AERO-MEDICAL HANDBOOK

GAMBIA CIVIL AVIATION AUTHORITY

GCAA Order No. 8

Vol. 2 – DESIGNATED AVIATION MEDICAL EXAMINER

BY THE ORDER OF THE GAMBIA CIVIL AVIATION AUTHORITY

MANUAL #: C

Issued by:.....
DIRECTOR GENERAL

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1. FOREWORD

This Order No. 8 is one of the set Orders forming the Authority's internal standard policy and procedures documentation set. These Orders are produced to provide the information, policy and procedures needed to perform the tasks as required by the CAA Act and Civil Aviation Regulations (GCARs).

This Order No. 8 Volume 2 has been specifically prepared for the use and guidance of all Assessors and Designated Aviation Medical Examiners in the performance of their duties.

Adherence to the procedures and guidelines contained herein are mandatory as all examiners are carrying out their duties on behalf of the Authority, which is their foremost responsibility. It is however, emphasized that all matters pertaining to a DAME's duties and responsibilities cannot be covered in this Order. Therefore, DAMEs are expected to use good judgment in matters where specific guidance has not been given.

This Order No. 8 Vol. 2 is a dynamic document, as a result of changes in legislation, within the aviation industry, experience and new technology, there may be the need for amendments. I therefore, encourage the contribution of comments and recommendations for revision/amendment action to this publication for the improvement of its content.

The undersigned Director General is accountable for approving the contents and amendments of this Order.

……..
Abdoulie Ebrima Jammeh
DIRECTOR GENERAL

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2. INTRODUCTION

As an autonomous and apex statutory body, the Gambia Civil Aviation Authority is charged with the responsibility of monitoring, regulating, setting safety and economic standards for air navigation in The Gambia and ensuring compliance with the Standards and Recommended Practices of the ICAO Annexes by all Operators and Personnel.

ICAO encourages all contracting states to establish a Flight Standard Inspectorate to meet the requirements set forth in the convention on international Civil Aviation. The organizational structure of the inspectorate within the GCAA hereinafter referred to as Flight Safety Standards (FSS) has the following primary responsibilities:

- certification,
- licensing
- surveillance
- inspection,
- investigation,
- enforcement, and
- counseling of personnel, operators and service providers.

Amendments to this Order shall be issued from time to time as the need arises, so that all concerned will be adequately informed of acceptable policies and procedures applicable to the various duties and tasks to be performed.

By using this Order as a guide, there should be reasonable degree of uniformity and standardization within the Gambian Aeromedical Industry. If there is any need for a DAME to deviate substantially from the prescribed requirements of any instruction, the Assessor must as soon as possible be notified. Full details of the matter with reasons why deviation became necessary, must be given. However, if possible, notification for obvious reasons should be made before any deviation is effected

3. CANCELLATION

This Order cancels and supersedes the following Orders and Directives:

1. None

4. STATUTORY REQUIREMENTS

The Director General is mandated to appoint designated aviation medical examiners (DAMEs) to perform tasks on his behalf. A DAME carries out medical examinations and medical certification on behalf of the Director General and each examiner is designated based upon the particular medical practitioner's experience. The Director General may also appoint specialists for the performance of specific duties relating to cases of medically unfit assessments and for purposes of investigations, examinations and research to determine these cases.

It is the DAME's responsibility to be familiar with all statutory requirements and to ensure that during the course of their duties, that they are complied with.

It is important to note that the Director General remains accountable for the tasks designated to DAMEs and therefore the medical assessor is responsible to carefully control the appointment of DAMEs and to oversee their functioning.

DAMEs must disclose any potential conflict of interest in terms of performing their duties. Should any DAME come into a situation of conflict of interest during the performance of their designated powers, a full report of the circumstances shall be immediately submitted to the Director General for review. When it is established that a DAME did not disclose his interest and it is interfering with his designated responsibilities, the Director General may suspend or revoke the designation.

The Director General may appoint foreign medical examiners where required or alternatively accept foreign medical certificates after review of acceptability of medical standards that were applied.

No revocation, suspension or restriction for cause, of a DAME authority shall be considered punitive or disciplinary. However, where other sections of the GCARs are knowingly breached during the discharge of DAME duties, the Director General may act upon such infractions.

5. CODE OF CONDUCT

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

1) They have not been denied designation as a DAME at any previous occasion,
2) They are aware that designation is a privilege and not a right and is granted at the sole discretion of the Director,
3) They are aware that designation may at any time be withdrawn for good reason,
4) They are familiar with the contents of all regulations that applies to their designation;
5) They are aware that honesty and integrity are essential pre-requisites for designation and the maintenance thereof.

All DAMEs must undertake to at all times:

1) Provide factually correct information to the Authority,
2) Comply with the applicable regulations as contained in GCAR as pertaining to their designation,
3) Uphold and maintain the GCAA medical examination standards and protocols,
4) Conform to all procedures of the regulations and this Handbook,
5) Inform GCAA within 30 days of any changes in contact information
6) Exercise their duties as DAMEs without bias and prejudice,
7) Be honest and fair in all assessments,
8) Act professionally and with integrity, and
9) Ensure that any potential conflict of interest with any candidate is declared to the Medical Assessor in advance of any assessment being conducted.

6. OVERSIGHT PROGRAMME

The Medical Assessor is responsible for the development, implementation, supervision and evaluation of the oversight programme for Designated Aviation Medical Examiners.

The Authority shall hold at least one Designated Aviation Medical Examiner meeting every two years to review problem areas, examiner performance, examination requirements and procedures and to discuss standardization matters. Attendance at this meeting is mandatory and shall be recorded in the examiner's file.

7. DESIGNATED EXAMINER RECORDS

The Authority shall keep a file on each examiner. The file may contain photocopies of the information or may be an electronic file from which data is easily retrieved. The DAME's file will be reviewed annually.

The following records must be retained by the medical assessor:

1) Records of medical examinations performed by DAMEs (due to confidentiality of records it must be kept in a safe with strict access control procedures - records can only be accessed by the medical assessor or person authorized by the medical assessor);
2) Records of annual DAME meetings including organization, agendas, contents, meeting minutes, attendance register, and standardization documentation and/ or courses;
3) Records of surveillance/ inspection and DAME performance;
4) Records of 'accredited medical conclusion' decisions;
5) Records of any special medical or operational tests performed (confidential and to be kept in the safe);
6) Records of examiner designation with supporting documents;
7) Records of any revocation, suspension or cancellation of designations;
8) Records of research, new developments and decisions around implementation of new standards and protocols; and
9) All correspondence (about, from and to the DAMEs) or related to medical certification.

8. RECORD OF REVISIONS

This is Issue 1 of Order No. 8. Amendments shall be by page replacement or addition, or by re-issue of the complete manual. The table below shall be completed for effecting any amendments to this manual.

REVISION Nº	DATE OF REVISION	APPROVAL	CHAPTER AFFECTED	EFFECTIVITY DATE
ORIGINAL	**MAY 2018**		ALL	**MAY 2018**

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11. DISTRIBUTION LIST

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12. ACRONYMS

- AAN – Aerodrome and Air Navigation
- AOC – Air Operator's Certificate
- ASI – Aviation Safety Inspector
- AWI – Airworthiness Inspector
- DAME – Designated Aviation Medical Examiner
- DG – Director General
- FOM – Flight Operations Manager
- FOI – Flight Operations Inspector
- FSD – Flight Safety Director
- GCAA – Gambia Civil Aviation Authority
- GCAR – GambiaCivil Aviation Regulations
- MAW – Airworthiness Manager
- PEL – Personnel Licensing

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CHAPTER 1 – CIVIL AVIATION MEDICAL SYSTEM

1.1 AVIATION MEDICINE IN CONTEXT

1.1.1 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.

1.1.2 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.

1.1.3 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.

1.1.4 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.

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

1.1.6 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.

1.1.7 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.

1.1.8 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.

1.1.9 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.

1.1.10 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.

1.1.11 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.

1.1.12 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.

1.1.13 Designated 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.

1.2 ICAO AND CIVIL AVIATION MEDICINE

1.2.1 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 Gambia is one, and provide for the adoption of International Standards and Recommended Practices (SARPs) regulating international air transport.

1.2.2 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.

1.2.3 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.

1.2.4 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:

1) Annex 1 Personnel Licencing
2) Annex 2 Rules of the Air
3) Annex 6 Operation of aircraft
4) Annex 13 Aircraft Accident and Incident Investigation
5)

1.2.5 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).

1.2.6 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.

1.2.7 The Gambia is one of the 194 Contracting States to ICAO. The headquarters of ICAO is situated in Montreal, Canada.

1.2.8 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.

1.2.9 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.

1.3 NEW CONCEPTS IN AVIATION MEDICINE

1.4 Expert Opinion

1.4.1 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. The Authority will rely on expert opinion in most cases, but may also use alternative means for aeromedical decisions.

1.4.2 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.

1.5 Acceptable Aeromedical Risk

1.5.1 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.

1.6 Medical Examinations

1.6.1 Regulatory authorities require license holders to undergo an medical 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, behavioural 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.

1.6.2 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 behavioural 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.

1.7 Safety Management's Risk based approach

1.7.1 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.

1.7.2 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.

1.7.3 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:

1) In-flight medical events;
2) Medical events that occur between flights, but which would have been of importance had they occurred in flight; and
3) Medical conditions discovered by the medical examiner during a routine medical examination.

1.7.4 *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.

1.7.5 *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.

1.7.6 *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.

1.8 Future Approach

1.8.1 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.

1.8.2 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:

1) 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.
2) 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.
3) Improved reporting and analysis of in-flight medical event data.
4) 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.

1.9 AVIATION MEDICINE IN GAMBIA

1.9.1 In Gambia, the services related to Aviation Medicine are carried out by designated medical examiners who are designated and monitored by the Authority to ensure that medical examinations are carried out in accordance with the requirements of the GCARs , ICAO Standards and in accordance with this Handbook.

1.9.2 The role of the Authority will be strengthened by contracting or employment of a medical inspector who would fulfil the role of medical assessor as intended by the GCAR.

1.9.3 The Director has not designated a body or institution to perform functions related to medical certification on its behalf and remains responsible for carrying out oversight over medical certification in The Gambia.

1.9.4 The Director shall consider establishing a panel of medical advisors consisting of medical, psychological, surgical and ancillary health experts to advise her 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*'.

1.10 AVIATION MEDICINE FUNCTIONS AND RESPONSIBILITIES

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

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

1.10.3 The Authority ensures the following: –

1) Exercise control over medical examinations or tests and over aviation medical examiners performing such examinations or tests;
2) Determine standards for such examinations or tests and for the training of such aviation medical examiners;
3) Issue or amend medical certificates and documents regarding such examinations or tests;

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

1) Monitor the developments within the field of aviation medicine worldwide.
2) Ensure compliance with the medical provisions as required by ICAO SARPS.
3) Determine the medical standards for licensing and monitoring compliance thereof.
4) Oversee the medical certification system,
5) Oversee designated aviation medical examiners,
6) Assess medical standards and procedures associated with:

a) Flight operating conditions and flight crew performances

b) Air traffic control staff performance

c) Conditions of work relating to safe performance of aviation duties

d) 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

e) Medical equipment used in the aviation environment

f) Survival of aircraft accidents by crew and passengers

CHAPTER 2 – AME DESIGNATION

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CHAPTER 2 – AME DESIGNATION

1.1 PROGRAM DESCRIPTION

1.1.1 The Authority is responsible in accordance with the GCARs 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 and air traffic controllers. In accordance with the Gambia Civil Aviation Regulation 135 *"the Authority may designate qualified and licensed physicians in the practice of medicine, to be authorised as AME and conduct medical examinations of fitness of applicants for the issue, renewal or re-issue of the licences or ratings."* The designated aviation medical examiner (DAME) program therefore allows an individual medical physician the opportunity to conduct aviation medical examinations independent of the Authority.

1.1.2 A designated aviation medical examiner authorization is an official authorization and is conditional upon the qualification and experience of the person to carry out the powers, duties and functions of the Director. 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.

1.1.3 A DAME may be authorized to conduct medical examinations for Class 1, 2 or 3 medical certificates as prescribed in the GCARs.

1.1.4 The number of DAMEs and their conduct with respect to medical examinations of licence holders are closely monitored by the Authority. A medical assessor shall review any of the medical examinations conducted by the DAME and perform oversight functions on any DAME.

1.2 DAME PRIVILEGES

1.2.1 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.

1.2.2 DAMEs will qualify for their privileges after receipt of their designation letters and certificate. The designation is issued for five (5) year for DAMEs residing in The Gambia and one (1) year for foreign DAMEs after which it may be re-issued

if the DAME. applies for renewal and complies with the requirements of the GCARs and this Manual.

1.3 DAME AUTHORITIES

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

1.3.2 A DAME has the authority to personally conduct physical examinations in accordance with the guidance and practices as laid down by the Authority;

1.4 DAME DESIGNATION CRITERIA

1.4.1 In the selection and retention of DAMEs, the medical assessor will recommend only professionally qualified, practicing physicians who have an expressed interest in promoting aviation safety to the Director. 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 Director. The applicant's past professional performance and personal conduct must be suitable for a position of responsibility and trust.

1.5 DESIGNATION CRITERIA (For Class 2 and 3 Medical Examinations)

1.5.1 QUALIFICATIONS: The applicant must –

1) Be a professionally qualified physician in good standing.
2) Possess an unrestricted licence(s) to practice medicine in The Gambia (and where applicable in the foreign country for which the designation is sought).
3) Have completed basic training in aviation medicine and
4) 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.)

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

1.5.3 CONDITIONS OF DESIGNATION: To become a DAME, the applicant must agree to comply with the requirements.

1.5.4 CHANGE OF STATUS: The DAME must promptly notify the Director or Medical Assessor, should there be a change in the DAME's status of authority to practice medicine.

1.5.5 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 The Authority would present workshops on requirements to DAMEs upon initial appointment.

1.5.6 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 and submit the result to the DAME. The DAME shall sign the documents and list his/her designation identification number, both on the application form and on the medical report. In all cases the DAME must review, certify, and assume responsibility for accuracy and completeness of the total report of examination.

1.5.7 CONTINUING EDUCATION: Each physician must attend at least one aviation medical conference and/or training course within each 3-year interval. Travel costs and other expenses for the DAME and staff to attend the conferences are the responsibility of the DAME. Or in some cases, the Authority's

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

1.5.9 CONDUCT: The DAME must comply with the policies, orders and regulations of the Authority or Medical Assessor appointed by the Director General.

1.6 DESIGNATION CRITERIA (For Class 1 medical examinations)

1.6.1 In addition to the criteria for designation as a DAME as contained in 3.5.2 above, the physician must have had received advanced training in aviation medicine.

1.6.2 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.

1.6.3 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.

1.6.4 DURATION OF DESIGNATION: Designations of physicians as DAME are effective for 5 years (for DAMEs resident in The Gambia) following the date of issue, unless terminated earlier by the Director or the designee. Designation of foreign medical examiners shall be valid for 1 year for better oversight function.

1.7 DAME DESIGNATION

1.7.1 LETTER OF DESIGNATION: The Director 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:

1) The authority and privileges of the DAME;
2) 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*;*
3) A declaration that the DAME understands, accepts and will carry out the privileges, duties and functions of the Director in accordance with all requirements and medical standards, including the procedures contained in this Manual;
4) Any other appropriate conditions of issuance; and
5) The expiry date of the Designation of authority

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

1) Successfully completed the selection process,
2) Procured/has access to such equipment necessary to conduct the medical examinations for
3) the particular classes of medical certificates that they have been authorized for, and

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

1.8 DURATION OF DESIGNATION

1.8.1 Designation as DAME is valid for a maximum period of five year for DAMEs resident in the The Gambia and one year for foreign DAMEs from date of designation.

1.9 RE-DESIGNATION

1.9.1 The Authority will re-designate the DAME if it finds out that the AME continuous to meet at least the same standard for which he/she met at the time of the initial/previous designation. The re-designation shall be done just prior to the expiry of the current one.

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

1) Demonstrated satisfactory performance in the past,
2) Continued to show a definite interest in the DAME programme,
3) Taken satisfactory action to correct any examination and certification errors when identified, (d) Shown interest and participation in aeromedical programmes and conferences,
4) Continued to act professionally and in accordance with the applicable GCAR requirements and the procedures of this Handbook, and
5) Performed at least 5 examinations within the designation period for DAMEs in The Gambia and 2 examinations for the period of designation of foreign DAMEs.

1.10 BASIS FOR TERMINATION OR NON-RENEWAL OF DESIGNATION

1.10.1 The Authority may terminate or refuse to renew the designation based on the following criteria-

1) Disregard of, or failure to demonstrate knowledge of the rules, regulations, policies and procedures of the Authority;
2) Repeated errors after receiving warnings from the Medical Assessor;
3) Failure to attend required conferences and/or continued aviation medical

education;

4) Repeated failure to participate in any aviation medical programme when requested to do so by the Authority;

5) Unprofessional conduct in performing examinations;

6) Failure to comply with the provisions of the GCARs;

7) Personal conduct or public notoriety that may reflect adversely on the Authority;

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

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

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

11) Arrest, indictment or conviction for violation of law;

12) Request by the physician for termination of designation; or

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

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

1.10.3 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:

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

2) 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.)

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

1.10.5 Whether by determination to not re-designate or termination of designation during the designation year, the DAME must return all GCAA materials (including this Manual, forms, AME Stamp and certificate of designation) to the Authority.

CHAPTER 3 – DAME RESPONSIBILITIES

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CHAPTER 3 – DAME RESPONSIBILITIES

1.1 GENERAL

1.1.1 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:

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

1.2 SERVICE

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

1.2.2 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.

1.2.3 The DAME must conduct the medical examination according to the medical standards in, this Manual and in a private area free from distractions.

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

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

1.2.6 Prompt forwarding of medical records and examination reports

1.2.7 A DAME must ensure that the original medical examination forms and supporting records are submitted immediately to the Authority's Personnel Licensing office for the attention of the Medical Assessor.

1.2.8 Records of medical examination and medical certificate issued to the candidate must be kept by the Medical Assessor for as long as the applicant is exercising the privileges of his/her licence. If the licence holders seizes to practice, it shall be kept for a period of 2 years after which it shall be moved to archives.

1.2.9 If a medically unfit assessment decision is made, the DAME must immediately notify the PEL office (by telephone calls and in writing) and forward the medical records to the medical assessor for review and final conclusion.

1.3 STANDARDIZATION

1.3.1 All DAMEs must conduct medical examinations in accordance with the applicable medical standards contained in the GCARs and attend standardization seminars/workshops when arranged by the Authority.

1.4 RECORDS

1.4.1 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:

1) Letter of designation and certificate
2) Proof of attendance of the DAME refresher seminar/conference as required.

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

1.5 DAME'S NOTIFICATION RESPONSIBILITIES

1.5.1 DAMEs will advise the Authority 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.

1.6 RECURRENT MONITORING PROCESS

1.6.1 DAMEs must make themselves available for the monitoring and auditing process of the Authority. The purpose of recurrent monitoring of DAMEs is to

verify a uniform standard is applied during the conduct of medical examinations by all DAMEs.

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

1.6.3 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.

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

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

1.6.5 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 GCAA file.

1.7 LIABILITY - DELEGATED AUTHORITY

1.7.1 DAMEs receive their authority to conduct aviation medical examinations on behalf of the Authority by means of a "designation certificate". DAMEs are working under the auspices of the Authority 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.

1.8 CONFLICT OF INTEREST

1.8.1 "*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.

1.8.2 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 GCAR 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:

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

1.8.3 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).

1.8.4 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 Medical Assessor for review, before commencing any of their designated duties.

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

CHAPTER 4 – EXAMINATION AND DOCUMENTATION PROCEDURES

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CHAPTER 4 – EXAMINATION AND DOCUMENTATION PROCEDURES

1.1 GENERAL

1.1.1 The aviation medical examiner may be the only physician an applicant will consult for of a medical examination. 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.

1.1.2 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.

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

1.1.4 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.

1.2 MEDICAL EXAMINATION FORM COMPLETION

1.2.1 MEDICAL EXAMINATION FORMS AND MEDICAL CERTIFICATES: The medical examiner must send the original medical examination form/report to the Medical Assessor immediately after examination was conducted. The assessor will issue the applicant with his/her original medical certificate and another will be kept in the licensing file of the applicant. A copy will be kept by the assessor.

1.2.2 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.

1.2.3 For the medical examination form the following are required:

1) The medical certificate form can be obtained from the Authority and must be printed out for use.
2) The medical examination form must be obtained from the Authority or can be downloaded from the Authority's web site;
3) No self-developed examination forms or medical certificates other than those provided by the Authority will be accepted;
4) All documents must be signed by both parties in all the relevant places;
5) Forms with tippex will not be accepted;
6) Incomplete/illegible forms or certificates will not be accepted;
7) The medical examiner's designation number must be on all documentation;
8) If any changes or corrections are made on the medical examination form, the medical examiner must sign next to it;
9) No corrections will be accepted on the medical certificate;

1.3 Medical Examination Form: 'History'

1.3.1 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.

1.3.2 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.

1.3.3 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.
Type of Licence Held or applied for	The licence type must be indicated
Flight time	For pilots, state total number of hours flown in an operating capacity.

Question	Description
Medical class applied for	The Class applied for must be indicated in the Application Form for Medical Certificate (FSS-PEL-FORM 015)
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
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.

Question	Description
	• 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 Authority
–Declaration	• The applicant must read, date and sign the declaration and the signature must be witnessed. • The DAME must sign as witness.

1.4 Medical Examination form: 'Physical Examination'

1.4.1 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.

1.4.2 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.

1.4.3 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.

1.4.4 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
Gynaecological and rectal	• The gynaecological examination and the rectal examination may be performed by the applicant's gynaecologist, urologist or general

Question	Description
examination	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 behaviour during future examinations.
Findings and referral	If applicant has been referred for further evaluation, the name of the person as well as thereasons 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 • Has personally reviewed the history, • Has personally examined the applicant, and • 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.

1.5 Operational restrictions and medical requirements

1.5.1 EXAMINATION FORM: The medical examiner must indicate all operational restrictions and medical requirements in detail on the examination form.

1.5.2 MEDICAL CERTIFICATE: Operational restrictions should be documented clearly on the medical certificate according to the table below.

1.5.3 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.

1.5.4 If medical reports are required for future examinations, the following restriction must be documented: “Medical reports to be submitted with next medical examination."

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

	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".
8	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

	Operational restrictions
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

1.6 Examination Reminder

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

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

1.6.3 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.

1.7 Licence Restrictions

1.7.1 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.

1.7.2 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."

1.7.3 .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.

1.8 Practical Flight Tests

1.8.1 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 medical assessor to arrange for a practical flight test with a GCAA inspector.

1.8.2 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.

1.8.3 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 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.

1.8.4 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 Authority to estimate the applicant's ability to perform under normal as well as adverse flight conditions.

1.8.5 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.

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

1.9 Deformity or Absence of Extremities

1.9.1 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.

1.10 Defective Hearing

1.10.1 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:

1) a) Ability to hear radio voice and signal communications;
2) 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.)

1.11 Speech Defects — Stammering, Stuttering

1.11.1 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.

1.12 Mental Health and Behavioural Evaluation

1.12.1 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.

1.12.2 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.

1.12.3 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 behavioural aspects of an individual's health. The examples of questions below may serve to promote an intial discussion between the medical examiner and the medical certificate holder.

1.12.4 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.

1.12.5 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.

1.12.6 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.

1.12.7 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.

1.12.8 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.

1.12.9 Suggested questions for depression:

1) During the past three months, have you often been bothered by feeling down, depressed or hopeless?
2) During the past three months, have you often been bothered by having little interest or pleasure in doing things?
3) 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?
4) In the past three months, has there been a marked elevation in your mood lasting for more than one week?

1.12.10 Suggested questions for anxiety/panic attack:

1) In the past three months, have you had an episode of feeling sudden anxiety, fearfulness, or uneasiness?
2) 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?

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

1.12.11 Suggested questions concerning alcohol use:

1) Have you ever felt that you should cut down on your drinking?
2) Have people annoyed you by criticizing your drinking?
3) Have you ever felt guilty about your drinking?
4) Have you ever needed a drink first thing in the morning?
5) How many alcoholic drinks would you have in a typical week?
6) How many alcoholic drinks would you have on a typical day when you are drinking?

1.12.12 Suggested questions concerning drug use:

1) Have you used drugs other than those required for medical reasons?
2) Which non-prescription (over-the-counter) drugs have you used? When did you last use this drug(s)?

1.13 Flexibility in Application of Medical Requirements

1.13.1 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.

1.13.2 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.

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

1) Accredited medical conclusion indicates that in special circumstances the

applicant's failure to meet any requirement, whether numerical or otherwise, is such that exercise of the privileges of the licence applied for is not likely to jeopardize flight safety;

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

3) The 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.

1.13.4 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.

1.13.5 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.

1.13.6 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.

1.13.7 *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 orthopaedic 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.

1.13.8 *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.

1.13.9 Notwithstanding GCAR 2018 Part 2 Regulation 144, the Authority may not allow the deferment of medical examination.

1.14 THE IMPACT OF 'PILOT INCAPACITATION'

1.14.1 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.

1.14.2 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.

1.15 Controlling the Risk of Pilot Incapacitation

1.15.1 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 institutions 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.

1.15.2 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.

1.15.3 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.

1.15.4 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.

1.15.5 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).

1.16 Causes of Incapacitation

1.16.1 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.

1.16.2 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%

1.17 FOREIGN MEDICAL EXAMINATIONS

1.17.1 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.

1.17.2 The examination has to be conducted in accordance with the requirements of the GCAR 2018 Part 2 and the corresponding technical standards. The findings of the medical examination must be documented and sent to the medical assessor for certification.

1.17.3 A medical certificate will be issued by the medical assessor.

1.18 CONFIDENTIALITY OF INFORMATION

1.18.1 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.

1.18.2 Information must be released to the medical assessor, 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.