REPUBLIC OF MAURITIUS

DEPARTMENT OF CIVIL AVIATION
Sir Seewoosagur Ramgoolam International Airport,
Plaine Magnien

MAURITIUS CIVIL AVIATION REQUIREMENTS

MCAR-1

DESIGNATED AVIATION MEDICAL EXAMINER MANUAL

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Foreword

This Designated Aviation Medical Examiner Manual has been prepared by the Personnel Licensing Division of the Department of Civil Aviation for the use of and guidance to designated aviation medical examiners, designated in terms of MCAR-Part-MED of the Mauritius Civil Aviation Requirements to perform medical examinations or tests required for the issuing of medical certificates to licence holders requiring medical certificates and Cabin Crews in line with the Standards and Recommended Practices of ICAO Annex 1.

This manual contains procedures, guidelines, information and instructions on the manner in which those designated Aviation Medical Examiner duties are to be performed. All designated aviation medical examiners are performing their duties on behalf of the Authority in accordance with MCAR-Part-MED and are required to comply with the requirements of MCAR-Part-MED and to apply the procedures contained in this Manual.

Adherence to the provisions of this manual is mandatory and any non-compliance may result in the suspension or revocation of the approval granted

Any comments and recommendations should be forwarded to the Deputy Director of Civil Aviation (Regulatory) of the Department of Civil Aviation of Mauritius

I.POKHUN
Ag Director of Civil Aviation

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Record of Amendments

The Director of Civil Aviation is the only person who may authorise amendments to the Designated Aviation Medical Examiner Manual.

Amendment No.	Date	Pages Affected	Date Entered	Initials

Note: For ease of document control, when amended, this document will be re-issued in full as an electronic copy Portable Document File (PDF) on the Department of Civil Aviation web-site. Each page will indicate the edition number, the effective date, and the total number of pages in the document. This document may be printed (in full or in parts) – but once printed this document becomes uncontrolled. Before use, approved medical examiners should check the Department of Civil Aviation, PEL Division of the DCA web-site for the current release edition.

Definitions

"accredited medical conclusion" means the conclusion reached by one or more medical experts acceptable to the Authority for the purposes of the case concerned, in consultation with flight operations or other experts as necessary;

"air ambulance" means an aircraft used for the purposes of transporting a patient, or a person for whom there can be reasonable expectations that they will require medical attention during the transportation, and equipped in accordance with the provisions of MCAR-AOCR-Helicopter Supplement.

"cabin crew member" means a licensed crew member who performs, in the interest of safety of passengers, duties assigned by the operator or the PIC of the aircraft, but who shall not act as a flight crew member

"co-pilot" means a licensed pilot serving in any piloting capacity other than as pilot-in-command but excluding a pilot who is on board the aircraft for the sole purpose of receiving flight instruction;

"crew member" means a person assigned by an operator to duty on an aircraft during flight time;

"*DAME*" means Designated Aviation Medical Examiner and refers to all examiners designated in accordance with MCAR-Part-MED of the Mauritius Civil Aviation Regulations (MCAR).

"*Authority*" means the Director of Civil Aviation.

"fatigue" means a physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness, circadian phase, or workload (mental and/or physical activity) that can impair a crew member's alertness and ability to safely operate an aircraft or perform safety-related duties;

"flight crew member" means a licensed crew member charged with duties essential to the operation of an aircraft during flight time;

"human factors principles" means the principles which apply to aeronautical design, certification, training, operations and maintenance of aircraft, and which seek safe interface between the human and other system components by proper consideration to human performance;

"human performance" means the capabilities and limitations of a human being that have an impact on the safety and efficiency of aeronautical operations and services;

"likely", in the context of the medical provisions, means with a probability of occurring that is unacceptable to the Medical Assessor

"medical Assessment" means the evidence issued by a Contracting State that the licence holder meets specific requirements of medical fitness

"medical assessor" means a physician, qualified and experienced in the practice of aviation medicine, who evaluates medical reports submitted to the Authority by medical examiners;

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

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

"Medical examiner" means a physician with training in aviation medicine and practical knowledge and experience of the aviation environment, who conducts medical examinations of fitness of applicants for licences or ratings for which medical requirements are prescribed

"*PEL inspector*" means a Personnel Licensing Inspector who is an employee of the DCA working within the Personnel Licensing Section or responsible for the Personnel Licensing Unit.

"Pilot-in-command" means the pilot responsible for the operation and safety of the aircraft during flight time;

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

(a) constitutes a direct hazard to the user or endangers the lives, health or welfare of others; and/or

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

"psychoactive substances" means any substance with psychotropic effects, excluding caffeine and tobacco, but which includes the following:

(a) alcohol

(b) narcotic analgesics such as opiates;

(c) illicit substances such as cannabis and cocaine;

(d) sedative hypnotics;

(e) hallucinogens;

(f) central nervous system depressants; and

(g) central nervous system stimulants, including volatile solvents

"*professional suitability*" means a demonstrated willingness to work cooperatively with DCA to uphold the principles of aviation safety.

"safety-sensitive personnel' means persons who might endanger aviation safety if they perform their duties and functions improperly. This definition includes, but is not limited to, flight crew, cabin crew, aircraft maintenance personnel and air traffic controllers.

"DAME" means Designated Aviation Medical Examiner who has the authority to perform medical examinations for Class 1, 2, and 3 medical certificate holders

"significant', in the context of the medical provisions, means to a degree or of a nature that is likely to jeopardize flight safety.

"skills test" means any practical test conducted towards the issuance or re-issuance of a license holder's licence and/or rating.

"valid" when used in connection with a licence, rating, certificate, validation, authority, approval or similar document means -

(a) that the expiry date on the document, if any, has not been exceeded;

(b) that the document has been issued legally and properly to its holder, and has not been suspended or cancelled by the issuing authority; and

(c) that all requirements, prescribed by these Regulations in respect of the document, have been complied with;

Abbreviations

ATS	Air Traffic Services
CCM	Cabin Crew Member(s)
DAME	Designated Aviation Medical Examiner
DCA	Department of Civil Aviation
ICAO	International Civil Aviation Organisation
MCAR	Mauritius Civil Aviation Requirements
PEL	Personnel Licensing
PLI	Personnel Licensing Inspector
SARPS	Standards and Recommended Practices

Chapter 1

General

1.1 Purpose

1.1.1 This Manual outlines the practices and procedures to be followed by all designated aviation medical examiners within and outside Mauritius Adherence to the procedures and guidelines contained herein are mandatory as all examiners are carrying out their duties on behalf of the Director of Civil Aviation, which is their foremost responsibility.

1.1.2 This chapter provides general introductory information, as well as other general information, the nature and scope of which does not lend itself to be incorporated into other chapters of this Manual.

1.2 Application

1.2.1 This manual will apply to aviation medical examiners designated in accordance with MCAR-Part-MED of the *Mauritius Civil Aviation Requirements* (MCAR).

1.2.2 The procedures and instructions contained in this Manual cannot cater for all situations therefore good judgment must be applied by examiners in the use of this Manual.

1.3 Preparation and Distribution

This Manual has been prepared by the Personnel Licensing (PEL) Division. Preparation, distribution, amendment and cancellation of the material contained in this Manual will continue to be carried out by the PEL Division in line with the procedures contained in the PEL manual, A copy of this Manual and amendments thereto will be issued to all PEL inspectors and designated aviation medical examiners.

1.4 Revisions

To keep pace with civil aviation advancements, good regulations and directives require continuous updating. All amendments must be made in accordance with the procedures contained in the PEL Handbook,

1.5 Applicability of Statutory Requirements

1.5.1 A designated aviation medical examiner carries out medical examinations for licence holders on behalf of the Authority and each examiner is designated based upon the particular individual's experience.

1.5.2 The public's protection is safeguarded by the *Mauritius Civil Aviation Requirements* (MCAR) requirements and the associated technical standards. It is the designated aviation medical examiner's responsibility to be familiar with all statutory requirements and to ensure that they ensure during the course of their duties that they are complied with. No deviation from safety standards is permitted.

1.5.3 Nothing in this Manual should be taken as contravening or superseding any statutory requirement. Designated aviation medical examiners must refrain from expressing opinions, which could be construed as being in disagreement with any statutory document.

1.6 Code of conduct

1.6.1 DAMEs are performing their medical examinations on behalf of the Authority and when making application for designation, they must declare that -

1.6.1.1 They have not been denied designation as a DAME at any previous occasion,

1.6.1.2 They are aware that designation is a privilege and not a right and is granted at the sole discretion of the Authority,

1.6.1.3 They are aware that designation may at any time be withdrawn for good reason,

1.6.1.4 They are familiar with the contents of all regulations that applies to their designation,

1.6.1.5 They are aware that honesty and integrity are essential pre-requisites for designation and the maintenance thereof.

1.6.2 All DAMEs must undertake to at all times:

1.6.2.1 Provide factually correct information to the DCA,

1.6.2.2 Comply with the applicable regulations as contained in the Civil Aviation Regulations and MCAR-Part-MED as pertaining to their designation,

1.6.2.3 Uphold and maintain the DCA medical examination standards and protocols,

1.6.2.4 Conform to all procedures of the regulations and this manual,

1.6.2.5 Inform DCA within 30 days of any changes in contact information

1.6.2.6 Exercise their duties as DAMEs without bias and prejudice,

1.6.2.7 Be honest and fair in all assessments,

1.6.2.8 Act professionally and with integrity, and

1.6.2.9 Ensure that any potential conflict of interest with any candidate is declared to the Medical Assessor in advance of any assessment being conducted.

Chapter 2

Civil Aviation Medical System

2.1 Aviation Medicine in context

2.1.1 The field of aviation medicine came into being when it was realized during World War I that more pilots died due to reasons of medical incapacity as opposed to the pilots that died as a result of enemy gunfire. Medical standards were introduced as a requirement for pilot duties and the fatality rate dropped significantly. Since then, most initial research pertaining to aviation medicine has been performed within the military.

2.1.2 After World War II, civil aviation expanded rapidly and the emphasis of aviation medicine shifted to the civilian sector. Thus, although historically aviation medicine focused on military operations, presently the worldwide trend is to separate military from civilian aviation medicine as the needs of the two sectors are different. The majority of countries have set up dedicated civil aviation medical administrations that function separately from military administrations.

2.1.3 Flying is a highly skilled job that involves a complex interaction between the aviator and the machine in an environment that is full of stressors. Although the flying machine may fail occasionally, it is the human component that is reported to be the cause of aviation accidents more than 70% of the time. The aircraft environment differs from other occupational environments with respect to aviation physiological factors of relevance to flight safety such as: the effects of altitude, relative hypoxia, changes in air pressure, decompression, ozone, noise and vibration, low humidity leading to dehydration, fatigue, forces of acceleration and deceleration, cosmic radiation, sensory illusions and spatial disorientation. Because of these stressors, aircrew is required to maintain a high level of physical and mental fitness, and is legally required to assess their medical fitness in order to carry out their professional duties. Aviation medicine combines aspects of preventative, occupational, environmental and clinical medicine with the physiology and psychology of man-in-flight.

2.1.4 Other categories of Aviation personnel, such as cabin crew (functioning as safety officers on board the flight) and air traffic controllers (responsible for safe management of aircraft movement) are also legally required to assess their medical fitness in order to carry out their professional duties.

2.1.5 Aeromedical decisions must therefore be based on factual and objective data, which is evidence- based and supported by documentation to ensure aviation safety.

2.1.6 Aviation medical examinations have evolved over the years for three reasons; to predict the success of training (especially in the military), to ensure a long productive career and to reduce the rate of accidents. Research in the west indicates that the risk of sudden incapacitation of aircrew is low due to the high standards of fitness required for initial screening medical examinations and follow-up medical surveillance. Despite the high medical standards imposed on aviation personnel, however extensive, there is no medical examination that can entirely exclude the possibility of incapacity; therefore the introduction of a risk management approach. Although the incidence of incapacitation of aircrew due to the effect of medical conditions or physiological impairment is low, it represents a serious potential threat to flight safety.

2.1.7 Most potential pilots with a significant risk of incapacitation (e.g. Epilepsy,) are screened out at the time of initial examination. The civil aviation authorities internationally permit airmen with certain medical conditions to be medically certified, provided that such permission does not compromise aviation safety. Unfortunately a comprehensive review of the proportion of medical conditions leading to medical unfitness and incapacitation has not been conducted on the African continent. This has resulted in limited knowledge of the causes of in-flight incapacitation, medical causes of aircraft accidents and other issues specific to Africa and elsewhere.

2.1.8 Limited research creates a challenge to the local aviation regulatory authority, as development and revision of local medical policies are based on information from the west, which differs significantly with regard to the demography of the populations and diseases endemic on the African continent.

2.1.9 Over the years, a number of studies were documented about the medical conditions affecting the various aviation populations in the western world. Knowledge of these medical conditions assisted in the development of appropriate, evidence-based medical standards, and this research has also provided information relating to medical conditions responsible for in-flight medical incapacitation.

2.1.10 ICAO indicated that there is evidence that several fatal aviation accidents have been caused by psychiatric disorders or

inappropriate use of psychoactive substances; it is therefore reasonable that as part of the periodic aviation medical examination there should be questions that pertain to these issues.

2.1.11 Further, the number of non-physical conditions that can affect the health of pilots and which can lead to long-term unfitness in middle age appears to be increasing. It is therefore important to include mental health questions in the routine examination of applicants and that DAMEs spend time on health education and prevention of physical as well as mental conditions.

2.1.12 There is a need for Designated Aviation Medical Examiners to mentor newly appointed examiners, share their experience and participate more in decision-making.

2.1.13 Designated Aviation Medical Examiners play a major role in safety management through information collected in routine medical examinations which may assist in identifying potential medical causes of in-flight medical events. The results of one such research study have suggested that the conditions most likely to result in in-flight medical events were usually first observed during the period between routine examinations - they were not discovered at the time of the periodic examination by a medical examiner.

2.1.14 Designated Aviation Medical Examiners are encouraged to participate in the regulatory review processes (medical protocols), and to familiarize themselves with the latest amendments to minimize unnecessary delays in the medical certification processes. This will also prevent negligent or wrongful certification, which would permit a medically unfit person to take control of an aircraft.

2.2 ICAO and Civil Aviation Medicine

2.2.1 The **International Civil Aviation Organisation** (ICAO), a specialized agency of the United Nations, was created with the signing of the *Convention on International Civil Aviation* in Chicago, on 7 December 1944. ICAO is the permanent body charged with the administration of the principles laid out in the convention. The Convention establishes the privileges and restrictions for all Contracting States, of which Mauritius is one, and provide for the adoption of International Standards and Recommended Practices (SARPs) regulating international air transport.

2.2.2 A **Standard** is any specification for physical characteristics, configuration, material, performance, personnel or procedure

whose uniform application is recognized as necessary for the safety or regularity of international air navigation and to which Contracting States will conform in accordance with the Convention.

Note: *In the event that a State finds it impracticable to comply in all respects with any such international standard but allows a less stringent practice, immediate notification to ICAO is compulsory under Article 38 of the Convention. In case a more stringent regulation is adopted, notification to ICAO is compulsory only when such regulation is applied also on foreign licence holders and aircraft.*

2.2.3 A **Recommended Practice** is any specification for physical characteristics, configuration, material, performance, personnel or procedure whose uniform application is recognized as desirable for the safety or regularity or efficiency of international air navigation.

2.2.4 ICAO SARPs are detailed in the 19 **Annexes** to the Chicago Convention that cover all aspects of international civil aviation. Annexes applicable to Aviation Medicine include the following:

Annex 1 Personnel Licensing

Annex 2 Rules of the Air

Annex 6 Operation of aircraft

Annex 13 Aircraft Accident and Incident Investigation

2.2.5 Each Annex deals with a specific aspect of international civil aviation and those relating to medical regulations for licence applicants are included mainly in Annex 1 (Personnel Licensing) and to some degree in Annex 2 (Rules of the Air) and Annex 6 (Operation of Aircraft). Issues involving preparedness planning for a communicable disease of public health concern are considered in Annex 6, Annex 9 (Facilitation), Annex 11 (Air Traffic Services) and Annex 14 (Aerodromes).

2.2.6 In addition to the Annexes, ICAO publishes guidance material to assist Contracting States. Guidance material of interest to the Aviation Medical Examiner is published in the **ICAO Manual of Civil Aviation Medicine** (*Doc 8984*), which is available to DAMEs from the ICAO site.

2.2.7 Mauritius is one of the 193 Contracting States to ICAO. The headquarters of ICAO is situated in Montreal, Canada.

2.2.8 Medical standards and policies of aviation regulators are expected

to be compliant with the Standards and Recommended Practices as stipulated by ICAO in Chapter 6 of Annex 1. ICAO performs safety oversight audits on Contracting States on a regular basis to monitor compliance with the minimum standards and recommended practices and States are required to notify ICAO when there is an inability to meet standards and recommended practices. A difference will then be filed for each specific requirement which is not being met.

2.2.9 ICAO in turn requires the regulator to conduct ad-hoc audits on designated aviation medical examiners, and to take action against non-compliant examiners. The purpose of these audits is not punitive, but to improve the medical certification systems.

2.3 History of Aviation Medicine

2.3.1 In 1970, the Personnel/Training/Medical (PEL/TRG/MED) Divisional Meeting of ICAO considered that availability of suitable medical guidance material was of importance to the uniform application of the Standards and Recommended Practices (SARPs) in Annex 1, as well as in such fast-moving fields as accident investigation and human factors in aviation. The meeting also recommended that action be taken to provide expert advice to the ICAO Secretariat in support of the preparation of such medical guidance material. Since that time, advances have been made both in medical science generally and in aviation medicine. Assistance and advice have been provided by aviation medical specialists from many Contracting States, and their valuable contributions have enabled a second edition of the Medical Manual in 1985 and now its third edition to reflect those advances as they apply to civil aviation medicine in particular. (ICAO Manual 2012).

2.3.2 The 3rd edition of ICAO Medical Manual was developed with the intention to complement existing text by emphasizing the clinical problems encountered in medical certification in civil aviation. This ICAO document (Doc 8980 AN 895) is designed for the experienced designated medical examiner as well as for the aviation medical expert and medical assessor, to aid in the approach and management of intricate borderline cases. When making a Medical Assessment, the medical examiner should consider the relevant operating environment were the applicants is engaged in, for example single pilot commercial operations carrying passengers clearly require the most careful medical evaluation in order to reduce the risk of in-flight incapacitation. Those engaged in multicrew operations, where there has been effective incapacitation training, may be considered less stringently. In many such cases flight safety may be adequately protected by an

operational condition or limitation applied to the licence.

2.3.3 ICAO states that over-regulation, apart from having an adverse financial impact on the State or the aviation industry, may not in the end improve flight safety and a risk based approach is more suitable. Stringent national medical requirements can result in unnecessary restrictions or premature retirement of license holders. It may also have the consequence of license holders being reluctant to report illness to the medical examiner or the Licensing Authority, which is important from the flight safety viewpoint since the value of the medical examination relies to a large extent upon an accurate medical history. Too stringent regulation may result in "medical tourism" where a license holder, if refused a licence on medical grounds in one State because of stringent medical requirements, seeks to obtain one in another, less demanding State.

2.3.4 All differences should be reported to ICAO through its on-line notification system. In a Resolution of 5th February 1999, the ICAO Council confirmed that in principle, national requirements "more exacting" than the SARPs would be detrimental to the framework of the Chicago system within which international civil aviation has developed and continues to develop. The Council also called upon each Contracting State to utilize the multilateral mechanism of ICAO when it believes that changes to the content or level of implementation of the Standards and Recommended Practices in the Annexes to the Chicago Convention are necessary or desirable.

2.3.5 With the recent introduction of safety management - defined as "A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies, and procedures" - four main areas were identified where, by applying safety management principles, it may be possible to produce aeromedical data to enhance flight safety. These areas are: -

(i) Adjustment of the periodicity and content of routine medical examinations to more accurately reflect aeromedical risk;

(ii) Improvement in reporting and analysis of routine medical examination data;

(iii) Improvement in reporting and analysis of in-flight medical events; and

(iv) Support for improved reporting of relevant aeromedical events through the promotion of an appropriate culture by companies and regulatory authorities.

2.3.6 Medical requirements for pilots were introduced during the early decades of the last century and although the content of the aeromedical examination has changed over time, few attempts have been made to monitor or quantify the safety benefits of the requisite aeromedical standards, it being self-evident that the license holder needs to be 'fit'. Although ICAO sets medical Standards and Recommended Practices that have been agreed upon internationally, regulatory authorities interpret the medical Standards and Recommended Practices in different ways and in practice this leads to different fitness levels being required of license holders in different States (countries).

2.4 New Concepts in Aviation Medicine

2.4.1 Expert Opinion

2.4.1.1 Aeromedical policy and individual decisions are often based on expert opinion. Although expert opinion may be evidence-based, such an approach (which may also be termed 'eminence-based') is not as reliable as one that uses higher levels of evidence. However, expert opinion is often the easiest (quickest and least costly) to implement and may, therefore, be an attractive option for regulatory authorities. If a medical expert has experience in aviation medicine and their own specialty, such an opinion may be of great value. Mauritius DCA will rely on expert opinion in most cases, but may also use alternative means for aeromedical decisions.

2.4.1.2 The potential for variation in expert opinion is a reality and it is therefore not uncommon that an individual is assessed as fit in one State and unfit in another.

2.4.2 Acceptable Aeromedical Risk

Diversity of views can also be found among regulatory authorities with respect to the level of aeromedical risk that is acceptable or not acceptable. It is difficult to agree on specific objective numeric aeromedical 'risk criteria' as a basis for decision making in individual cases or for developing policy and as a result there are differences regarding the maximum acceptable level of risk for certification in different countries. For professional pilots a commonly held norm of maximum risk is 1% per annum. A pilot incapacitation risk of ' 1% per annum ' infers that if there were 100 pilots with an identical condition, 1 of them would be predicted to become incapacitated at some time during the next 12 months (and 99 would not). While the data for predicting incapacitation in the next 12 months for a condition is not always

robust, there are some common medical conditions (e.g., ischemic heart disease) where high quality epidemiological data exist and can be used in assessing the aeromedical risk. However, without any objective risk criteria, the basis on which an aeromedical decision is being made is not clear and difficult to defend. In such cases expert opinion that seems 'reasonable', often based on similar precedents, would seem to be justifiable.

2.4.3 Medical Examinations

2.4.3.1 Regulatory authorities require license holders to undergo an aeromedical examination for license issue and each license or medical certificate renewal. This examination varies little throughout a pilot's career, even though the incidence of most medical conditions varies with age, physical disease being less common in professional pilots under 40 years of age than in those over 40 years. Accordingly, physical disease is very rarely a significant factor in two-crew airliner accidents involving younger pilots. In the general population, behavioral factors such as anxiety and depression are more common in the under-40s age group and illicit drug use and alcohol consumption also cause a considerable, increasing disease burden.

2.4.3.2 Despite this, relatively little formal attention is given to these aspects in the routine periodic examination as the emphasis is usually placed on the detection of physical disease. Particularly in the younger license holder there is an apparent mismatch between the likelihood of the existence of particular pathologies of flight safety importance (mainly mental and behavioral problems) and the tools being used to detect them (the traditional medical examination). ICAO is currently in consultation with its member States concerning whether the current emphasis on the detection of physical disease is appropriate in the periodic medical examination for professional pilots under 40 years of age.

2.4.4 Safety Management's risk based approach

2.4.4.1 For some years the concepts of **safety management** have been applied in the aviation industry, but largely outside the field of aviation medicine. ICAO has mandated the incorporation of a safety management system into the management processes of air traffic and aerodrome operators since 2001 and 2005, respectively and safety management systems became mandatory in

January 2009 for aircraft operators and training organisations.

2.4.4.2 In this approach top level management must be involved with decisions that impact on safety, since the company culture is developed 'top down' and if little interest is shown in safety at the highest management levels, the same attitude is likely to prevail among other company employees. It is, however, difficult for a senior executive to take responsibility for aeromedical safety in a company (as opposed to other safety aspects), partly because of the confidential and personal nature of the information involved and partly because many companies do not have the necessary expertise among their staff for such a role. It is, therefore, more appropriate for the medical assessor of the regulator to take up the responsibility for national aeromedical safety.

2.4.4.3 In this regard, it is expected that the medical assessor responsible for national aeromedical safety would rely on sound data on which to base aeromedical policy. Such data could be obtained from three main sources:

(i) In-flight medical events;

(ii) Medical events that occur between flights, but which would have been of importance had they occurred in flight; and

(iii) Medical conditions discovered by the medical examiner during a routine medical examination.

2.4.4.3.1 *In-flight medical events*: Proper parameters for classification of reportable data and a system that supports easy reporting would be required to be developed. Under reporting is likely to be a problem in the initial stages of data collection as crew might fear adverse consequences of making in-flight medical events known.

2.4.4.3.2 *Medical events that occur between flights*: On average, professional pilots spend between 5 and 10% of their time in the air, so noting events that occur between flights would greatly increase the size and utility of any database of medical events that

affect pilots. An analysis of the medical conditions that come to light between routine examinations would be particularly useful.

2.4.4.3.3 *Information from routine medical examinations*: Two types of information are available from routine examinations: information from the medical history and findings from the examination (mental and physical, including any additional investigations, e.g., electrocardiogram). Medical examination data can be added to the aeromedical database.

2.4.5 Future approach

2.4.5.1 Despite the growth and acceptance of evidence-based practice throughout most fields of medicine, we still find ourselves routinely using the lowest level of evidence (i.e. expert opinion, unsupported by a systematic review) for regulatory aeromedical decisions. In addition, such decisions are often not based on the explicit acceptance of any particular level of aeromedical risk.

2.4.5.2 A cornerstone of a successful future for regulatory aviation medicine is consistent evidence based decision making. Such an approach, if applied by different regulatory authorities, would assist global harmonization of medical fitness requirements. The principles of safety management can be used to help achieve both these goals. To promote these aims, several aspects of the aeromedical process should be reviewed and improved, such as:

(a) The periodicity and content of periodic medical examinations. It should be adjusted to better reflect the medical demographics of applicants and the safety relevance of their medical conditions. For example, an increased emphasis on alcohol, drugs, and mental health may be warranted for younger pilots while it would be appropriate to give greater consideration to cardiovascular disease as pilots' age.

(b) Improved reporting and analysis of medical examination data. There is a lack of data concerning conditions of aeromedical significance that are

discovered during routine medical examinations.

(c) Improved reporting and analysis of in-flight medical event data.

(d) Support for better reporting through the development of an appropriate culture by regulatory authorities' including a more supportive approach to license holders who develop medical problems. A supportive approach should improve the reliability of data on which aeromedical policies are based by encouraging reporting of medical conditions by licence holders.

2.5 Aviation Medicine in Mauritius

2.5.1 In Mauritius, the services related to Aviation Medicine are carried out by designated aviation medical examiners which are appointed and monitored by the Authority to ensure that medical examinations are carried out in accordance with the legal requirements of MCAR-Part-MED of the MCAR and in accordance with this Manual.

2.5.2 As the aviation medicine market is very small in Mauritius, the establishment of an aviation medicine unit at the Department of Civil Aviation is not warranted and the employment of a medical inspector who would fulfil the role of medical assessor as intended by the MCAR cannot be effectively implemented.

2.5.3 The Authority has designated the UK CAAi to perform the functions related to medical certification on its behalf and remains responsible for carrying out oversight inspection over medical certification and act as medical assessor in Mauritius, whilst the Authority remain the responsible entity for the .oversight of all aviation medical activities.

2.5.4 The Authority will in the future consider to the extent possible establishing a panel of medical advisors consisting of medical, psychological, surgical and ancillary health experts to advise the Department on medical risk posed by aviation personnel who holds medical certificates. The primary role of the panel would be to investigate and advise on intricate borderline, and complicated cases measured against defined protocols, as referred to it by the DAMEs or the medical assessor. The panel will assess medical cases to ensure that the conditions for 'accredited medical conclusion' of **ICAO's flexibility clause** are met, namely, ensuring that *'in special circumstances the applicant's failure to meet any requirement, whether numerical or otherwise, is such that*

exercise of the privileges of the licence applied for, is not likely to jeopardize flight safety; that the relevant ability, skill and experience of the applicant and operational conditions have been given due consideration and the licence is endorsed with any special limitation or limitations when the safe performance of the licence holder's duties is dependent on compliance with such limitation or limitations'.

2.6 Department of Civil Aviation (DCA)

2.6.1 The DCA is the regulator/licensing authority established to control, regulate and promote aviation safety in Mauritius

2.6.2 The DCA is responsible to oversee Mauritius's implementation of the ICAO SARPs and the regulatory compliance and safety oversight of all areas captured in the table below.

Airports	➢ certification ➢ infrastructure ➢ approval of obstacles and developments ➢ safety and security ➢ emergency services
Aircraft	➢ certification activities ➢ airworthiness certificates ➢ certification and surveillance of aircraft maintenance organisations ➢ approval of modifications
Personnel	➢ training ➢ examinations ➢ licensing/rating/validation/conversion ➢ medical certification
Operations	➢ certification of operators ➢ surveillance of operators ➢ review of special approvals ➢ management of dangerous goods
Airspace oversight	➢ air traffic services standards ➢ development of navigational services ➢ preparation of aeronautical charts

2.7 Aviation Medicine functions and responsibilities

2.7.1 Aviation Medicine within the DCA is a medical speciality, which combines aspects of preventive, occupational, environmental and clinical medicine with the physiology and psychology of man in flight.

2.7.2 It is concerned with the health and safety of those who fly both crews and passengers, as well as the selection and performance of those who hold aviation licenses.

2.7.3 In terms of MCAR Part-MED the Authority must –

(a) Exercise control over medical examinations or tests and over aviation medical examiners performing such examinations or tests;

(b) Determine standards for such examinations or tests and for the training of such aviation medical examiners;

(c) Issue or amend medical certificates and keep all books or documents regarding such examinations or tests;

(d) Apply basic safety management principles to the medical assessment process of licence holders by inter alia:

(i) Routinely collecting and analysing medical findings during medical assessments to identify areas of increased medical risk;

(ii) Continuously re-evaluating the medical assessment process to concentrate on identified areas of increased medical risk;

(iii) Routinely collecting and analysing incapacitation in-flight and on active duty; and

(iv) Ensuring that accredited medical conclusions are reached.

2.7.4 As a result of the above-mentioned, the principal functions of the Aviation Medicine specialty within the DCA are to:

(a) Monitor the developments within the field of aviation medicine worldwide.

(b) Ensure compliance with the medical provisions as required by ICAO SARPS.

(c) Determine the medical standards for licensing within Mauritius and monitoring compliance thereof.

(d) Oversee the medical certification system within Mauritius,

(e) Oversee designated aviation medical examiners,

(f) Consider appointing and managing a medical panel for review of medical cases requiring accredited medical conclusion;

(g) Assess medical standards and procedures associated with:

(i) Flight operating conditions and flight crew performances

(ii) Air traffic control staff performance

(iii) Conditions of work relating to safe performance of aviation duties

(iv) Biological and psychological problems relating to passengers and crew safety such as the prevention of problematic use of psychoactive substances in the aviation workplace, the medical aspects of flight crew fatigue and smoking restrictions on international airliners

(v) Medical equipment used in the aviation environment

(vi) First aid training and administration thereof by cabin crew

(vii) Survival of aircraft accidents by crew and passengers

(viii) Promoting of aviation safety through education and applying recommendations following research.

(ix) Ensure the routine collection and analysis of relevant data for implementation of risk based decision making in terms of the safety management principles.

2.7.5 DCA would be required by ICAO to incorporate safety management principles into medical certification processes and would have to put a system in place to enable DCA to develop policies that are relevant to aviation safety and to implement interventions in areas identified as posing an increased risk to aviation safety.

2.7.6 The DCA would have to develop a research capacity in collaboration with neighboring countries and specialists who are willing to contribute towards aviation safety. The medical assessor is required to stay abreast of the outcomes of research projects and the latest developments in aviation medicine (worldwide and in the region).

Chapter 3

Designation and responsibilities

3.1 Program description

3.1.1 The Authority is responsible in terms of MCAR Part-MED of the MCAR for the medical certification of all aviation licence holders requiring medical certificates as a pre-requisite of their respective licences; i.e. pilots, flight engineers, cabin crew personnel, air traffic service personnel. In accordance with the Mauritius Civil Aviation Regulation "the Authority may designate aviation medical examiners to perform medical examinations or tests required for the issuing of medical certificates". The designated aviation medical examiner (DAME) program therefore allows an individual medical practitioner the opportunity to conduct aviation medical examinations independent of the DCA.

3.1.2 A designated aviation medical examiner authorisation is an official authorisation and is conditional upon the qualification and experience of the person and the continued requirement for assistance to carry out the powers, duties and functions of the Authority. This designation is given to qualified medical physicians on completion of the initial aviation medicine training required to conduct aviation medical examinations. After designation, it remains the DAME's obligation to continue to meet the requirements of the designation.

3.1.3 A DAME may be authorised to conduct medical examinations for Class 1, 2 or 3 medical certificates as required in terms of MCAR-Part-MED. The Authority may limit or restrict the DAME's designation based on the equipment and facilities available for examination.

3.1.4 The number of DAMEs and their conduct with respect to medical examinations of licence holders are closely monitored by the DCA. A medical assessor or other authorised person may review any of the medical examinations required or may monitor any DAME.

3.2 DAME Categories

3.2.1 The following categories of designation are implemented for Mauritius DAMEs:

(1) **Approved Medical Examiner** authorized to issue Class 1, Class2, Class 3 and Cabin Crew medical Certificates. Shall be fully qualified and licensed for the practice of medicine and hold a Certificate of Completion of specialist training; with at least 5 years of clinical practice out of which three should be in the field

of medicine relating to the functioning of the aeromedical examiner. (e.g. General Practice, internal medicine, etc. but not field like orthopaedics, sports medicine, gynaecology, obstetrics etc.)

(2) **General Medical Practitioners (GMP)** acting as AME's for issuing LAPL medical certificates only

(3) **Occupational Health Medical Practitioners (OHMP)** who shall only be authorise to conduct aero-medical assessments of cabin crew if they are licensed in the practice of medicine and qualified in occupational medicine and have acquired knowledge in aviation medicine as relevant to the operating environment of cabin crew.

3.2.2 Designation requirements for each category are reflected in the section above.

3.2.3 Designated Aviation Medical Examiners (DAME) refers to aeromedically qualified doctors designated by the Authority, and they are granted the authority to perform medical examinations or tests required in terms of the MCAR-PART-MED

3.2.4 DAMEs are newly qualified (Aviation Medicine) examiners who mainly have the authority to perform medical examinations for Class 2 (Private Pilot, Recreational pilot, Student Pilot, Cabin Crew and ATSA).

3.2.5 Extension of privileges of DAME as per MCAR-MMED.D.015 will have the authority to perform medical examinations for Class 1, 2, and 3 medical certificate holders including Cabin Crew.

3.2.6 The Authority may approve foreign/international medical examiners to assist those applicants living outside of Mauritius. Any foreign designated medical examiner who wishes to conduct medical examinations on behalf of the Authority, may submit an application in writing to the Authority for evaluation and review by the Medical Assessor.

3.3 DAME Privileges

3.3.1 Depending on their category of designation, the equipment and facilities available for their use, DAMEs may be issued with specific privileges with respect to the Classes (1, 2, or 3) of medical examinations that they may perform.

3.3.2 DAMEs will qualify for their privileges after receipt of their designation letters. The designation is issued for three (3) years after which it may be re-issued if the DAME applies for renewal and complies with the

requirements of MCAR-Part-MED and of this Manual.

3.4 DAME authorities

3.4.1 A DAME will be authorized in accordance with his/her qualifications and experience for the medical examinations of some or all of the Classes.

3.4.2 The applicable standards for medical examination for licence holders are contained in MCAR-Part-MED.

3.4.3 A DAME has the authority to –

(a) Personally conduct physical examinations in accordance with the guidance and practices as laid down by the Authority or designated Medical Assessor, body or institution;

(b) Issue, defer or deny medical certificates in accordance with the provisions of MCAR-Part-MED of the MCAR subject to reconsideration by the Authority, Medical Assessor appointed by the Authority or panel of medical advisors (if appointed by the Authority).

3.5 DAME designation criteria

3.5.1 In the selection and retention of DAMEs, the medical assessor will recommend only professionally qualified, practising physicians who have an expressed interest in promoting aviation safety to the Authority. Only those physicians who enjoy the respect of their associates and members of the public whom they serve shall be designated and retained as DAMEs by the Authority. The applicant's past professional performance and personal conduct must be suitable for a position of responsibility and trust.

3.5.2 Designation criteria for Regular DAME (Class 2 Medical Examinations)

(a) Qualifications

The applicant must –

- Be a professionally qualified physician in good standing.
- Possess an unrestricted licence(s) to practice medicine in Mauritius (and where applicable in the foreign country for which the designation is sought).
- Have completed training in aviation medicine and

- Have practical knowledge and experience of the conditions in which the holders of licences and ratings carry out their duties. (Acceptable practical experience includes for example; flight experience, simulator experience, on-site observations or other hands- on experience.)

(b) Distribution

There must be a determined need for a DAME in the area, based on adequacy of coverage related to pilot/licence holder population.

(c) Conditions of designation

To become a DAME, the applicant must agree to comply with the requirements.

(d) Change of status

The DAME must promptly notify the Authority or Medical Assessor, should there be a change in the DAME's status of authority to practice medicine.

(e) Professionalism

The DAME would be required to be informed regarding the progress in aviation medicine; to be thoroughly familiar with the relevant techniques of examination, medical assessment, as well as certification of applicants; and to abide by the policies, rules and regulations of the Authority or designated body or institution. The DCA would present workshops on requirements to DAMEs upon initial appointment and when any new standards are implemented.

(f) Examinations

A DAME is required to personally conduct all medical examinations. Other physicians or professional medical personnel such as nurses, audiologists, occupational health technicians etc. may perform specialised parts of the examinations under the general supervision of the DAME. However, the DAME must sign the documents and list his/her designation identification number, both on the application form and on the medical certificate. In all cases the DAME must review, certify, and assume responsibility for accuracy and completeness of the total report of examination.

(g) Continuing education

Each physician must attend at least one aviation medical conference and/or CME course within each 4-year interval. Travel costs and other expenses for the DAME and staff to attend the conferences are the responsibility of the DAME.

(h) Facilities and equipment

The DAME must have adequate facilities for performing the required examinations and possess, or provide sufficient evidence of possession of or access to such equipment, or the necessary facilities, prior to conducting any aviation medical examination.

(i) Conduct

The DAME must comply with the policies, orders and regulations of the Authority or Medical Assessor appointed by the Authority.

3.5.3 Designation criteria for Senior DAME (Class 1 and 3 medical examinations)

In addition to the criteria for designation as a DAME as contained in 3.5.2 above, the physician must demonstrate, by compliance with the requirements for continued service as a DAME, acceptable prior performance as a DAME authorised to perform Class 2 examinations for a period of at least 3 years.

3.5.4 Supervision

The DAME will be monitored by the medical assessor who may conduct any such audits and inspections as required to ensure that the DAME has the required facilities and equipment and is in compliance with the requirements of the regulations and standards.

3.5.5 Prohibited examinations

A DAME may not perform a self-examination for the issuing of a medical certificate nor issue a medical certificate to himself or herself.

3.5.6 Duration of designation

Designations of physicians as DAME are effective for 3 years following the date of issue, unless terminated earlier by the Authority or the designee. For continued service as a DAME, the

designee must reregister annually. In the event of office relocation or change in practice, a designation will terminate and may be reissued, on request, by the Authority. In respect of the relocation, a determination of adequacy or coverage will be made.

3.6 DAME designation

3.6.1 Letter of Delegation

3.6.1.1 The Authority may issue a Designation Letter delegating authority to the DAME following the successful selection of the DAME in 3.5 above when in compliance with the requirements for designation. The designation allows the DAME to act on the Authority's behalf with conditions specified on the designation. The designation will normally include the following:

(a) The authority and privileges of the DAME;

(b) A statement that delegation as a DAME is a privilege and may be withdrawn or suspended for breach of a condition of issuance, an administrative reason or in the interest of safety;

(c) A statement that the DAME may defer the issuing of such medical certificate pending an appropriate recommendation from the medical assessor, when this is deemed to be necessary;

(d) A declaration that the DAME understands, accepts and will carry out the privileges, duties and functions of the Authority in accordance with all requirements and medical standards, including the procedures contained in this Manual;

(e) Any other appropriate conditions of issuance; and

(f) The expiry date of the Designation of Authority Letter.

3.6.1.2 A DAME will only be designated once he/she has –

(a) Successfully completed the selection process,

(b) Procured/has access to such equipment necessary to conduct the medical examinations for the particular classes of medical certificates that they have been authorized for, and

(c) Satisfactorily undergone an on-site visit to determine the suitability of the procedures, facilities and equipment of the DAME.

3.6.2 Duration of Delegation

Designation as DAME is valid for a maximum period of three years from date of designation. Application must be made for re-designation.

3.6.3 Re-designation

3.6.3.1 The responsibility to request re-designation prior to expiration of their current designation rests with the DAME. The application must be made 60 days prior to the beginning of the month in which the current designation expires.

3.6.3.2 Submission of such application does not automatically entitle the applicant to continue to exercise the privileges of his/her designation after the expiry date.

3.6.3.3 Re-designation of applicants is at the discretion of the Authority and the following requirements must be met. Applicants must have -

(a) Demonstrated satisfactory performance in the past,

(b) Continued to show a definite interest in the DAME programme,

(c) Taken satisfactory action to correct any examination and certification errors when identified,

(d) Shown interest and participation in aeromedical programmes and conferences,

(e) Continued to act professionally and in accordance with the regulatory requirements of MCAR-Part-MED and the procedures of this Manual, and

(f) Performed at least 15 examinations per year

3.6.4 Basis for termination or non-renewal of designation

3.6.4.1 The Authority may terminate or refuse to renew the designation based on the following criteria –

(a) Failure to re-register punctually each year;

(b) No examinations performed during the 12 months of initial designation;

(c) Performing less than 15 examinations per year.

(d) Disregard of, or failure to demonstrate knowledge of the rules, regulations, policies and procedures of the Mauritius DCA;

(e) Repeated errors after receiving warnings from the Authority/ Medical Assessor;

(f) Failure to attend required conferences and/or continued aviation medical education;

(g) Movement of the location of practice from where presently designated;

(h) Failure to participate in any aviation medical programme when requested to do so by the Authority;

(i) Unprofessional conduct in performing examinations;

(j) Failure to comply with the provisions of MCAR-Part-MED of the MCAR;

(k) Personal conduct or public notoriety that may reflect adversely on the Mauritius DCA or the authority;

(l) Loss, restriction or limitation of a licence to practice medicine;

(m) Any action that compromises public trust or interferes with the DAME's ability to fulfil the responsibilities of his or her designation;

(n) Any illness or medical condition that may affect the physician's sound professional judgment or ability to perform examinations;

(o) Arrest, indictment or conviction for violation of law;

(p) Request by the physician for termination of designation; or

(q) Any other reason if it is determined to be in the best interest of aviation safety as determined by the Authority.

3.6.4.2 The Authority shall provide reasons to the applicant in case of non-designation.

3.6.4.3 When it has been alleged that any DAME has acted in a manner contrary to the expected standards the Authority must, prior to making a final decision in the matter, ensure that:

(a) A comprehensive report from an inspector who has investigated the matter has been submitted for consideration; and

(b) The DAME has been given a formal opportunity to respond to the allegations, either verbally or in writing. (Where verbal response is made, a record must be kept.)

3.6.4.4 If the decision of the DCA is to terminate or not renew the DAME's authority, a notice of termination or non-renewal must be issued to the individual DAME.

3.6.4.5 Whether by determination to not re-designate or termination of designation during the designation year, the DAME must return all DCA materials (including this Manual, forms, identification card and certificate of designation) to the Authority.

3.7 DAME responsibilities

3.7.1 General

Aviation medical examiners are responsible to ensure that only those applicants, who are physically and mentally capable of performing their duties safely, may exercise the privileges of their certificates. To properly carry out this responsibility, DAMEs must:

- Keep abreast of the general medical knowledge applicable to aviation.
- Have detailed knowledge and understanding of all rules, regulations, policies and procedures relating to the medical certification of applicants.
- Possess acceptable equipment and have adequate facilities necessary to carry out the prescribed examinations

3.7.2 Service

3.7.2.1 A DAME is a professional who is experienced in performing medical examinations for the relevant aviation medical class.

3.7.2.2 A DAME is expected to honor appointments unless circumstances warrant cancellation or postponement. It is the DAME's responsibility to reschedule a medical examination if the postponement is at the examiner's request.

3.7.2.3 The DAME must conduct the medical examination according to the medical standards in MCAR-Part-MED, this Manual and in a private area free from distractions.

3.7.2.4 The DAME must give the candidate undivided attention during the medical examination.

3.7.2.5 A DAME must not allow personal prejudices to interfere with the objective examination of an applicant.

3.7.2.6 The DAME must provide 2 originally signed medical certificates to the licence holder, with one clearly marked for DCA licensing purposes as 'DCA copy'.

3.7.3 Prompt Forwarding of medical records and examination reports

3.7.3.1 A DAME must ensure that the original medical examination forms and supporting records are submitted to the DCA Personnel Licensing subdivision for the attention of the medical assessor within 7 days after the end of the month in which the examination was conducted.

3.7.3.2 The DAME must retain a copy of the medical examination records and medical certificate issued to the candidate for a period of 5 years after the date of the medical examination. These records are subject to review by the medical assessor and shall be made available upon reasonable notice.

3.7.3.3 If a medically unfit assessment decision is made, the DAME must immediately notify the DCA PEL Division (telephonically and in writing) and forward the medical records to the medical assessor for review and final conclusion, together with a copy of the medical certificate issued to the licence holder.

3.7.4 Standardization

All DAMEs must conduct medical examinations in accordance with

the applicable medical standards contained in the MCAR-Part-MED and attend standardisation seminars/workshops when arranged by the DCA.

3.7.5 DAME's own medical examinations

A DAME, who is also a licence holder, may not conduct their own medical examinations.

3.7.6 Records

3.7.6.1 A DAME may only conduct a medical examination when his/her designated authority is valid. Copies of the following records must be retained for inspection purposes:

- Letter of designation
- The records referred to in 3.7.3;
- Proof of attendance of the DAME refresher seminar/conference as required.

3.7.6.2 All DAME records are to be maintained for a period of at least two years and will be made readily available to DCA for inspection and auditing purposes.

3.7.7 DAME's Notification Responsibilities

DAMEs will advise DCA when they no longer meet the requirements to hold a DAME authority (within 30 days of having become aware of it) or when they will no longer exercise their authority.

3.7.8 Recurrent Monitoring Process

3.7.8.1 DAMES must make themselves available for the monitoring and auditing process of the DCA. The purpose of recurrent monitoring of DAMEs is to verify a uniform standard is applied during the conduct of medical examinations by all DAMEs.

3.7.8.2 DAMEs will furthermore be continuously monitored through reviews of medical examinations performed.

3.7.8.3 Over and above this, an annual on-site visit is required of the DAME's facilities, equipment and procedures in order for the DAME to retain his/her designated authority.

3.7.8.4 The medical assessor will schedule an annual on-site visit and during the visit, the medical assessor will confirm that:

- The DAME's administrative procedures conform with requirements specified in the relevant parts of the MCAR and this Manual;
- The DAME's examinations cover the required medical standard;
- The DAME's conduct is fair and in compliance with the standards and procedures described in the MCAR-Part-MED as well as this manual; and
- The DAME is acting within the limits of his/her authority.

3.7.8.5 After each DAME on-site visit the medical assessor will complete a Report and will ensure that a copy of the report is provided to the DAME and the original copy placed on the DAME's DCA file.

3.7.9 Liability - Delegated Authority

DAMEs receive their authority to conduct aviation medical examinations on behalf of the Authority by means of a "designation letter". DAMEs are working under the auspices of the Authority of Civil Aviation and as such they are indemnified against personal liability incurred by reason of any act or omission within the scope of their duties, only if the DAME acted within the scope of the delegation, honestly, without malice, and with a standard of care like every other reasonable medical practitioner in their position engaged in the same/similar activity would take.

3.7.10 Conflict of Interest

3.7.10.1 "*Conflict of Interest*" is defined as any relationship, whether family, financial or otherwise, that might influence a DAME to act, either knowingly or unknowingly, in a manner that does not hold the safety of the flying public as the primary and highest priority.

3.7.10.2 All DAMEs are held to be in a *"perceived conflict of interest*' if they have any relationships within the aviation industry that could unduly influence their medical examinations. To avoid a *"real conflict of*

interest', it is imperative that DAMEs strictly adhere to the policy and guidelines contained in the MCAR and in this manual. Lack of adherence to the manual may result in a suspension or cancellation of a DAME's designation. The following are examples (not exhaustive) of situations that could be considered potential conflict of interest for the DAME:

- The DAME's level of financial interest in aviation training organisations (ATOs) or air operators;
- The DAME's direct involvement in company ownership of ATOs or air operators;
- The DAME owning a substantial number of voting shares of the abovementioned companies;
- The DAME having family ties with abovementioned company owners; and
- Any privileges or favors which could bias the DAME's ability to conduct his or her duties.

3.7.10.3 In order to determine whether conflict of interest is real or perceived, each prospective DAME will submit a declaration for any perceived conflict of interest of which they have knowledge (which must be attached to their application).

3.7.10.4 Should any DAME come into a situation that they feel might constitute a "real conflict of interest", the circumstances must be immediately reported to the DCA Medical Assessor for review, before commencing any of their designated duties.

3.7.10.5 The final authority for deciding whether there is any conflict of interest that might affect the DAME's ability to conduct flight checks in an impartial manner rests with the Medical Assessor.

Chapter 4
Application Procedures

4.1 Submitting the DAME application form

4.1.1 The DAME Application Form FSS PEL 67-01 can be obtained from the Personnel Licensing Division at the DCA or can be downloaded from the DCA website. DAME applicants must complete and forward the form to the Medical Assessor with the following documentation attached:

(a) Proof of medical degree;

(b) Certificate, diploma or degrees of any postgraduate professional training;

(c) Mauritius Medical Council registration certificate;

(d) Mauritius Medical Council certificate of good standing;

(e) References from three physicians in applicant's geographical location regarding professional standing, or a statement from the office of the medical society in the locality of practice, that the applicant is a medical doctor in good standing;

(f) Certificate of aviation medicine training;

(g) Proof of practical knowledge and experience of the conditions in which the holders of licences and ratings carry out their duties;

(h) A statement affirming that –

- there are no current restrictions of medical practice, and there are no adverse actions proposed or pending by the Mauritius Medical Council that would limit medical practice; and
- there are no known investigations, charged indictments, or pending actions in any court of law;

(i) Proof of the ability to read, write, speak, and understand the English language.

4.2 Revisions to the DAME authority

If a revision to an existing DAME designation letter is required, the DAME will submit the following to the DCA:

(a) Where the request is for conducting examinations for an additional class of medical certificate, a DAME application form containing only the additional information required;

(b) Where the request is for removal of a class, written notification identifying the DAME and detailing the class to be removed.

4.3 DAME application evaluation

4.3.1 The DCA Medical Assessor will, upon receipt of the DAME Application Form with supporting documents, confirm that the prospective DAME - :

(a) Is acceptable in terms of experience, and competency and professionalism; and

(b) Meet the qualifications and experience requirements set out in regulation and in this manual.

4.3.2 The Medical Assessor will contact the prospective DAME that can be considered for designation to arrange for an on-site visit to assess the prospective DAME's facilities, equipment and procedures.

4.4 DAME approval

4.4.1 Based on the evaluation of the applicant's suitability, the designation will be recommended for approval and the DAME designation letter will be issued by the Authority of DCA.

4.4.2 The Medical Assessor will provide the designation letter to the DAME together with copies of the applicable regulations, technical standards and this Manual.

4.4.3 The DCA will ensure that a file is opened for the DAME and the designation information has been filed.

Chapter 5
Examination and Documentation Procedures

5.1 General

5.1.1 The aviation medical examiner may be the only physician an applicant will consult for the issuance of a medical certificate. The aviation medical examination differs from other medical examination procedures in that the examiner has to detect problems that may lead to sudden or subtle incapacitation in the near future. It is therefore essential for the examiner to form an accurate impression of the applicant by discussing various health issues with the applicant and by performing a thorough examination.

5.1.2 Since applicants are at risk of losing their medical certificate, and in some cases their employment, their medical examination is a source of stress to them, leading to apprehensiveness and the "white- coat-syndrome". Examiners must reassure the applicant and create an environment of good will that is conducive for discussion of the applicant's health.

5.1.3 It is required by legislation to request the applicant's identity document, previous medical certificate and aviation licence for confirmation.

5.1.4 It is equally important to note any indication of possible alcohol abuse, substance abuse and mental or psychological problems that may impact adversely on aviation safety.

5.2 Medical Examination Form completion

5.2.1 Medical examination forms and medical certificates

The medical examiner must send the original medical examination form to the DCA Medical Assessor within 7 days after the end of the month in which the examination was conducted and issue the applicant with 2 copies of his/her original medical certificate (one for the DCA and one to carry with his licence).

5.2.1 Pilot licences and medical certificates are regularly inspected abroad, and pilots may be detained or even charged with fraud if all the documentation is not in order. It is therefore essential that the applicant carries the original medical certificate on his person, that no alteration has been made on

the medical certificate and that the medical certificate is complete.

5.2.3 For both the medical examination form and the medical certificate the following is required:

(a) The medical certificate form can be obtained from the DCA and must be printed out for use. Each medical certificate must be numbered sequentially by the DAME for each applicant and a list of applicants with certificate numbers issued must be submitted to the DCA together with the medical examination records at the end of each month.;

(b) The medical examination form must be obtained from the DCA or can be downloaded from the DCA web site;

(c) No self-developed examination forms or medical certificates other than those provided by the DCA will be accepted;

(d) All documents must be signed by both parties in all the relevant places;

(e) Forms with tippex will not be accepted;

(f) Incomplete/illegible forms or certificates will not be accepted;

(g) The medical examiner's designation number must be on all documentation;

(h) If any changes or corrections are made on the medical examination form, the medical examiner must sign next to it;

(i) No corrections will be accepted on the medical certificate;

5.2.4 Medical Examination Form: 'History'

5.2.4.1 The history section on the examination form has to be completed by the applicant in the presence of the medical examiner. Alternatively the medical examiner has to verify the information with the applicant prior to performing the physical examination. The examiner must ask direct questions and must make use of this opportunity to provide advice to the applicant.

5.2.4.2 Remarks such as "previously documented" or "refer to previous records" will not be accepted. The examination form will be considered incomplete, will not be accepted and will be sent back to the medical examiner.

5.2.4.3 The information on the following 2 pages should be considered carefully when completing the history section:

Question	Description
Initial or renewal application	Initial – Initial examination for either Medical Assessment Class 1, 2 or 3; also initial examination for upgrading from Class 2 to 1 Renewal – Subsequent ROUTINE examinations.
Foreign licences	State whether SA, FAA, JAA or any other foreign licenses are held by the applicant
Flight time	For pilots, state total number of hours flown in an operating capacity.
Medical class applied for	Only class i.e. class 1 or 2 or 3 (do not specify ATP, Comm etc.)
Current restrictions/ protocols	• Provide details of restrictions/ protocols • Include date of implementation
Type of flying intended	This refers to the ultimate intention and not short-term goal
Previous medical examination	Applicant must present previous medical certificate to DAME to confirm
Medication used previous 3 months: (name and dosage)	All types of medication must be noted, whether it is prescription medication, OTC drugs, herbs, vitamins etc. If "Yes" is ticked, provide details: name of medication, date treatment was commenced, daily/weekly dose and the condition or problem for which the medication is taken.
Family history	When recording family history, details of the family member, age and details of disease should be supplied

Smoking	The following should be noted: • Number and type of cigarettes smoked daily • Number of years that has elapsed since applicant started smoking • If the applicant has stopped smoking, number of years since cessation should be noted
Drugs	• Dates, frequency and type of drugs should be noted • If applicant is still using drugs recreationally, he/she must be found temporary unfit and be referred
Alcohol	The following should be noted: • Number and type of alcohol used on a weekly basis • Number of years that has elapsed since applicant started using alcohol • If the applicant has been abusing alcohol, number of years since abuse has stopped should be noted
HIV	• Make use of the opportunity to provide education to the applicant related to the disease and the possible effects it might have on aviation safety • Provide counseling or refer for counseling and testing if so requested by the applicant. • **At this point in time, the applicant is not legally bound to disclose a positive HIV status**. • However, it is important to remind the applicant that he/she may not fly while aware of any condition that might impact on aviation safety.

General	• Any affirmative answer must be documented fully by the aviation medical examiner in the space provided. • If there is insufficient space, the examiner must attach a separate sheet to the examination form.
Notice and Declaration	• The DAME must bring the contents of these 2 paragraphs to the attention of the applicant. • The applicant should be aware that it is an offence to knowingly make a false declaration. • The declaration made by the applicant is a legal declaration that the applicant has supplied complete and accurate information. • It also releases information to the DCA
Declaration	• The applicant must read, date and sign the declaration and the signature must be witnessed. • The DAME must sign as witness.

5.2.5 Medical Examination form: 'Physical Examination'

5.2.5.1 A comprehensive physical examination must be performed. Any finding on the physical examination must be documented fully by the aviation medical examiner in the space provided. If there is insufficient space, the examiner must attach a separate sheet to the examination form.

5.2.5.2 Remarks such as "previously documented" or "refer to previous records" will not be accepted. The medical examination form will be considered as incomplete and will be sent back to the medical examiner.

5.2.5.3 Should the examiner decide that more tests are required; he/she should obtain informed consent from the applicant and perform the additional test/s or refer the applicant for further evaluation, when appropriate. The details must be provided on the form in the space provided.

5.2.5.4 The information on the following 2 pages should be carefully considered when completing the examination section of the form.

Question	Description
BMI	• BMI is calculated by dividing the weight of the applicant by the square of the height of the applicant • Underweight – less than 18,5 • Normal – 18,5 to 25 • Overweight – 25 to 30 • Obese – 30 to 40 • Very obese – more than 40
Pulse	Pulse rate and rhythm must be noted
Gynecological and rectal examination	• The gynecological examination and the rectal examination may be performed by the applicant's gynecologist, urologist or general practitioner. • Should this be the case, it should be remarked as such on the examination form. • The applicant should be made aware of the importance of these examinations.
General	• It is essential not to rush the examination and to engage the applicant in discussions to enable the examiner to evaluate the applicant psychologically. • The medical examiner should inspire confidence in the applicant, create a trusting and friendly environment and should get to know the applicant well to enable him/her to identify possible problems or changes in behavior during future examinations.
Findings and referral	If applicant has been referred for further evaluation, the name of the person as well as the reasons for the referral should be provided.
Visual acuity	• Distance and near vision for each eye separately as well as for binocular vision must be determined. • Criteria for intermediate vision has not yet been determined, but may be required in future

Colour vision	• Details of colour vision determination must be provided. • If a Lantern test has been performed on the applicant, the date and result of the test must be provided as well
CVD risk factor assessment	• CVD risk factor assessment must be completed • The result of this assessment may be used in future to determine the necessity for a stress-ECG • Medical examiners must make use of this assessment to educate the applicant about a healthy life style
Findings	• Any finding must be documented fully by the aviation medical examiner in the space provided. • If there is insufficient space, the examiner must attach a separate sheet to the examination form
DAME declaration	• The declaration made by the medical examiner is a legal declaration that the examiner- o Has personally reviewed the history, o Has personally examined the applicant, and o Has supplied complete and accurate information. • The medical examiner must supply all the details as requested in this section as this is a legal document. Incomplete information will not be accepted.
Office use only	This section **should not be completed by the medical examiners.** This is for official use by the medical assessor only.

5.3 Operational restrictions and medical requirements

5.3.1 Examination form
The medical examiner must indicate all operational restrictions and medical requirements in detail on the examination form.

5.3.2 Medical certificate

5.3.2.1 Operational restrictions should be documented clearly on the medical certificate according to the table below.

5.3.2.2 In order to maintain confidentiality of information, the

medical examiner **may not provide details** of any medical condition, requirement or protocol on the medical certificate.

5.3.2.3 If medical reports are required for future examinations, the following restriction must be documented:

"Medical reports to be submitted with next medical examination"

5.3.2.4 If the medical examiner has found the applicant to be temporary unfit, the following restriction must be documented:

"Medical reports to be submitted before medical certificate can be issued"

	Operational restrictions
1	With or as co-pilot only
2	With safety pilot only
3	Daylight flying only
4	Valid as PPL only
5	Suitable corrective lenses must be worn
6	A spare pair of lenses must be readily available
7	Monocular restrictions: (a) If flying open cockpit aircraft, protective goggles not restricting visual field must be worn (b) Any accompanying pilot must be made aware of the holder's monocular vision (c) Not valid for flight as pilot-in-command by day or night until a satisfactory flight test has been completed with a flight examiner in each case".
	Restricted to demonstrated aircraft type
9	Valid only with approved prosthesis
10	Hearing aid required
11	Altitude restricted to 10 000 feet maximum
12	Not to fly within 24 hours of using medication

13	No aerobatic flight
14	Valid only when another air traffic controller available to assume duties
15	Not valid for aircraft equipped with toe brakes
16	Valid for air traffic controller only
17	Valid for simulator instruction only
18	Medical reports to be submitted with next medical examination
19	Medical reports to be submitted before medical certificate can be issued

5.3.3 Examination reminder

5.3.3.1 The medical examiner must issue the applicant with a separate document detailing the tests required for the next aviation medical examination.

5.3.3.2 This will be the property of the applicant and need not be presented to anyone unless the applicant chooses to do so.

5.3.3.3 This document will serve as a reminder to the applicant or as an information sheet to a different aviation medical examiner, should the specific medical examiner be unavailable.

5.3.4 Licence restrictions

5.3.4.1 Annex 1 does allow for medical Standards to relate to the specific duties that may be undertaken by an individual licence-holder. This is indicated by relevant statements that appear in the Annex text referring to safe operation of an aircraft or to safe performance of duties while exercising the privileges of the licence. It follows that an applicant who has been assessed as unfit for one duty may be found fit for another, and it is therefore possible for the Licensing Authority to decide that an individual would be precluded from flying as a pilot while being judged capable of safely exercising the privileges of a flight engineer's licence.

5.3.4.2 Many such possible operational restrictions can be applied, but they should only be established after consultation with personnel licensing and flight operations inspectors. An applicant may be found fit to operate an aircraft as a pilot under supervision or as a co-pilot but not as a pilot-in- command. In cases where prognosis cannot be given with the necessary degree of certainty, any potential risk to flight safety may, in general aviation where

two pilots are not normally required, be mitigated by a restriction to fly without passengers, outside controlled airspace or with the carriage of a "safety pilot".

5.3.4.3 In all instances where licence restrictions have been introduced, the affected licence holder should receive adequate information about the medical condition which has led to the particular restriction.

5.3.5 Practical Flight Tests

5.3.5.1 In some cases, it will be necessary to perform a practical flight test (medically) with an applicant to determine/confirm medical fitness and ability to control the aircraft e.g. pilots with monocular vision, disabled pilots, colour blindness etc. In these cases, the medical examiner must refer the case to the DCA medical assessor to arrange for a practical flight test with a DCA inspector.

5.3.5.2 Borderline medical conditions should first be referred to a specialist for a thorough investigation. This should include an evaluation of whether or not the condition is progressive, to what extent functions is impaired, and whether there is any risk of future deterioration or sudden incapacitation.

5.3.5.3 If the applicant fails to meet the medical requirements but the condition, in the examiner's opinion, does not affect the regular and safe performance of duties, the DCA medical assessor might wish to additionally assess any skill and experience demonstrated during practical flight tests, in order to make certain that the applicant is capable of performing duties without endangering flight safety.

5.3.5.4 A practical flight test is usually most appropriate for assessing static physical conditions, and not for those with normal physical function but who have an increased risk of rapid incapacitation. It is likely to be undertaken mainly for private pilots, for whom the medical standards are less rigorous and where modification to aircraft controls may be feasible, although professional pilots may also require practical testing for certain conditions. Special medical flight testing, appropriate to the applicant's deficiencies, is conducted to help the DCA to estimate the applicant's ability to perform under normal as well as adverse flight conditions.

5.3.5.5 Testing of the applicant could therefore include marginal or simulated marginal conditions such as might be encountered in emergency operations, in adverse weather, in twilight or at night, in haze or cloudiness, and in flight towards the sun as appropriate to the condition being assessed. The flight test report should

comment on the conditions under which tests were given. Reasonable simultaneous tasks should be introduced during medical flight testing (such as map reading and navigation, operation of flight equipment, maintenance of communications, and even equipment or engine malfunction) to estimate the applicant's ability to perform more than one task simultaneously.

5.3.5.6 Specifications for such special medical flight tests provide guidelines to help in determining the safety implications. The following guideline from ICAO is in place:

5.3.5.6.1 Deformity or absence of extremities

An applicant might be assessed as fit if able to demonstrate an ability to reach readily and operate effectively all controls that would normally require use of the deficient extremity (or extremities), noting any unusual body position required to compensate for the deficiency; and the ability to perform satisfactorily emergency procedures in flight, such as recovery from stalls and power-off control, as well as on the ground, including evacuation of the aircraft.

5.3.5.6.2 Defective hearing

Defects in hearing need not normally necessitate tests under actual flight conditions since all pertinent factors may be simulated. Whether conducted on the ground or in flight the main considerations to be assessed in such cases are:

(a) Ability to hear radio voice and signal communications;

(b) Ability to understand ordinary conversational voice on the ground, in the cockpit with engine on and engine off. (The examiner should guard against the applicant lip- reading.)

5.3.5.6.3 Speech defects — stammering, stuttering

An applicant might be assessed as fit, if able to demonstrate ability to converse and be clearly understood in direct conversation and over the radio.

5.4 Mental Health and Behavioral evaluation

5.4.1 As there is evidence that several fatal aviation accidents have been caused by psychiatric disorders or inappropriate use of psychoactive substances, it is reasonable that as part of the

periodic aviation medical examination there should be questions that pertain to these issues.

5.4.2 Little guidance has been provided concerning how such aspects could be addressed in the periodic medical examination; although experienced medical examiners have often informally and spontaneously included them in their evaluation of the applicant. Furthermore, the number of non- physical conditions that can affect the health of pilots and which can lead to long-term unfitness in those of middle age appears to be increasing.

5.4.3 Some proposed questions which have shown to be amenable to preventive action before initial health indicators develop into significant health problems and before there is an impact on the pilot's medical status for flying have been developed as guidance to DAMEs. Numerous questionnaires with various degrees of complexity are available for assessing mental health and behavioral aspects of an individual's health. The examples of questions below may serve to promote an initial discussion between the medical examiner and the medical certificate holder.

5.4.4 To encourage dialogue, it is recommended that no written record of the conversation is retained (other than a record that mental health and behavioral topics were discussed) unless some item of immediate flight safety risk is uncovered — this understanding should be made clear to the certificate holder at the outset, thus increasing the likelihood of a frank discussion. It is to be expected that only rarely will any formal action need to be considered by the medical examiner to protect flight safety in the light of response to such questions, since the main aim to discover behavioral patterns or mental aspects that are amenable to change before they become sufficiently severe to affect the holder's medical fitness.

5.4.5 The questions suggested address those conditions that are most common in the age range of professional pilots and other professionals and including those conditions which are most likely to affect performance on the flight deck/work environment. Statistics show that the main psychiatric conditions which play a role are mood disorders and certain anxiety disorders, especially panic episodes. Additionally, in many States, excessive alcohol intake and use of illicit drugs in the general population are occurring with increasing frequency, and aviators are not immune from these social pressures. Questions have been developed to address these issues as well.

5.4.6 In developing the questions, a review of the literature was undertaken by specialists in the field, with the aim of choosing

simple questions that can be answered quite quickly. The vast majority of certificate holders will respond to all questions in the negative, and it is unnecessary to request individuals without any relevant problems to undertake a prolonged screening questionnaire.

5.4.7 Those who answer positively, or with uncertainty, can be engaged in further dialogue by the medical examiner. The aim is to encourage certificate holders to consider their lifestyle and thereby improve the likelihood that they will remain in good mental health during their careers; this, of course, includes the avoidance of problematic use of psychoactive substances. Occasionally, the medical examiner may find conditions that are amenable to medical support or even treatment; it is important to detect these at an early stage, before they become significant problems and before they have a long-term impact on the certificate holder's medical fitness and on flight safety.

5.4.8 The questions may not represent the most suitable questions for the all certificate holders, but they offer guidance to develop an approach that includes these important aspects of medical fitness. The questions do not necessarily have to be posed verbally by the medical examiner but could, for example, be given to the applicant to read prior to the examination.

5.4.8.1 Suggested questions for depression:

(a) During the past three months, have you often been bothered by feeling down, depressed or hopeless?

(b) During the past three months, have you often been bothered by having little interest or pleasure in doing things?

(c) During the past three months, have you been bothered by having problems falling asleep, staying asleep, or sleeping too much, that is unrelated to sleep disruption from night flying/trans meridian operations/ shift work?

(d) In the past three months, has there been a marked elevation in your mood lasting for more than one week?

5.4.8.2 Suggested questions for anxiety/panic attack:

(a) In the past three months, have you had an episode of feeling sudden anxiety, fearfulness, or uneasiness?

(b) In the past three months, have you experienced sensations of shortness of breath, palpitations (racing heart beat) or shaking while at rest without reasonable cause?

(c) In the past year have you needed to seek urgent medical advice because of anxiety?

5.4.8.3 Suggested questions concerning alcohol use:

(a) Have you ever felt that you should cut down on your drinking?

(b) Have people annoyed you by criticizing your drinking?

(c) Have you ever felt guilty about your drinking?

(d) Have you ever needed a drink first thing in the morning?

(e) How many alcoholic drinks would you have in a typical week?

(f) How many alcoholic drinks would you have on a typical day when you are drinking?

5.4.8.4 Suggested questions concerning drug use:

(a) Have you used drugs other than those required for medical reasons?

(b) Which non-prescription (over-the-counter) drugs have you used? When did you last use this drug(s)?

5.5 Flexibility in application of medical requirements

5.5.1 The range of variation between individuals is such that if Medical Standards are laid down in rigid terms, they will inevitably exclude a number of applicants who, though not meeting the Standards in all aspects might nevertheless be considered capable of performing duties safely in the aviation environment.

5.5.2 Since the Chicago Convention lays on Contracting States the duty to promote efficient and safe aviation as well as to regulate it, provision has been made in Annex 1 for the exercise of a degree of flexibility in the application of medical Standards, thus avoiding the hardship and injustice which might otherwise occur. It is essential for the maintenance of flight safety that the manner in which flexibility is exercised should be reasonably uniform throughout the world if international acceptance of licences is to be maintained. In the past, flexibility has been used in widely differing ways by States. The application of the principles set

out in this chapter will assist in achieving uniformity.

5.5.3 If the medical Standards prescribed for a particular licence are not met, the appropriate Medical Certificate shall not be issued or renewed unless the following conditions are fulfilled:

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

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

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

5.5.5 The provision of a degree of flexibility must at all times be the exception rather than the rule. Failure to observe this requirement could result in routine requirements not being met thus creating an abuse of the primary object of flexibility. When evidence accumulates that flexibility is being utilized repeatedly in a particular respect, then the appropriateness of regulations defining the medical requirements comes into question and raises suspicion that regulations are not in keeping up with the demands of flight safety.

5.5.6 When decisions to exercise flexibility are backed by an accredited medical conclusion, it indicates that these decisions have not been regarded as a routine measure but that they have been taken following close examination and assessment of all the medical facts and their relationship to occupational demands and personal performance.

5.5.7 The just and safe exercise of flexibility should be confined to the exceptional case and it ought to be considered in relation to the expertise of those concerned in applying accredited medical conclusion. The estimation of risk imposed by the individual upon flight safety is a most difficult task and one often requiring experts in a number of aspects of both medicine and aviation. Decisions should recognize that public interest and safety is the statutory basis for personnel licensing.

5.5.7.1 Medical deficiency compensation and flight safety: Where a medical deficiency exists, the extent to which flight safety is affected is the

vital factor, rather than the extent to which failure to attain the medical requirements is capable of being compensated. In some cases the question of compensation for a deficiency will be irrelevant, for example where the risk is one of sudden incapacitation rather than inability to physically carry out a required task. In other cases, the ability to compensate, for example, for an orthopedic dysfunction may be an important factor in the overall assessment of the effect on flight safety. Previously acquired skill and experience may similarly be irrelevant or important to the overall assessment of the safety risk.

5.5.7.2 *The terms "waiver" and "flexibility*": The term "medical waiver" in connection with medical certification and licensing is generally accepted. The use of the term "waiver", which in legal usage means "*an act of dispensing with a requirement*", and the verb "*to waive*" which is defined as "*not to insist upon, to exempt from, to ignore, neglect or disregard*", etc. is unfortunate. In a medical context, and its application of "flexibility" and a 'medical waiver' is quite the opposite because the decision to apply flexibility or allow a waiver is only reached after subjecting the individual involved to a critical analysis, possibly involving detailed personal examination together with deliberations by those who formulate the "accredited medical conclusion" and the decision of the Licensing Authority.

5.6 The impact of 'Pilot Incapacitation'

5.6.1 The number of air carrier accidents per year will increase if industry growth continues and accident rates remain unchanged. It is, therefore, essential to continue to examine all areas which have an impact on flight safety. One such area is that of in-flight pilot incapacitation, which can be defined as any reduction in medical fitness to a degree or of a nature that is likely to jeopardize flight safety.

5.6.2 Minor degrees of reduced medical fitness may go undetected by other crew members during normal flight operations and lowered levels of proficiency may be rationalized, e.g. poor handling may be attributed to lack of recent handling experience. However, when abnormal conditions or an emergency occurs, flight crew may have to perform complex physical and mental tasks under time constraints, and in such circumstances even a minor deficiency in performance could be operationally significant. Some effects of mild incapacitation include a reduced state of alertness, a mental preoccupation which may result in a lack of appreciation of significant factors, increased reaction time, and impaired judgment.

5.6.3 Controlling the risk of pilot incapacitation

5.6.3.1 Pilot incapacitation has been of concern for as long as powered flight has existed. It represents an operational risk and it can therefore be defined operationally as "any physiological or psychological state or situation that adversely affects performance". From the operational standpoint, the cause of the degraded performance is irrelevant as its effects are similar, and often other crew members will not know the difference. One of the most important things is that the risk to aviation safety in situations where a pilot is physically incapacitated can be virtually eliminated in multi-crew air transport operations by training the pilots to cope with such events.

5.6.3.2 The significant research conducted in 1984 (Chapman) proved that it is highly unlikely that pilot incapacitation will occur together with other major system failures. When pilot incapacitation occurs on its own in a multi-crew operation, the second pilot, if properly trained, are able to successfully control the aircraft. Data from this research resulted in the calculation of an acceptable risk of incapacitation for an individual pilot, and in the development of the '1% rule' for multi-crew operations.

5.6.3.3 ICAO recognised that pilot incapacitation is a permanent risk for airline operations and they introduced the requirement for incapacitation training in two-pilot operations in the 1970s already, which has undoubtedly reduced the risk to flight safety as a result of pilot incapacitation.

5.6.3.4 Medical screening, by itself, cannot be relied upon to reduce the hazard of incapacitation to an acceptable minimum level, even if significantly more rigorous medical standards were to be applied. Other more important aspects to control instances of pilot incapacitation include education in the causes of incapacitation, pilot training for safe handover of controls in such an event and, especially, good food hygiene.

5.6.3.5 Pilot training in the early recognition of incapacitation and in safe handover of controls has been highly effective in preventing accidents from physical incapacitation, especially after the introduction of crew resource management (CRM).

5.6.4 Causes of Incapacitation

5.6.4.1 Very few cases of pilot incapacitation occurred as a result of death in the cockpit. Incapacitation from self-limiting illness is considerably more frequent and the most frequently cited cause of incapacitation was acute gastroenteritis.

5.6.4.2 The following table contain causes for pilot incapacitation in airline pilots, in order of frequency (Adapted from Buley, 1969; Green and James, 1991)

1.	Uncontrollable bowel action (21%) and "other" gastrointestinal symptoms (54%)	75%
2.	Earache/blocked ear	8%
3.	Faintness/general weakness	7%
4.	Headache, including migraine	6%
5.	Vertigo/disorientation	4%

5.7 Foreign medical examinations

5.7.1 An applicant in a foreign country should contact an aviation medical examiner that has been approved by the Authority to perform his/her medical examination.

5.7.2 The examination has to be conducted in accordance with the requirements of the Mauritius Civil Aviation Regulations MCAR-Part-MED and the corresponding technical standards. The findings of the medical examination must be documented on the Mauritius prescribed form and must be sent to the medical assessor for certification.

5.7.3 Alternatively, an applicant can contact an examiner registered with other foreign Civil Aviation Authorities to perform the relevant Authority's medical examination. The examination forms and the medical certificate must be submitted to the medical assessor. The medical assessor may request additional examinations on behalf of the Authority. The foreign medical examiner must hold a qualification recognized by aviation authorities internationally and submit proof thereof to the Authority.

5.7.4 A medical certificate will be issued or accepted by the medical assessor and may differ from the certificate initially issued by the foreign medical examiner. Once the applicant has returned to Mauritius he/she will be required to undergo a Mauritius medical examination by a DAME.

5.8 Confidentiality of information

5.8.1 Examiners must at all times ensure that medical information remain confidential. Should an examiner on basis of clinical findings require more tests, informed consent should be obtained from the applicant.

5.8.2 Information must be released to the DCA medical assessor on request, for purposes of issuing a medical certificate or a licence, or if the examiner believes that it may have an impact on flight safety, for purposes of a review. Medical information may not be released to other parties, nor should it be printed on the medical certificate without the consent of the applicant.

APPENDIX A: Medical Evaluation form (FSS PEL 67-03)

Personnel Licensing		**FSS PEL 67-03**	
Telephone number:		Fax Number	
Physical address			
Postal address:		Email:	
PERSONAL INFORMATION (To be completed by all applicants)			
Name	Surname	First name(s)	
Postal address			
Telephone numbers	During office hours	After hours	
Date of birth		Gender	
Eye colour		Occupation	
Hair colour		Nationality	
FLIGHT MEDICAL INFORMATION (To be completed by pilots, flight engineers and cabin crew)			
Identity/ passport number		Licence number	
Medical class applied for		Licence type	
Initial or renewal application		Foreign licences	
Flight time **examination**		Type of flying intended	
Current restrictions/ protocols			
Medication used previous 3 months: (name and dosage)			
Have you ever had an aviation Medical Assessment denied, suspended or revoked by any licensing authority? If yes, discuss with medical examiner.			
Any aircraft accident or reported incident since last medical?		YES	NO
AIR TRAFFIC SERVICE MEDICAL INFORMATION (To be completed by air traffic service personnel)			
Identity/ passport number		Licence number	
Medical class applied for		Licence type:	

Initial or renewal application			Foreign licences			
Previous medical examination			**Type of ratings held**			
Doctor	Date	ATSA	Aerodrome control	Approach Control	Area Control	Instructor
Current restrictions/ protocols			Medication used previous 3 months: (name and dosage) – including over-the-counter drugs			
Have you ever had an aviation Medical Assessment denied, suspended or revoked by any licensing authority? If yes, discuss with medical examiner.						
DF (if applicable)	Number	Rank	Previous medical classification		Arm of service, unit, station	
MEDICAL HISTORY (To be completed for all applicants)						
Kindly mark the applicable block. If yes please provide complete details below. If the space is insufficient, add supplementary notes on separate sheet.						

MEDICAL HISTORY (To be completed for all applicants)								
Kindly mark the applicable block. If yes please provide complete details below. If the space is insufficient, add supplementary notes on separate sheet.								
Family history	**Y**	**N**		**Y**	**N**		**Y**	**N**
1. Heart disease or high blood pressure			13. Dizziness or unsteadiness			28. Heart murmur / valve problem		
2. Epilepsy or convulsions			14. Unconsciousness (for any reason)			29 Any blood or thyroid disorder		
3. Glaucoma or blindness			15. Head injury or concussion			30. Heartburn/ frequent indigestion		

4. Diabetes/sugar sickness			16. Epilepsy or fits of any kind			31. Stomach, liver / intestine problem		
5. Mental illness			17. Any other neurological disorder			32. Bleeding from the rectum		
Have you ever been			18. Any mental/psychological disorder			33. Kidney stone/ blood in urine		
6. Refused insurance on medical grounds			19. Suicide attempt			34. Sugar or protein in the urine		
7. Refused a flying licence, or grounded			20. Eye or vision trouble other than specs			35. Diabetes (sugar sickness)		
8. Convicted of a civil / criminal offence			21. Motion sickness requiring treatment			36. Muscle, bone or joint problems		
9. Medically rejected for military service			22. Hearing or speech disorders			37. Prostate/ Gynaecological problems		
Since your last medical, have you been			23. Hay fever or allergy			38. STD, excluding HIV		
10. Admitted to hospital			24. Asthma or lung disease			39. Malignant tumour or cancer		
11. Involved in a vehicle/aircraft accident			25. Tuberculosis or pneumonia			40. Weight loss (without dieting)		
Have you ever had / do you now have			26. Heart disease or high blood pressure			41. Malaria/ other tropical disease		
12. Frequent or severe headaches			27. Chest discomfort, pain / palpitations			42. Any other illness or injury		

Psycho-active Substances								
43.Have you used drugs other than those required for medical reasons			44.Which drugs have you used			45. When did you last use this drug(s)		
Mental Health Assessment	**Y**	**N**		**Y**	**N**		**Y**	**N**
Depression: Have you often been in last three (3) months			**Anxiety/panic attack: Have you had**			**Alcohol use: Have you ever:**		
46. Bothered by feeling down, depressed			50.An episode of feeling sudden anxiety,			54.Felt to cut down your drinking		
47.Bothered by having little interest or pleasure in doing things			51.An Episode of feeling sudden fearfulness or uneasines			55.Been annoyed by criticism about your drinking		
48.Bothered by having sleeping problems			52.To seek medical advice because of anxiety for the past year			56. Felt guilty about your drinking		
49.Marked elevation in your mood lasting for more than one week			53.Sensations of shortness of breath, palpitations or shaking while resting without reasonable cause			57. Needed a drink early in the morning		
						58. How many alcohol drinks would you have in a typical week or a typical day when you are drinking		

59. Number of cigarettes smoked daily		62. Type and number of alcoholic drinks used weekly			
60. Number of years that you have smoked		63. Drugs or other substances previously used			
61. Date that you stopped smoking		64. Whether you have had a blood test for HIV (no need to provide the result of the test)	**Y**	**N**	

REMARKS

Aviation Medical Examiner to comment in full on all items marked YES. Please attach additional pages if space is insufficient. ***Health Education and information on Disease Prevention.***

MEDICAL TREATMENT SINCE LAST EXAMINATION	
Date of medical	
Name of medical	
Diagnosis/ reason for	

NOTICE

Any person who makes, either orally or in writing, a false or misleading statement in or in connection with any application for a licence, certificate or rating issued under the Mauritius Civil Aviation Regulations or any return furnished in accordance with any requirement of these regulations, shall be guilty of an offence. (Mauritius Civil Aviation Regulations (CAR), Part 185.001.1 (1) (di – dii)

DECLARATION BY APPLICANT (To be completed by all applicants in
I hereby certify that all statements made by me in this examination form are complete and true, to the best of my knowledge, and I hereby agree – • That they are to be considered part of the basis of issuance of any medical certificate to me; and • That all medical records must be released to the DCA Medical Assessor or appointed delegate as required by the MCAR.

SIGNATURE OF APPLICANT	**NAME IN BLOCK LETTERS**	**DATE**
SIGNATURE OF DAME (AS WITNESS)	**NAME IN BLOCK LETTERS**	**DATE**

PHYSICAL EXAMINATION (To be completed by DAME)						
1. Mass			2.			
3. BMI			4. Pulse			
5. Blood						
6. Urinalysis		pH	Sugar	Protein	Appearance	Blood
	Normal					
	Abnormal					

Mark appropriate	**N**	**AB**	**Mark**	**N**	**AB**	**Mark appropriate**	**N**	**ABN**
7. Head, face, scalp and neck			13. Heart			19. Lower limbs		
8. Nose and sinuses			14. Vascular & lymphatics			20. Spine & musculo-skeletal		
9. Ears and eardrums			15. Abdomen			21. Skin		
10. Valsalva (patent bilaterally)			16. Genito-urinary system			22. Identifying body marks		
11. Romberg			17. Neurological			23. Psychological		
12. Lungs, chest and breast			18. Upper limbs			24. Any other problems		
DESCRIPTION OF FINDINGS (*Describe every abnormality in detail. Attach*								

VISUAL EXAMINATION

Visual Acuity Tests

1. Snellens Charts or similar other Optotypes
2. Should be conducted in environment the level of illumination should correspond to ordinary office illumination.

History	**Y**	**N**	10. 1Distance acuity at 6m :			11. Intermediate vision (N14 at 100 cm)		12. Near vision (N5 at 30-50 cm)	
1. Exam performed by				Uncorrected	Corrected	Uncorrected	Corrected	Uncorrected	Corrected
2. Spectacles used regularly			Both						
3. Contact lenses used regularly, should be well tolerated, monofocal and non-tinted.			Right						
Examination			Left						

4. Orbit and adnexae			13. Phorias		14. Colour vision		
5. Eye movements			Distance vertical		Test used	Number of plates	Number correct
6. Visual fields			Distance horizon				
7. Near point of convergence			Near vertical		Lantern test previously performed? State date and result		
8. Pupils			Near horizontal				
9. Fundoscopy			15. Previous eye surgery performed – state date and procedure				
			16.**Sunglasses worn during the exercise of privileges of the licence or rating held should be non- polarizing and a neutral grey tint**				

AUDIOGRAM (dB hearing loss)								**SPECIAL INVESTIGATIONS**			
	250	500	100	200	3000	400	600		Date	Result	Next due
Right								1. Resting ECG			
Left								2. Stress-ECG			

ANY OTHER TESTS PERFORMED Type and result				3. Lung function			
				4. Lipogram			
				5. Chest X-ray			

CVD RISK FACTOR ASSESSMENT						**SUMMARY OF FINDINGS**	
Item	**Y**	**N**	**Item**	**Y**	**N**	Significant history:	
(+) Family history			Obesity				
Age and gender			Hypertension				
Smoking			High cholesterol			Abnormal findings:	
Exercise			Diabetes				
Comments							
						Additional reports required:	

AVIATION MEDICAL EXAMINER ASSESSMENT AND DECLARATION					
I hereby certify that I have personally reviewed the medical history and personally examined the applicant named in this report. This report and attachments embody my findings completely and correctly.					
Recommendation		**Dates**		**Restrictions/comments**	
Fit		From			
Temporary					
Unfit					
Class		To			
Licence type					
SIGNATURE OF EXAMINER		**NAME IN BLOCK LETTERS**		**DATE**	
EXAMINER'S					
EXAMINER'S TELEPHONE					

FOR OFFICE USE ONLY				
This certifies that the				
Recommendation	**Dates**		**Restrictions/comments**	
Fit	From			
Temporary				
Unfit				

Class		To	
Licence type			
SIGNATURE OF EXAMINER	**NAME IN BLOCK LETTERS**		**DATE**
EXAMINER'S			
EXAMINER'S TELEPHONE NUMBER			

Department of Civil Aviation
SSR International Airport
Plaine Magnien
MAURITIUS

Tel: (230) 6032000
Fax: (230) 6373164
Email: civili-aviation@govmu.org

Application Form for DCA Aeromedical Examiner Initial Certification

Personal Details:

Full Name Underline Surname	
Date of Birth	
Correspondence Address	
Current Principal Business Address	
Telephone Number(s)	
Email Address	
Website	
Languages spoken	
Emergency contact: (Name and details)	

Medical Registration and Licensing:

Country of Medical Registration	Medical Registration Number	Date gained Full Medical Registration	Date of expiry of Current Medical Registration

Primary Medical Qualification:

Primary Medical Degree	Awarding Body	Date Awarded

Postgraduate Qualifications:

Postgraduate Qualification	Awarding Body	Date Awarded

Certificate of Completion of GP or Specialist Training:

Date Certificate of Completion of Specialist Training Awarded	Awarding Body	Specialty

Current Employment: Please provide details of your current employment with a brief summary of responsibilities.

Job Title	Employer	Brief Summary of clinical activities	Dates of employment

Previous Employment: Please list your previous four employments in chronological order. If there are any significant gaps in your employment history, please provide details on a separate sheet.

Job Title	Employer Name	Dates of employment

Aviation Medicine Training Courses e.g. Basic and Advanced Courses:

Course Name	Organisation	Date completed	Grade achieved

Aviation Medicine Qualifications e.g. Diploma or MSc in Aviation Medicine:

Qualification	Awarding Body	Date awarded

Flying Experience i.e. Private/Commercial Pilot Licences, Instrument Ratings:

Pilot Licences Held	Country of Licence Issue	Date of Issue	Date of expiry	Total pilot flying hours

Aviation Medicine Experience:

Please provide details e.g. nature, duration and frequency of work, exact dates undertaken and with which organisation. If you have performed Aeromedical examination for another Regulator, please state Class / type and number of Medicals performed within the last 5 years. If you have any practical experience within an Aeromedical Centre, please detail activities undertaken, give number of hours and attach a programme of training received. A signed letter of verification of all declared aviation medicine experience is required from a medical referee who should include their job title, organisation, national medical registration number and AME number if applicable.

Other relevant Aviation Affiliations:

Aviation Organisation/ Professional Aviation Bodies	Dates of membership	Activity/Role

AME Certifications Held with Other Aviation Regulatory Authorities e.g. FAA, Transport Canada, CASA etc:

Aviation Authority and Country	Date of Initial Issue	Do you hold current certification?	If expired, give expiry date

If you have been an AME for another aviation regulatory authority, have you ever been subject to an investigation by the authority or has your AME certification ever been suspended or revoked by the authority?

YES / NO If YES, please provide details on a separate sheet.

Do you hold current, valid medical registration, without any conditions or restrictions? **YES / NO** If NO, please provide details on separate sheet.

Professional History: Please answer ALL of the following questions where applicable:

If UK General Medical Council (GMC) Registered, do you hold a GMC Licence to Practise?

YES / NO If NO, please provide details on separate sheet.

If UK General Medical Council (GMC) Registered, please provide the following:

Name and Address of Designated Body:

Name, Position, Organisation Address, Contact Telephone Number and email of your Responsible Officer:

Mauritius Medical Council Revalidation Date:

Have you ever been the subject of disciplinary action arising from your professional practice**?**

YES/NO If YES, please provide details on a separate sheet.

Have you ever been subject to any inquiry, investigation or hearing by a registration body or had any conditions imposed on your practice, been suspended or erased from the medical register in any country?

YES/NO If YES, please provide details on a separate sheet.

Have you ever been convicted of any criminal offence?

YES/NO If YES, please provide details on a separate sheet.

Are you aware of any circumstance or situation, relating to professional matters, in which you have been involved or may become involved in the future, that the DCA should be made aware of?

YES/NO If YES, please provide details on a separate sheet.

DECLARATION

In returning this form I am consenting to the disclosure to third parties of all information which I have provided to the DCA and that relates to me. I understand that information would only be disclosed to third parties by the DCA for regulatory purposes. This may include providing information to other medical professionals, administrative workers and/or IT workers who are assisting the DCA with its regulatory functions and may also be given access to personal information in the course of their professional duties.

I confirm that the information provided in this form is complete and accurate. ☐ *(Please tick)*

I am in good standing as a medical practitioner and I am fit to practise. ☐ *(Please tick)*

Signature:..... **Date:.....**

N.B. Please be aware that any false declaration can result in the permanent revocation of AME certification and referral to the relevant authorities.

Please use the Checklist below to ensure **ALL** required documents are attached, in order to expedite the processing of your application. **Photocopies only,** should be sent with your application. Originals may be requested later, if required.

A Curriculum Vitae (CV) is optional.

	Enclosed	DCA Use only
Completed and signed Application Form		
Copy of Photo Id *(Passport / Driving Licence)*		
Passport sized colour photograph		
Copy of valid current Medical Registration Document		
Copies of Primary Medical Degree and Postgraduate Degrees		
Copy of Certificate of Completion of Specialist Training		
Copies of Certificates of Aviation Medicine Courses Passed		
Copies of Aviation Medicine Degrees		
Copies of Pilot Flying Licence		
Signed Verification of Aviation Medicine Experience from Medical Referee		
Completed Premises form		

Your completed application form and copies of supporting documents should be sent to:

Department of Civil Aviation
SSR International Airport
Plaine Magnien
MAURITIUS

Please note that if your application for AME initial certification is successful, you will be required to attend training by a DCA a Medical Examiner authorized to complete initial administration and familiarization training **and** to confirm that you have the required facilities / equipment to practice as an AME, by completion of an AME New Premises Form, **before AME certification is complete.** In addition, an Audit Visit to your AME premises may be necessary.

All AMEs are required to comply with the Terms and Conditions of an AME and are responsible for payment of AME Certification.