Kong is the Optec 900 lantern. AMEs who wish to book the test for applicants could make their arrangement directly with the Optometry Clinic in the Hong Kong Polytechnics University. (http://www.polyu.edu.hk/so/patients.php?lang=en&pageid=286)

(b) Other methods for assessing colour deficiency such as Colour Assessment and Diagnostic (CAD) Test would also be accepted as alternative means for lantern test.

3.3.7.1.10 Measure of Heterophoria

Maddox Rod Test

The Maddox Rod is a disc of red glass in the surface of which are moulded a number of grooves. If a spotlight is viewed through the disc the light is seen as a red line, the direction of which is at right-angles to the direction of the grooves. As the line and spotlight are dissimilar images, fusional control of the extraocular muscles is prevented and the covered eye takes up its position of rest.

With the candidate looking, with both eyes open, at a small light source at an equivalent distance of 6 metres, the Maddox Rod is placed in a trial frame before the right eye with the grooves horizontal. If binocular vision is present, a vertical red line is seen by the right eye and the spotlight by the left eye and both are seen simultaneously. If either the line or the light is not seen, binocular vision is absent, the vision of one eye being suppressed.

If orthophoria is present the red line appears to pass through the spotlight. If the red line does not pass through the spotlight the candidate is asked to which side of the spotlight the red line lies.

As the eye reverses and inverts images, in heterophoria the red line appears to go in the opposite direction to the movement of the eye. Hence, with the Maddox Rod before the **RIGHT** eye, if the red line is:

To the patient's right of the light = Esophoria
To the patient's left of the light = Exophoria

Increasing powers of prisms are placed before the right eye, with the base of the prism towards the side on which red line lies, until the red line appears to pass through the spotlight. The power of the prism, in prism dioptres, and the type of horizontal heterophoria it has corrected, are recorded.

The test is repeated in a similar manner with the Maddox Rod placed in front of the right eye with the grooves vertical, producing a horizontal red line, and the degree of hyperphoria is recorded:

If the red line is above the light = Left hyperphoria
If the red line is below the light = Right hyperphoria

Heterophoria may also be measured by means of a Maddox hand frame. There are various types of this instrument, one being shaped like a lorgnette holding a Maddox Rod in on eyepiece and a rotating prism in the other. To measure any deviation, the prism is rotated until the candidate sees the red line coinciding with the spotlight. The strength of the prism required is indicated on the scale engraved on the frame.

Another type is known as the Maddox Rod and Risley rotary prism.
Prisms can also be obtained as a bar containing different strengths of prism. There are also a variety of optical testers which measure heterophoria.

Maddox wing test

The Maddox Wing measures the size of heterophorias (latent deviations) and small heterotropias (manifest deviations) at near when normal retinal correspondence (NRC) is present. It is especially helpful when patients present with symptoms of diplopia (double vision) with no apparent cause. Unsuspected torsional deviations may also be revealed where there are no symptoms present. It is a quick and convenient method of measuring the size of a deviation and is generally used in association with a number of other tests before a full diagnosis is determined.

The Maddox Wing test is performed at near with the instrument held in reading position, slightly inferior (approximately 15° depression and 33 cm away). The room or location of the test should be brightly illuminated and the patient's optical correction (e.g. glasses, bifocals, multifocals, contact lens) is required to be worn. In the event that correction cannot be worn due to the obstruction of vision through the eye piece, lenses may be placed within the lens holder before each eye. The examiner instructs the patient to hold the Maddox Wing and identify the number that the white (vertical arrow) and red (horizontal arrow) arrows point to on their respective scales. 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 for Class 1 or 3 Medical Certificate. A fit assessment may be considered if an orthoptic evaluation demonstrates that the fusional reserves are sufficient to prevent asthenopia and diplopia.

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 for Class 2 Medical Certificate.

3.3.7.2 Items 59 and 60 – Hearing Tests

There are three routine tests of hearing – the spoken voice test, the whispered voice test and audiometry. The spoken voice test and the whispered voice test should be administered at every examination. If the applicant is unable to meet the required standard during these 3 tests, he/she may still be declared fit provided he/she can show a normal hearing performance in a functional hearing test. Additionally two tuning fork tests are used to distinguish between conductive and sensorineural deafness.

3.3.7.2.1 The Spoken Voice Test

The spoken voice test requires the applicant to be able to hear "an average conversational voice in a quiet room using both ears, at a distance of 2 metres from the examiner, with his/her back turned to the examiner". A quiet room is defined as one in which the intensity of the background noise is less than 35 dB(A). The sound level of an average conversational voice at 1 m from the point of output (lower lip of the speaker) is 60 dB(A) and at 2 m is 54 dB(A).

3.3.7.2.2 The Whispered Voice Test

The whispered voice test is not required.

3.3.7.2.3 Audiometry

An audiogram is required at the initial medical examination for all classes of licence holders and at certain intervals after their 40th birthdays. For details please refer to Chapter 2 of this publication and the date of the next audiogram is due is recorded on page 1 of the medical certificate. Audiometers are to be calibrated regularly, preferably with a minimum of an annual calibration. The zero (0) reference level is that of the pertinent standards of the current edition of the Audiometric Test Methods, published by the International Organization for Standardization (ISO). The subject shall not have a hearing loss, in either ear separately, of more than 35 dB at any of the frequencies 500, 1000 or 2000 Hz, or more than 50 dB at 3000 Hz.

3.3.7.2.4 The Functional Hearing Assessment

The functional hearing test is normally carried out by a training captain during a flight. In the case of a Class 3 applicant it is normally carried out by an ATCO supervisor in a simulator or a typical air traffic control working environment. The examiner (i.e. training captain) is expected to answer the following 6 questions for a crew member and appropriately similar questions for ATCO:

(a) Can the applicant hear adequately in the aircraft during all phases of flight?

(b) Does the applicant's hearing loss interfere with his/her ability to communicate with Air Traffic Control or other flight crew members during all phases of flight?

(c) Can the applicant accurately identify non-routine R/T phraseology?

(d) Can the applicant identify accurately the identification signals of navigation beacons?

(e) In your opinion, does the applicant's hearing loss interfere with flight safety?

(f) Have you any other observations or comments?

(The samples of the speech discrimination test forms are at Appendices 4 and 5)

3.3.7.2.5 The Rinne Test

The Rinne test compares the duration of bone conduction of sound with that of air conduction. A 512 Hz fork with a flat base is placed firmly over the mastoid process. When the sound is no longer heard the vibrating fork is transferred to a position which places the prong at 2.5 cm from the auditory meatus. Normally the sound is heard twice as long by air conduction than by bone conduction. In conductive deafness, the fork will be heard more clearly and longer by bone conduction that by air conduction. This is said to be negative Rinne. Conversely if air conduction is better than bone conduction (positive Rinne) but both are relatively diminished it indicates sensorineural deafness.

3.3.7.2.6 The Weber Test

A 512 Hz tuning fork with a flat base is place on the vertex of the skull. The sound originating in the vibrating fork is conducted by bone to both ears. The normal individual hears the sound equally in both ears. With unilateral conductive deafness the sound is lateralised and heard better in the affected ear. With unilateral sensorineural deafness the sound is louder in the good ear.

3.3.8 Item 67 – Comments

Item 67 should be used by the AME to make additional comments on items not adequately covered elsewhere in the form. In particular the AME should note if the applicant has a stutter or other speech defect which could interfere with his ability to communicate.

The AME should give overall comments on the applicant's fitness for the respective Class of Medical Certificate being applied and any relevant recommendations. In case the applicant fails/refuses to complete the examination, the AME shall record it and send the Form DCA 153 to the HKCAD. The opinion of the AME is highly valued by the AMA, who has no information other than that contained in the Form DCA 153 on which to base his/her decision on whether to issue a Medical Certificate. If the AME has any doubts about the fitness of the applicant to hold a medical certificate, he should arrange to speak to the AMA by contacting the PLO.

3.3.9 Item 68 – AME's Declaration

The AME is required to sign the form confirming that he has personally examined the applicant. It is acceptable for a suitably qualified assistant, such as a nurse, to carry out those parts of the examination that is within their competence, but **the bulk of the examination must be carried out by the AME who takes the ultimate responsibility for the accuracy of the examination findings and the compilation of entire document** before submitting to the HKCAD.

3.4 GENERAL NOTES ON SPECIFIC MEDICAL CONDITIONS

3.4.1 RESPIRATORY DISEASE

3.4.1.1 Asthma

A history of past asthma, which has been absent for a period of several years, where bronchospasm cannot be detected on examination, particularly following a provocative period of severe exercise, and where lung function is normal, may be granted certification by the HKCAD. The occasional occurrence of mild bronchospasm in response to viral infections or severe exercise, provided relief can be obtained and maintained by inhaled steroids up to 800 μg betamethasone a day and/or sodium cromoglycate and/or beta agonists, where lung function is unimpaired and where regular medical supervision can be assured, is usually acceptable. Details should be forwarded to the HKCAD.

3.4.1.2 Chronic Bronchitis and Emphysema

Each case must be individually assessed. The frequency of infective episodes, restriction of physical activity, the requirement for continuous medication and the inevitable restriction of lung function will all be taken into consideration by the HKCAD.

3.4.1.3 Sarcoidosis

Active sarcoidosis is a bar to any medical certification. Once the sarcoidosis is deemed to be inactive, no treatment is being given, and the disease is investigated and shown to be limited to hilar lymphadenopathy, a professional pilot may be returned to flying with a restriction on his licence. The restriction may be removed by the HKCAD after a further period of observation (minimum one year). However, because of the risk of sudden death, applicant with cardiac sarcoid will be unfit for certification.

3.4.1.4 Spontaneous Pneumothorax

This condition has potentially serious consequences in aviation. All cases must be investigated to establish whether any underlying pathology exists. If no pathology is discovered, HKCAD may permit the medical certificate holder to return to flying when the lung has fully re-expanded and after a period of 6 weeks has elapsed from the time of the pneumothorax. If a second one should occur, almost certainly an endoscopic pleurectomy will be necessary before recertification will be reconsidered. A successful operation will permit certification after full recovery.

3.4.1.5 A Chest X-ray is required for initial medical examination only, unless clinically indicated.

3.4.2 CARDIOVASCULAR DISORDERS

3.4.2.1 General

Any history of a possible cardiac event, or referral for cardiologist consultation should be specifically sought, at both initial and renewal medical examinations of all licence holders. The physical examination of the cardiovascular system should record any evidence of premature ageing or hyperlipidaemia, as well as examination of the heart, blood pressure, retinal vessels and the peripheral pulses. The AME will be aware that young applicants have a low likelihood of ischaemic heart disease but that increasing age is a risk factor which potentiates any other risks that may be present.

3.4.2.2 Abnormal Findings

The following notes will cover those abnormal findings which experience has shown to be commonest, but they are not totally comprehensive. In any case of doubt the AME should inform the PLO, especially when professional licence holders are involved.

3.4.2.3 Hypertension

This is the single most common problem at examination. The blood pressure shall be recorded at each examination.

(a) If the systolic blood pressure (SBP) is >160mm Hg or the diastolic blood pressure (DBP) is >95mm Hg after several readings during the examination, the applicant is unfit until investigated and treated.

(b) If the SBP is >140 and <160 or the DBP is >90 and <95, the applicant may be assessed fit but must be referred for investigation and for further BP readings. Often an ambulatory 24 BP recording is the best way to establish the presence of significant hypertension.

(c) If the SBP is <140 and DBP is <90, no action is required except suggestions on lifestyle modification may be appropriate.

The diagnosis of hypertension should require cardiovascular review to include potential vascular risk factors. In aviation, most of the currently employed agents are permissible as follows:

1. non-loop diuretic agents;
2. angiotensin converting enzyme (ACE) inhibitors;
3. sartans (angiotensin receptor blocking agents - ARB's);
4. slow channel calcium blocking agents (CCB's);
5. certain (generally hydrophilic) beta-blocking agents.

The alpha 1 blocking agents, i.e. doxazosin, prazosin and the centrally acting products clonidine, moxonidine and methyldopa, are not permitted. On starting treatment or changing the medication or dose, the applicant should be assessed temporarily unfit until 2 weeks after stable blood pressure has been achieved without significant side effects such as orthostatic hypotension.

3.4.2.4 Abnormalities found on clinical examination of the heart

The commonest problems in this category are murmurs, clicks, extra sounds, displacement of the cardiac impulse or abnormalities of rhythm. In a proportion of murmurs the diagnosis of a valve lesion may be clear, but quite commonly the cause may not be obvious. Such individuals should not be accepted on the assumption that all they have is a 'functional' murmur. Echocardiography provides a safe non-invasive method of elucidating the cause in the majority of such cases. The finding of an abnormality of rhythm will always require an ECG even when this is not due under HKCAD rules. A long rhythm strip should accompany a standard 12 lead trace.

3.4.2.5 Cardiac Valve Lesions

(a) Mitral Valve

The HKCAD usually considers mitral stenosis as disqualifying. Mitral regurgitation of mild degree may be acceptable 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 HKCAD. Mitral leaflet prolapse is now a frequent diagnosis confirmed by echocardiography and may be acceptable, subject to cardiac specialist's advice that the degree found carries no increased risk.

(b) Aortic Valve

A clinically significant degree of aortic stenosis is disqualifying. Cases having just a slight murmur or click in the aortic area may be considered after echocardiography has shown no significant malformation or narrowing. Aortic incompetence may be more benign than stenosis, but requires full cardiological proof that the lesion is haemodynamically insignificant. There should be no demonstrable abnormality of the ascending aorta on 2D Doppler echocardiography. Regular cardiological review should be required to monitor the progress, and multi-pilot limitation may be required in certain cases.

(c) Valvular Surgery

A history of valvular surgery or replacement is normally considered by the HKCAD as disqualifying.

3.4.2.6 Abnormalities of the Electrocardiogram

(a) Tachycardia and Bradycardia

Sinus tachycardia over a rate of 100 beats per minute at rest may be due to emotion, but consideration should be given to possible pathological causes. Similarly, bradycardia may be the result of physical fitness or the taking of undeclared beta-blocking drugs. Rates of 45 beats per minute or less deserve scrutiny for a cause. A 24 hour ECG is often required. Other investigation(s) may be needed when clinically indicated.

(b) Arrhythmias

The appearance of any obvious arrhythmia on the tracing should be taken as a requirement to record a 100 cm strip of lead II to allow adequate data for interpretation. Physiological sinus arrhythmia is acceptable as a normal finding.

(c) Ectopic beats

Supraventricular ectopic beats are not regarded as significant when occasional and isolated. Similarly, isolated ventricular ectopic beats (VEBs) of uniform origin need not affect licensing. Frequent VEBs, multiform VEBs, couplets, salvos and 3 consecutive VEBs or more may have serious significance and require grounding and a cardiological review before a fit assessment can be made.

(d) Paroxysmal tachycardias

A history of any form of paroxysmal tachycardia usually requires restriction and can be disqualifying.

(e) Atrial Fibrillation and Flutter

These arrhythmias are disqualifying. Certification may be considered after full investigation. An operational restriction may be applied in such cases.

(f) Ventricular Tachycardias

A history of ventricular tachycardia requires a full report to be forwarded to the HKCAD.

(g) Conduction Defects

Sinus Pauses: any pause between beats exceeding 2 seconds requires investigation. Subsequently, a report should be forwarded to the HKCAD.

(i) First Degree AV Block

Defined as a PR interval exceeding 0.20 seconds without failure to conduct, this finding may be normal in fit young subjects if the interval becomes normal with exercise induced tachycardia. Older subjects and those in whom the condition has newly appeared will require specialist evaluation.

(ii) Second Degree AV Block

These cases will always require full cardiac investigation including ambulatory monitoring.

(iii) Complete Heart Block

This condition is not acceptable even with a satisfactory pacemaker.

(iv) Right Bundle Branch Block

Minor degrees of this condition characterised by RSR complexes seen in VI-V2 with otherwise normal conduction are usually insignificant and acceptable. Full right bundle branch block may be acceptable for certification but will require cardiological assessment. An exercise test to the Bruce protocol (to assess exercise tolerance - a minimum walking time of 9 minutes is expected), a 24 hour ECG and an echocardiogram are the minimum investigations required.

(v) Left Bundle Branch Block and bifasicular block

Many cases of LBBB and bifasicular block result from cardiac pathology and the HKCAD will not normally consider the applicant fit for any form of certification. Occasionally, after extensive investigation, where no apparent cause can be found, cases may be approved for certification subject to assessment by the HKCAD.

(vi) Wolff-Parkinson-White Syndrome and other types of pre-excitation

Various forms exist of this pre-excitation by accessory conducting fibres. The phenomenon may be intermittent and thus discovered only after initial acceptance with a previously normal ECG. The condition is frequently disqualifying, but in those forms unassociated with a risk of paroxysmal tachycardia, a fit assessment may be considered after cardiological investigation and/or after ablation therapy.

(h) Other Abnormalities of the ECG

The commoner problems noted relate to those changes, which may indicate the possibility of symptomless ischaemic heart disease or other serious condition. These mostly consist of T wave or S-T segment abnormalities, QRS axis changes, or the unheralded appearance of ECG evidence of myocardial infraction. AMEs will recognise the advantage of keeping copies of tracing of all aircrew for comparison in future. Where a tracing is queried, the HKCAD certification may be withheld until the doubt has been eliminated. The HKCAD AMAs are very willing to give advice as to the details of the required investigations.

3.4.2.7 Coronary Artery Disease

This condition is a major cause of concern in aviation cardiology because it is capable of producing sudden incapacity without previous warning. It follows that cases of symptomatic coronary artery disease (including medically treated angina are unacceptable for any form of certification.

(a) Applicants with a Past History of Coronary Artery Disease

The cardiologist's report and hard-copy-exercise ECG must be forwarded to the HKCAD for assessment. Restricted certification after an interval may be acceptable following MI, CABG or angioplasty in certain cases.

(b) Applicants with Suspected Asymptomatic Disease

AMEs should discuss with a HKCAD Medical Assessor who will advise on the investigations, as appropriate. As these measures are frequently costly to the applicant, there is again every advantage in seeking such advice before referring the individual to the cardiologist.

(c) Follow up of Coronary Artery Disease

This is of prime importance. The principles are based upon continuing absence of symptoms, cardiologist's review, further exercise ECGs, not less frequent than annual, together with other periodic investigations as required by the HKCAD. Expense needs to be considered by private applicants, especially if they are seeking to obtain or to maintain an unrestricted licence.

3.4.2.8 Congenital Artery Disease

These conditions may be reported as past history or discovered at initial examination. It is necessary to obtain exact details of previous investigations or surgical procedures for a proper certification assessment. The more serious defects are usually disqualifying even after apparently successful surgery because of the increased risk of arrhythmias or of developing haemodynamic disabilities. The following conditions may be considered for certification after full medical details have been considered:-

(a) Persistent Ductus Arteriosus

Successful closure or excision is acceptable.

(b) Coarctation of the Aorta

Applicants who underwent repair before the age of 12 may be considered for unrestricted certification if they have a normal blood pressure and exercise tolerance. After that age a normal blood pressure is essential for restricted licensing, but it should be remembered that at least a third of cases have other abnormalities.

(c) Pulmonary Stenosis

Mild deformities may be acceptable with or without surgery, but full cardiological evaluation is necessary.

(d) Septal Defects

Individuals with small ventricular septal defects, not requiring surgical closure will be considered for restricted certification. Surgery increases the risk of arrthythmia, and individual assessment is required. Atrial septal defects - an ostium secundum defect, with or without surgery may be acceptable for unrestricted certification. Ostium primum and sinus venosus defects will be considered on an individual basis, but an operational restriction is likely to be required.

3.4.2.9 Cardiomyopathies

The various forms of this condition are likely to be disqualifying because of the risk of sudden incapacity.

3.4.2.10 Other Cardiac Conditions

It is not possible to catalogue the various licensing requirements for all of the less common cardiac problems that may arise. Advice can always be obtained from a HKCAD Medical Assessor.

3.4.3 GASTRO-INTESTINAL DISORDERS

The commonest gastro-intestinal disorder encountered amongst professional aircrew is acute gastro-enteritis. Naturally, in a population which is largely engaged in travel and eating in strange places the incidence of these problems is high. Constant education of aircrew by the AME concerning preventive measures is important. The most important gastro-intestinal disease as far as certification is concerned is peptic ulceration. Demonstration of an active ulcer calls for immediate grounding and a temporarily unfit assessment. This unfit assessment will normally only be lifted when active ulceration has been demonstrated to be no longer present by endoscopy. H. pylori should be eradicated. Adequate follow up must be arranged and reports forwarded to the HKCAD.

3.4.4 GENITO-URINARY DISORDERS

The urine must be examined at each examination. Albuminuria requires investigation. Proven orthostatic albuminuria is compatible with medical certification. Haematuria, whether frank or microscopic, requires investigation and reports should be available for certification assessment.

(a) Renal Colic/Calculi

The occurrence of an attack of renal colic means that the medical certificate will be suspended. Full investigation will be required and must demonstrate that no other calculi of significance are present before considering recertification. If stone-free after an episode of renal colic or treatment, the usual requirement for imaging is annual for the first two years and then once again at seventh year. If there is ongoing evidence of stones and a restriction is in place, annual surveillance (plain abdominal X-rays for KUB and/or ultrasound/CT scan of kidneys) is required.

3.4.5 DISTURBANCES OF CONSCIOUSNESS AND HEAD INJURIES

(a) Epilepsy and Fits

A diagnosis of any form of epilepsy is disqualifying for all categories of licence.

(b) Vasovagal Attacks

These are due to transient cerebral ischaemia caused by a variety of factors such as: sudden change of posture, fasting, fatigue, unpleasant emotional upset etc. Pulse rate and blood pressure usually fall, unlike epilepsy where pulse remains full and strong. Vasovagal syncope occurring in middle life requires cardiovascular investigation.

THE BASIC RULE IS THAT ANY SINGLE EPISODE OF DISTURBANCE OF CONSCIOUSNESS IS DISQUALIFYING UNTIL A FULL ASSESSMENT HAS BEEN MADE BY THE HKCAD.

(c) Head Injuries

It is impossible to lay down hard and fast rules as to when a pilot would be returned to flying duties following a head injury. However, the following factors are normally taken into account: -

(i) Past history of febrile convulsions

(ii) A family history of epilepsy

(iii) Post traumatic epilepsy (within 7 days of the injury)

(iv) Any intracranial haematoma

(v) Depressed skull fracture

(vi) Post traumatic amnesia

(vii) Demonstration of any residual neurological signs

(viii) Any penetrating head injury

(ix) Any loss of consciousness

In patients suffering from severe head injury there is an overall tenfold increase in the risk of developing epilepsy. About 5% of these will show as early post traumatic epilepsy (PTEP). 75% of cases of PTEP will occur in the first year and 85% by the end of 2 years post injury. If any of the predisposing factors listed above is present, the opinion of a consultant neurologist should be sought before submitting details for certification.

3.4.6 GLYCOSURIA AND DIABETES MELLITUS

If glycosuria is detected during routine medical examination, it must be investigated and the details forwarded to HKCAD. It may be due to an altered renal threshold for glucose or to diabetes. In the symptomatic patient, a random plasma glucose of 11.1 mmol/L or more is diagnostic. If hyperglycaemia is not so marked then two further measures may be employed (a) estimation of fasting blood sugar and (b) an oral glucose tolerance test. WHO diagnostic criteria are listed below:

2006 WHO diagnostic criteria for diabetes and intermediate hyperglycaemia.

Diabetes	
Fasting plasma glucose 2-hr plasma glucose*	≥ 7.0 mmol/l (126mg/dl) or ≥ 11.1 mmol/l (200mg/dl)
Impaired Glucose Tolerance (IGT)	
Fasting plasma glucose 2-hr plasma glucose*	< 7.0 mmol/l (126mg/dl) and ≥ 7.8 mmol/l and < 11.1mmol/l (140mg/dl and 200mg/dl)
Impaired Fasting Glucose (IFG)	
Fasting plasma glucose 2-hr plasma glucose*	6.1 to 6.9 mmol/l (110mg/dl to 125mg/dl) and (if measured) < 7.8 mmol/l (140mg/dl)

*Venous plasma glucose 2-hr after ingestion of 75g oral glucose load

*If 2-hr plasma glucose is not measured, status is uncertain as diabetes or IGT cannot be excluded.

Those patients with "impaired glucose tolerance" carry an increased risk of (i) developing frank diabetes (5% p.a.) and (ii) vascular disease e.g. coronary artery disease. The HKCAD decision concerning certification will depend upon the type of diabetes.

(a) Type I - (Insulin Dependent) Diabetes Mellitus (IDDM)

The incidence of hypoglycaemia in Type 1 diabetics is of the order of 10% per annum and some do lose "hypoglycaemic awareness". Thus insulin dependent diabetics are normally unacceptable for **ALL** forms of certification.

(b) Type II - Non Insulin Dependent Diabetes Mellitus (NIDDM)

(i) Diet controlled

If the diabetes is controlled by diet alone it is acceptable for all types of certification. Adequate supervision is essential, since even type II diabetics may develop complications such as retinopathy. Annual review is required as a minimum and should include blood sugar records, urinalysis, HbA1c, retinal examination and exercise ECG if clinically indicated. Reports should be forwarded to the Personnel Licensing Office.

(ii) Oral Hypoglycaemic Agents

Both sulphonylureas (e.g. glibenclamide) and biguanides (e.g. metformin) are in general clinical use. The incidence of hypoglycaemia with sulphonylureas is of the order of 2%-20% per annum, and they are normally unacceptable for all forms of certification.
As the incidence of hypoglycaemia with metformin is only of the order of 0.10% per annum professional certificate holders may be considered for "multi-crew operations" subject to meticulous control, satisfactory reports from the pilot's endocrinologist and assessment by the HKCAD. In these circumstances, Class 2 certification will also be considered.

It is essential that aircrew have satisfactory control before being returned to the operational environment. They should be free from diabetic symptoms and maintain good nutrition.

The aircrew's metabolic control should be good and should not focus solely on blood glucose. In order to decrease cardiovascular risk, a holistic approach should be taken. The targets for the relevant parameters are shown below,

Good control	
Glucose: Fasting Post-prandial peak	 < 6.7 mmol/l < 9.0 mmol/l
HbA1c	< 6.5%
Blood pressure	130/80 mmHg
Total cholesterol	< 4.8 mmol/l
LDL-C	< 2.5 mmol/l
Triglycerides	< 2.3 mmol/l
HDL-C	> 1.0 mmol/l

The AME must liaise closely with the physician/endocrinologist treating the aircrew, in order that the benefits of both disciplines can be consolidated to produce a fair and objective assessment. Obesity is associated with increased risk of diabetes and dyslipidaemia. Therefore, all medical certificate holders should be aware of their Body Mass Indices (BMI). For those BMI regarded as obesity, further medical evaluations such as Exercise Stress Test, fasting lipids, fasting blood sugar, etc, would be required to confirm the physical well beings.

3.4.7 HIV testing is required ONLY at initial medical and when clinically indicated.

3.4.8 Psychoactive substances screening is required when clinically indicated. (For details please refer to CAD 373 – Screening Programme for Air Crew in Hong Kong on Psychoactive Substances)

3.4.9 PSYCHIATRIC DISORDER/ MOOD DISORDER

A history of major psychotic illness will lead to denial of any classes of medical certification. Episodes of short lived anxiety or of a single minor depressive illness where well defined and non-recurring precipitating factors were evident, may be considered acceptable for medical certification. To ensure clinical stability, a 3-month period of observation after stopping the antidepressant with no suggestion of recurrence of symptoms and satisfactory medical and/or peer monitor reports (as appropriate) would be required prior to the consideration of recertification.

3.4.10 MENTAL HEALTH PROBLEM

The applicant's history and symptoms of disorders that might pose a threat to flight safety should be identified and recorded.

A comprehensive mental health examination covers (1) Appearance; (2) Attitude; (3) Behavior; (4) Mood; (5) Speech; (6) Thoughts process and content; (7) Perception; (8) Cognition; (9) Insight; and (10) Judgement.

The symptoms of concern may include but not limited to: (1) use of alcohol or other psychoactive substances; (2) loss of interest/energy; (3) eating and weight changes; (4) sleeping problems; (5) low mood and, if present, any suicidal thoughts; (6) family history of psychiatric disorders, particularly suicide; (7) anger, agitation or high mood; and (8) depersonalization or loss of control.

For initial HKCAD medical certificate applicant, the following should be enquired in the history taking into personal, social, family and vocational context and recorded in item 65 of DCA 153, if any positive findings.

(i) general attitudes to mental health, including understanding possible indications of reduced mental health in themselves and others;

(ii) coping strategies under periods of psychological stress or pressure in the past, including seeking advice from others;

(iii) childhood behavioral problems;

(iv) interpersonal and relationship issues;

(v) current work and life stressors;

(vi) overt personality disorders.

If there are signs or established evidence that an applicant may have a psychiatric or psychological disorder, the applicant should be referred for specialist opinion and advice.

During renewal medical examination, the following should be enquired and recorded in item 65 of DCA 153.

(i) current work and life stressors;

(ii) coping strategies under periods of psychological stress or pressure in the past, including seeking advice from others;

(iii) any difficulties with operational crew resource management (CRM);

(iv) any difficulties with employer and/or other colleagues and managers; and

(v) interpersonal and relationship issues, including difficulties with relatives, friends, and work colleagues.

If there are signs or established evidence that an applicant may have a psychiatric or psychological disorder, the applicant should be referred for specialist opinion and advice.

A variety of psychological testing instruments to assess mental health and wellbeing to assist screening for the presence or absence of common mental health conditions, making a formal diagnosis of a mental health condition, or assessment of changes in symptom severity can be available in https://www.psychologytools.com/download-scales-and-measures/,e.g., Hamilton Rating Scale For Anxiety, Patient Health Questionnaire 9 (PHQ-9) , or Hamilton Rating Scale For Depression, etc.

Established evidence should be verifiable information from an identifiable source related to the mental fitness or personality of a particular individual. Sources for this information can be available from accidents or incidents, problems in training or proficiency checks, behaviour or knowledge relevant to the safe exercise of the privileges of the applicable licence(s).

CHAPTER 4 OTHER SPECIAL TOPICS

4.1 PREGNANCY

A certificate holder is obliged to inform the HKCAD should she become pregnant. She will be assessed as unfit for certification until the beginning of the 14th week of pregnancy when, on receipt of a report from her obstetrician or General Practitioner confirming good health and the estimated date of delivery, a restricted ("as or with co-pilot" or "safety pilot") certificate is acceptable until the beginning of week 27 when the woman is again assessed as temporarily unfit. During the middle trimester, she must be under regular medical review and contact her AME should any complications develop and inform HKCAD accordingly.

A pregnant Air Traffic Control Officer will be allowed to continue to exercise the privileges of her licence up to six weeks before the estimated date of confinement but will be restricted by a proximity endorsement requiring another similarly qualified controller to be available and able to take over from her in an orderly manner should she feel faint or unwell. She is also obliged to notify the HKCAD of any complications or medication other than the usual iron and vitamin supplements.

A satisfactory report at least four weeks after delivery, and after the post natal check, should be received from the supervising doctor confirming a complete return to pre-pregnancy health. This will enable the HKCAD to confirm the return to unrestricted certification for all classes.

4.2 MALIGNANT DISEASE

Malignant disease is the third commonest cause of medical certification denial after cardiovascular disease and neuropsychiatric problems. Recertification requires consideration of the primary treatment, and then an assessment of the risk of sudden or subtle incapacitation due to secondary deposits.

(a) Primary treatment

Pilots will be grounded during and for at least two weeks after radiotherapy because of possible systemic effects. Similarly a pilot should not fly during chemotherapy, and any resumption will depend on the absence of systemic symptoms and normal haematology. Although adjuvant chemotherapy may be less toxic, it may still affect blood cells, and for this reason the above guidelines apply. Adjuvant hormone treatment may be acceptable if the pilot is fit in all other respects. In all cases of malignancy, the certificatory assessment will be made by the HKCAD after full details of each individual case have been assessed.

(b) Risks of incapacitation due to secondary disease

That a recurrence of a particular primary tumour will lead to a sudden incapacitation depends firstly on the actual risk of metastatic disease and secondly on the site of the secondary deposit. The recurrence rate per year of a particular tumour can be calculated from survival curves, and will depend on the stage and grade of the primary. The commonest sites of metastatic disease are lymph nodes, liver, lung, bone, bone marrow and brain. Clearly the risk of incapacitation is extremely high in a pilot with a brain metastasis, and relatively low in one with a liver secondary.

The predilection of certain tumours for certain metastatic sites is well known, and this, in combination with the risk of recurrence, will allow some sort of incapacitation 'weighting' to be applied to an individual pilot. Thus a pilot who has had a 4 mm thick melanoma removed has a 50% five year survival, and an approximately 10% chance of his first metastasis being in the brain. Since the risk of metastatic disease decreases with time, this pilot would need to be grounded until that risk has reached acceptable levels, and then allowed to be back to multi-crew flying. Conversely, a pilot with a Dukes' B carcinoma of the colon also has an approximately 50% five year survival, but the most likely site of metastasis is locally or in the liver, with a small risk of incapacitation. This pilot could be returned to flying in a two crew capacity after recovery from the operation, assuming no adjuvant treatment was planned. Good follow up is important for continued certification.

Some tumours can now be staged so accurately with tumour markers, that if all is satisfactory after the primary treatment, no limitation on flying is necessary. A pilot who had treatment for a stage 1 teratoma of the testis, and whose markers returned to normal, might thus be given an unrestricted certification. Continued certification would depend on close follow up, with copies of medical reports required by the HKCAD.

***** END *****

APPENDIX 1 – HKCAD AME APPOINTMENT/ REAPPOINTMENT GUIDELINES

HKCAD AME Appointment/ Reappointment Guidelines

民航處 CIVIL AVIATION DEPARTMENT

Initial AME Appointment:

	Requirements
(1) Medical Licence to Practise	HK Based AME • Register to practise medicine in Hong Kong • Current Annual Practicing Certificate Non-HK Based AME • Medical registration/ licence granted by the National Medical Regulator in the state of practice • Must hold AME authority in the state of practice
(2) Aviation Medicine Training * *(Candidates shall have their basic aviation medicine training according to the aeromedical system in any of countries specified)*	**Class 1, 2 and 3** (a) **Trained in UK**: Basic AND Advanced Course in Aviation Medicine (UK), or (b) **Trained in Australia**: Australian Certificate of Civil Aviation Medicine, or (c) **Trained in Singapore**: Aviation Medicine for Medical Examiners and Assessors (Competency-based), or (d) **Other Advanced Courses in Aviation Medicine** #
(3) Access to facilities and equipment to conduct medical examinations	Complete and return the "Declaration of Clinic Facilities and Equipment" Form
(4) Practical Experience in Medical Examinations	Familiarization/ exposure of the working environment of flight crews or ATCOs (Compatible with the requirement in ICAO Annex 1)
(5) Declaration of Good Standing	See Note below

Note: A candidate who has a record of any professional misconduct or any offence involved imprisonment, whether in Hong Kong or elsewhere, must provide details to HKCAD at the time of application or as soon as possible if he has been already an AME.

Remarks:

* HKCAD has the final decision on the acceptance of the Aviation Medicine Training not listed above.

Advanced Courses mean: (1) Diploma in Aviation Medicine, or
(2) Master courses in Aviation Medicine, etc.

Reappointment of AME:

In addition to the initial requirements, applicants should have the followings:

	Requirements
(1) Medical Examinations	HK Based AME Must conduct at least 30 medicals in the appointment period and before submission of reappointment application Non-HK Based AME Depend on industry demand and preferably should conduct at least 10 or more medicals ^ in the appointment period and before submission of reappointment application
(2) Continuous Medical Education (CME) in relation to Aviation Medicine	Documentary evidence of achieving a total of 90 CME points (i.e. equivalent to 90 hours) within 3-year period of appointment, in which at least 20 points (i.e. 20 hours) shall consist of Aviation Medicine content
(3) Access to facilities and equipment to conduct medical examinations	Complete and Return the "Self Audit of AME Premises" Form
(4) Performance	AME Performance will be reviewed by HKCAD Medical Board
(5) Declaration of Good Standing	See Note above

Remarks:

^ If an overseas AME does not meet the "10 medicals" requirement, a trial period of one year will be imposed on that AME. If within the trial period, less than 5 Hong Kong medicals are carried out by that overseas AME, HKCAD will consider that the demand for medical examinations at that particular place is not justified for approving any AME there. Reconsideration of AME approval at such location will depend on future demand of medical examinations there, e.g. upon operators' request due to crew basing or proximity of Training Organization.

Disclaimer:

- Candidates who satisfy the above criteria should not expect an automatic appointment or renewal of appointment. HKCAD has the final decision on whom to appoint or reappoint.
- Exemption may be granted to the person approved by Director-General of Civil Aviation.

APPENDIX 2 – TERMS AND RESPONSIBILITIES OF THE APPROVED MEDICAL EXAMINER (AME)

Terms and Responsibilities of the Approved Medical Examiner (AME)

GENERAL

1. The AME shall undertake the medical examinations as set out in the AME Approval and the Guidance Notes for AMEs.

2. The AME shall inform the HKCAD if the approval or certification criteria are no longer met.

3. The AME shall meet the registration, licensing and fitness to practise requirements of the Hong Kong Medical Council or the respective Medical Regulatory Body of the State in which the AME practises.

4. In case, for any reason, the AME is no longer entitled to practise medicine in the State of his/her medical registration, the AME approval will be deemed to be suspended. The AME **MUST** also inform HKCAD as early as possible.

5. The AME shall comply with the regulations, law, policies and procedures, explanatory material and other guidance on civil aviation matters issued by the HKCAD.

6. It is the AME's responsibility to remain up to date with the latest guidance material issued by the HKCAD. The AME shall ensure that a procedure is in place to keep up to date with the HKCAD's policies and procedures, and that email is accessed at least once a month.

7. The AME shall examine and assess applicants according to the requirements as specified by the HKCAD.

8. All examination and investigation documents must be made available by the AME to the HKCAD for audit purposes. The reports of medical examinations and supporting information shall be submitted to the HKCAD promptly, and no longer than 2 weeks following the undertaking of the medical examination.

9. The AME shall notify any change in an applicant's fitness assessment to the HKCAD in writing.

10. AME shall maintain up-to-date knowledge of clinical and aeromedical practice.

11. The AME shall not change a decision made by the HKCAD.

12. The AME shall respect confidentiality at all times and shall not divulge any information obtained from an individual in respect of an application for a medical certificate without the informed consent of the individual concerned.

13. The AME shall demonstrate adequate facilities, procedures, documentation and functioning equipment suitable for aeromedical examinations. The HKCAD may specify specific items of equipment that must be used for reasons of standardization and quality control.

14. The AME shall demonstrate and maintain a professional and safe standard of practice.

AUDIT

15. The AME shall permit auditors appointed by the HKCAD to conduct visits to their practice premises, with or without notice.

16. The AME shall inform the HKCAD if any AME Certification held, issued by another Aviation Authority, is suspended or revoked and on what grounds.

17. The AME shall inform the HKCAD if they are subject to a written complaint about their aeromedical practice, or disciplinary investigation or proceedings by a medical regulatory body.

18. The AME shall, at least 4 weeks prior to any change in practice address, postal address, email address or contact telephone number give written notification to the HKCAD of such a change.

19. The AME shall have adequate professional indemnity cover for their aeromedical practice.

20. The security of aeromedical documentation and certificates shall be ensured by the AME.

21. The AME shall not represent the HKCAD or respond to media enquiries on behalf of the HKCAD without the consent of the HKCAD.

22. Upon retirement as an AME or revocation of an approval, an AME shall return all AME and other stamps to the HKCAD and destroy any unused examination forms and medical certificates.

23. Upon retirement as an AME or revocation of an approval, an AME shall manage all licensing medical records as directed by the HKCAD.

24. Any contravention of these Conditions may result in enforcement investigation and action by the HKCAD.

Glossary of Terms:

AME – Approved Medical Examiner

HKCAD – Hong Kong Civil Aviation Department

APPENDIX 3 – SAMPLE OF THE MEDICAL CERTIFICATE

VALIDITY

Date of Examination

Expiry Date(s)

(i) Class 1 for single-crew commercial air transport operations carrying passengers

(ii) Class 1 for commercial air transport operations other than (i) above

(iii) Class 2

NOTES

1. Every holder of a licence should securely attach the Medical Certificate to the licence. When a person holds more than one licence, the Medical Certificate should be securely attached to the licence in use.

2. A renewal medical may be undertaken up to 28 days before the expiry date of the current Certificate. When arranging a medical examination always inform your examiner if any of the special examinations listed on page 1 are due.

3. This Certificate shall be deemed to be suspended in the event of any incapacitating injury, illness or confirmation of pregnancy. Specific details, including Certificate holders' responsibilities with regard to notification, may be found in Article 20(8) of the Air Navigation (Hong Kong) Order 1995 as amended. Furthermore, certificate holders shall consult an Approved Medical Examiner following hospital treatment or the commencement of continued treatment with prescribed medication.

DCA 152 (Feb 09)

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CIVIL AVIATION DEPARTMENT, HONG KONG, CHINA

MEDICAL CERTIFICATE

CAD REF NO./LICENCE NO.

I, the undersigned, being a person approved to issue Medical Certificates assess that

Full Name:

Date of Birth:

Meets the standards for a Class One Medical Certificate for

Commercial Pilot's Licence / Airline Transport Pilot's Licence

Limitations

Signature

Date of Issue Stamp

Expiry Date (Refer to Page 4)

The following special examination(s) expire at the end of the month shown below

Electrocardiogram

Audiogram

Ophthalmic Review

NOTE: No entry or alteration may be made to this Certificate except by an approved person.

No. MC077346

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APPENDIX 4 – PILOT'S INFLIGHT SPEECH DISCRIMINATION TEST

Civil Aviation Department
Hong Kong

MEDICAL IN CONFIDENCE

Pilot's Inflight Speech Discrimination Test

Dear Training Captain,

In accordance to ICAO guidance, hearing loss greater than the requirements may be acceptable provided that there is normal hearing performance against the flight deck noise in the cockpit upon speech and beacon signals. This test should be carried out in the cockpit of the type of aircraft for which the pilot's licence and ratings are valid. Both aviation-relevant phrases and phonetically balanced words should be used in the speech material for discrimination testing.

Name of Pilot: ..... License Number: .....

Place of Test: ..... Aircraft: .....

Can the subject hear adequately in the Aircraft during all phases of flight?	Yes	No
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?	Yes	No
Can the subject identify non-routine RT phraseology accurately?	Yes	No
Can the subject identify the identification signals of Navigation Beacons accurately?	Yes	No
In your opinion, does the subject's hearing loss interfere with flight safety?	Yes	No

1 (Apr 2016)

Any other observations or comments:

Signed: ..... Date of Test: .....

Name: .....

Position: .....

Please complete the form and return to CAD Personnel Licensing Office at the following address:

Personnel Licensing Office
Flight Standards and Airworthiness Division
Civil Aviation Department
1 Tung Fai Road
Hong Kong International Airport
Lantau, HONG KONG

Tel: (852) 2910 6046
Fax: (852) 2329 8595
Email: plo@cad.gov.hk

APPENDIX 5 – ATCO OPERATIONAL SPEECH DISCRIMINATION TEST

Civil Aviation Department
Hong Kong

ATCO Operational Speech Discrimination Test

Dear Manager of Air Traffic Services/ Supervisor of ATCO

Recent medical examination shows that the medical certificate holder named below requires an operational speech discrimination test. Please complete the following assessment and forward it to the Personnel Licensing Office at the address at the foot of the page.

This test should be undertaken in a noise field corresponding to normal working conditions. The test can be undertaken over several days to assess each aspect of the working task.

Name of the Certificate Holder: .....

ATC License Number : .....

Place of Test: .....

Date of Test: .....

Can the subject hear RT communications satisfactorily?	Yes	No
Can the subject hear RT communications satisfactorily in the presence of background noise in their own working environment eg. equipment alarms, telephones?	Yes	No
Can the subject hear flight crew voice communications satisfactorily in the presence of background noise from the flight deck/cockpit?	Yes	No

1 (Apr 2016)

Can the subject identify non-routine RT phraseology accurately?	Yes	No
Does the subject's hearing loss interfere with their ability to communicate effectively with flight crew members?	Yes	No
Does the subject's hearing loss interfere with their ability to communicate effectively with colleagues in their own working environment?	Yes	No
In your opinion, does the subject's hearing loss interfere with flight safety?	Yes	No
Any further comment on the subject's performance:		

Name of Manager ATS/ Supervisor of ATCO : ..... Signed: .....

Position : ..... Date: .....

Please complete the form and return to CAD Personnel Licensing Office at the following address:

Personnel Licensing Office
Flight Standards and Airworthiness Division
Civil Aviation Department
1 Tung Fai Road
Hong Kong International Airport
Lantau, HONG KONG

Tel: (852) 2910 6046
Fax: (852) 2329 8595
Email: plo@cad.gov.hk

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