CIVIL AVIATION AUTHORITY OF NEPAL

AVIATION SAFETY DEPARTMENT

MEDICAL REQUIREMENTS

Date: April, 2009
CIVIL AVIATION AUTHORITY OF NEPAL

FOREWORD

MEDICAL REQUIREMENTS is prepared as per Article 82 of Civil Aviation Authority of Nepal, Civil Aviation Regulation 2058 (2002) under the authority of Civil Aviation Authority of Nepal Act 2053 B.S. (1997 A.D.) in exercise of the power conferred to Director General, Civil Aviation Authority of Nepal.

MEDICAL REQUIREMENTS is hereby approved by Director General of Civil Aviation Authority of Nepal and is issued with immediate effect after having been extensively revised as per ICAO Annex-1, Standard and Recommended Practices.

This requirements replaces the second edition of Medical Manual.

Keshab Raj Khanal
Director General
Civil Aviation Authority of Nepal

Date: April, 2009
<table>
<thead>
<tr>
<th>No.</th>
<th>Date</th>
<th>Entered by</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8&lt;sup&gt;th&lt;/sup&gt; April, 2011</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>25 June, 2013</td>
<td></td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>APPLICABILITY</strong></td>
<td>vii</td>
</tr>
<tr>
<td><strong>DEFINITIONS</strong></td>
<td>viii</td>
</tr>
<tr>
<td><strong>ABBREVIATIONS</strong></td>
<td>x</td>
</tr>
<tr>
<td><strong>PREFACE</strong></td>
<td>xi</td>
</tr>
<tr>
<td><strong>PART 1 POLICIES AND PROCEDURES FOR MEDICAL EXAMINATION AND ASSESSMENT</strong></td>
<td>1</td>
</tr>
<tr>
<td>1.1 REQUIREMENT OF MEDICAL ASSESSMENT</td>
<td>1</td>
</tr>
<tr>
<td>1.2 MEDICAL FORMS AND INSTRUCTIONS</td>
<td>1</td>
</tr>
<tr>
<td>1.3 MEDICAL HISTORY AND DECLARATION OF TRUTH</td>
<td>2</td>
</tr>
<tr>
<td>1.4 MEDICAL EXAMINATION</td>
<td>2</td>
</tr>
<tr>
<td>1.5 MEDICAL ASSESSMENT</td>
<td>4</td>
</tr>
<tr>
<td>1.6 MEDICAL CONFIDENTIALITY</td>
<td>5</td>
</tr>
<tr>
<td>1.7 MEDICAL FITNESS</td>
<td>5</td>
</tr>
<tr>
<td>1.8 DECREASE IN MEDICAL FITNESS</td>
<td>5</td>
</tr>
<tr>
<td>1.9 BORDERLINE MEDICAL FINDING</td>
<td>6</td>
</tr>
<tr>
<td>1.10 ACCREDITED MEDICAL OPINION</td>
<td>6</td>
</tr>
<tr>
<td>1.11 MEDICAL FLIGHT TEST</td>
<td>6</td>
</tr>
<tr>
<td>1.12 FLEXIBILITY CLAUSE</td>
<td>7</td>
</tr>
<tr>
<td>1.13 MEDICALLY UNFIT OR DEFERRED MEDICAL ASSESSMENT</td>
<td>7</td>
</tr>
<tr>
<td>1.14 SUSPENSION OF LICENCE ON MEDICAL REASON</td>
<td>8</td>
</tr>
<tr>
<td>1.15 PROVISION OF APPEAL</td>
<td>8</td>
</tr>
</tbody>
</table>

Medical Requirements
Issue Date: April, 2009
Amendment No.: 2
Date: June 25, 2013
CIVIL AVIATION AUTHORITY OF NEPAL

1.16 EXPIRED LICENSE DUE TO MEDICAL REASON 8
1.17 VALIDATION OF FOREIGN LICENSE 8
1.18 DISPENSATION OF MEDICAL EXAMINATION AND ASSESSMENT 9
1.19 EXCEEDING CUMULATIVE FLIGHT HOURS LIMITATION 9
1.20 FEE 9
1.21 CIVIL AVIATION MEDICAL EXAMINER 9
1.22 CIVIL AVIATION MEDICAL ASSESSOR 10
1.24 MEDICAL ASSESSMENT CLASSES 11
1.25 VALIDITY PERIOD OF MEDICAL ASSESSMENT 11
1.26 MEDICAL VALIDITY 11
1.27 AGE 13
1.28 HEIGHT 13
1.29 WEIGHT 13

PART 2 MEDICAL STANDARDS OF LICENCING REQUIREMENTS 14

PART 3 GUIDELINES ON MEDICAL CONDITIONS 39

3.1 `NEURO-PSYCHIATRIC CONDITIONS 41
3.2 NEUROLOGICAL CONDITIONS 41
3.3 CARDIO-VASCULAR CONDITIONS 44
3.4 RESPIRATORY CONDITIONS 53
3.5 GASTRO-INTESTINAL CONDITIONS 54
3.6 GENITO-URINARY CONDITIONS 55
CIVIL AVIATION AUTHORITY OF NEPAL

3.7 METABOLIC, NUTRITIONAL AND ENDOCRINAL CONDITIONS 56

3.8 MUSCULO-SKELETAL CONDITIONS 59

3.9 EAR, NOSE & THROAT CONDITIONS 60

3.10 EYE CONDITIONS 61

ATTACHMENT-A
Application and Statement Form A-1/6
Medical Examination Form A-2/6
Medical Examination Form (For Eye Specialist) A-3/6
Medical Examination Form (For ENT Specialist) A-4/6
Medical Assessment Form A-5/6
Medical Certificate A-6/6
Pocket size Medical Certificate (Sample)

ATTACHMENT-B
Instruction for Applicants : B-1/2
Instruction for Medical Examiner : B-2/2

ATTACHMENT-C
Medical Examiner Clinic/Hospital Inspection Checklist
Physical and Mental : C-1/3
Eye, Visual acuity and Colour perception : C-2/3
Ear, Nose, Throat Examination : C-3/3
APPLICABILITY

MEDICAL REQUIREMENTS specifies Policies and Procedures of Medical Examination and Assessment and Medical Standards for Licencing Requirements of Flight Crews and Air Traffic Controllers, and outlines guidelines for reviewing medical fitness in different medical/ailment conditions.

This will also be applicable to foreign flight crews working in Nepal.
In the Medical Requirements following terms have the meanings as defined below:

**Accredited medical conclusion.** The conclusion reached by one or more medical experts acceptable to the Licensing Authority for the purposes of the case concerned, in consultation with flight operations or other experts as necessary.

**Aeroplane:** A power-driven heavier-than-air aircraft deriving its lift in flight chiefly from aerodynamic reactions on surfaces, which remain fixed under given conditions of flight.

**Aircraft:** Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

**Balloon:** A non-power driven, lighter-than-air aircraft.

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

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.

**Civil Aviation Medical Examiner (CAME):** A physician with training in aviation medicine and practical knowledge and experience of the aviation environment, who is designated by the Licensing Authority to conduct medical examinations of fitness of applicants for licences or ratings for which medical requirements are prescribed.

**Co-pilot:** 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:** A person assigned by an operator to duty on an aircraft during flight time.

**Decrease in Medical Fitness:** It is a state or period when there is diminished medical fitness that may be attributable to illness, injuries, drugs or physical, physiological or mental stresses or finding outside the prescribed normal ranges, which lasts usually for certain period of time and is of temporary nature.

**Flight Crew:** A licenced crew charged with duties essential to the operation of an aircraft during flight duty period.
**Flight crew member.** A licensed crew member charged with duties essential to the operation of an aircraft during flight time.

**Flight duty period.** The total time from the moment a flight crew member commences duty, immediately subsequent to a rest period and prior to making a flight or a series of flights, to the moment he is relieved of all duties having completed such flight or series of flights.

**Flight Time:** The total time from the moment an aircraft first moves for the purpose of taking off until the moment it comes to rest at the end of flight.

**Flight time — aeroplanes.** The total time from the moment an aeroplane first moves for the purpose of taking off until the moment it finally comes to rest at the end of the flight.

Note. — Flight time as here defined is synonymous with the term “block to block” time or “chock to chock” time in general usage which is measured from the time an aeroplane first moves for the purpose of taking off until it finally stops at the end of the flight.

**Flight time — helicopters.** The total time from the moment a helicopter’s rotor blades start turning until the moment the helicopter finally comes to rest at the end of the flight, and the rotor blades are stopped.

**General aviation.** All civil aviation operations other than scheduled air services and non-scheduled air transport operations for remuneration or hire.

**Glider:** A non-power driven, heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reaction on surfaces which remain fixed under given conditions of flight.

**Helicopter:** A heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes.

**Human Performance :** Human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.

**Licencing and Examination Division (LED):** The unit responsible for issuing the licence to flight crew and air traffic controller.

**Licensing Authority.** The Director General of Civil Aviation Authority of Nepal is responsible for the licensing of personnel.

**Likely.** In the context of the medical provisions, **likely** means with a probability of occurring that is unacceptable to the Medical Assessor.

**Medical Assessment.** The evidence issued by a Contracting State that the licence holder meets specific requirements of medical fitness.
Medical Condition: Medical finding, physical or numerical, outside the normal range or standards of medical requirements.

Medical Flight Test: Actual flight test done to help assess the applicant's ability to perform under normal as well as adverse flight conditions if there is suspicion or overt manifestation of decreased physical ability or functional limitation.

Pilot-in-command. The pilot responsible for the operation and safety of the aircraft during flight time.

Psychoactive Substances: Alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded.

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.

Rated air traffic controller. An air traffic controller holding a licence and valid ratings appropriate to the privileges exercised by him.

Rating. An authorization entered on or associated with a licence and forming part thereof, stating special conditions, privileges or limitations pertaining to such licence.

Rest period. Any period of time on the ground during which a flight crew member is relieved of all duties by the operator.

Safety-sensitive personnel. 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.

Significant. In the context of the medical provisions in Chapter 6, significant means to a degree or of a nature that is likely to jeopardize flight safety.

Safety Management System: A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

State Safety Programme: An integrated set of regulations and activities aimed at improving safety.
### ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATC</td>
<td>Air Traffic Controller</td>
</tr>
<tr>
<td>ATPL</td>
<td>Airline Transport Pilot Licence</td>
</tr>
<tr>
<td>CAAN</td>
<td>Civil Aviation Authority of Nepal</td>
</tr>
<tr>
<td>CAMA</td>
<td>Civil Aviation Medical Assessor</td>
</tr>
<tr>
<td>CAME</td>
<td>Civil Aviation Medical Examiner</td>
</tr>
<tr>
<td>CAR</td>
<td>Civil Aviation Regulations – 2058 (2002)</td>
</tr>
<tr>
<td>CPL</td>
<td>Commercial Pilot Licence</td>
</tr>
<tr>
<td>DG</td>
<td>Director General</td>
</tr>
<tr>
<td>Dy DG</td>
<td>Deputy Director General</td>
</tr>
<tr>
<td>FOD</td>
<td>Flight Operation Department</td>
</tr>
<tr>
<td>FOR</td>
<td>Flight Operation Requirements</td>
</tr>
<tr>
<td>COSCAP</td>
<td>Co-operative Development of Operational Safety and Continuing Airworthiness under ICAO Technical Co-operation Programme</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>LED</td>
<td>Licencing and Examination Division</td>
</tr>
<tr>
<td>PPL</td>
<td>Private Pilot Licence</td>
</tr>
</tbody>
</table>
PREFACE

One of the functions of Civil Aviation Authority of Nepal is to issue 'licence' through Licencing and Examination Division of Aviation Safety Department to Flight Crew and Air Traffic Controllers. Besides knowledge and skill, the applicant must possess proper health condition - physical and mental, and functioning special senses to perform the task. Hence 'Medical Examination and Assessment' of the applicant forms an integral component and a regulatory requirement, before the licence is issued, whether it be an initial or a renewal. He also should be free of condition or disease that may cause incapacitation jeopardizing the safety of flight while performing his duties.

MEDICAL REQUIREMENT has been prepared in complete completed cooperation with senior COSCAP aviation medicine experts as per the guideline of ICAO Annex-1 and Doc 8984. At the same time necessary conformity with ailment prevalence in Nepal has been taken into consideration and accordingly implemented. It has been essentially prepared for the Aero-Medical Examiners, Licencing and Examination Division and Civil Aviation Medical Board to provide guidelines for medical information/standards, Policies and Procedure in order to provide license requirements of Flight Crew and Air Traffic Controllers and assess their fitness in presence/absence of medical condition.

MEDICAL REQUIREMENT, consists of 3 parts:
   Part 1 : Policies and Procedures for Medical Examination and Assessment
   Part 2 : Medical Standards of Licencing Requirements
   Part 3 : Guidelines on Medical Conditions.

They are in conformity with ICAO Standards and Recommended Practices, Annex 1 to the Convention on International Civil Aviation and are duly adopted by Civil Aviation Authority of Nepal. This Requirement also incorporates Flight Operation Requirements/Personnel Licensing Requirements issued by Civil Aviation Authority of Nepal and subsequent amendment. In the preparation of this Requirements, Manual of Civil Aviation Medicine ICAO Second Edition-1985, Doc 8984-AN/895, and other Aviation Authorities Regulations and Standards practiced by leading aviation countries are also referred.

As knowledge and techniques are advancing rapidly and more and more experience is achieved, both in medicine and aviation, these medical requirements may be amended by Director General, Civil Aviation Authority of Nepal as and when appropriate.

Date : ________________________
1.1 REQUIREMENT OF MEDICAL ASSESSMENT

Flight Crew Members, Air Traffic Controllers, Aircraft Maintenance Personnel and Flight Operations Officers shall not exercise the privileges of their license/certificate unless they hold a current Medical Assessment as prescribed by the licensing authority.

MEDICAL PROVISIONS - GENERAL
- Guidance material published in the Annex 1 and Manual of Civil Aviation Medicine (doc 8984) shall be used.
- Applicants shall meet the prescribed licensing requirements of medical fitness for the issue of various types of licences/certificates as mentioned in this requirement and medical requirements.
- The licensing authority shall issue the licence holder with the appropriate medical assessment, Class 1, Class 2 or Class 3 or as prescribed for certain licences and certificates.
- The medical assessment shall be issued in the prescribed format.

The medical assessment shall be an integral part of the license/certificate (not necessarily endorsed on the licence / certificate itself).

1.2 MEDICAL FORMS AND INSTRUCTIONS

Medical related Forms consists of four leafs viz. Application and Statement Form, Medical Examination Form, Assessment Form and Medical Certificate.

Leaf 1 is Application Form and this contains information and statements of the applicant, with declaration as complete and correct and consent to release of medical information to the Civil Aviation Medical Assessor. He will sign with date. Civil Aviation Medical Examiner will sign as a witness.

Leaf 2 is Medical Examination Form and Civil Aviation Medical Examiner will record all findings of medical examination in the respective areas. He may attach other papers with examination findings from Eye specialist and ENT specialists.

Leaf 3 is called Assessment Form, where Civil Aviation Medical Assessor will record his opinion and comment scrutinizing the information and statement of the applicant and Civil Aviation Medical Examiner’s findings, opinion and comment.

Leaf 4 is the Medical Certificate where Civil Aviation Medical Assessor signs the certificate regarding his fitness. This will remain in his personal file. Instead a pocket size handy paper will be issued to the applicant.

There will be 1-page Instruction for Applicants and 3-pages instruction for Medical Examiners.

They are given in Attachments as
- Application and Statement Form A-1/6
- Medical Examination Form A-2/6
- Medical Examination Form (For Eye Specialist) A-3/6
- Medical Examination Form (For ENT Specialist) A-4/6
- Medical Assessment Form A-5/6
- Medical Certificate A-6/6
- Pocket size Medical Certificate (Sample)
- Instruction for Applicant B-1/2
- Instruction for Medical Examiners B-2/2

The forms will be in printed form. They are available from FSLD, Flight Safety Standards Department, Sinamangal, Kathmandu.
CIVIL AVIATION AUTHORITY OF NEPAL

1.3 MEDICAL HISTORY AND DECLARATION OF TRUTH

The applicant will furnish personal information and/of illness, injury, disability or history pertaining to his medical fitness in the past as asked in the Application and Statement Form (Attachment-A-1/6) and submit it to the Civil Aviation Medical Examiner at the time of medical examination. He/she is required to sign in an appropriate place in the Form. A false declaration will be investigated by Civil Aviation Medical Assessor and the findings will be reported to DG CAAN with recommendation of action. If there is possibility of safety hazards, the privilege of his/her licence rating shall be immediately suspended.

1.4 MEDICAL EXAMINATION

The medical examination consists of Physical and Mental examination, acuity of vision, colour perception and hearing tests.

Civil Aviation Medical Examiners shall examine and record the findings. He may refer the applicants to Eye specialists and ENT specialist of CAAN approved panel for their respective examinations.

Physical and mental requirements

An applicant for any class of medical assessment shall be required to be free from:

- any abnormality, congenital or acquired; or
- any active, latent, acute or chronic disability; or
- any wound, injury or sequelae from operation; or
- any effect or side-effect of any prescribed or non-prescribed therapeutic, diagnostic or preventive medication taken.

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

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

Visual acuity test requirements

The following should be adopted for tests of visual acuity:

- Visual acuity tests should be conducted in an environment with a level of illumination that corresponds to ordinary office illumination (30-60 cd/m2).
- Visual acuity should be measured by means of a series of Landolt rings or similar optotypes, placed at a distance from the applicant appropriate to the method of testing adopted.
Colour perception requirements

CAAN shall use methods of examination as will guarantee reliable testing of colour perception.

- The applicant shall be required to demonstrate the ability to perceive readily those colours the perception of which is necessary for the safe performance of duties.

- The applicant shall be tested for the ability to correctly identify a series of pseudoisochromatic plates in daylight or in artificial light of the same colour temperature such as that provided by CIE standard illuminants C or D65 as specified by the International Commission on Illumination (CIE).

- An applicant obtaining a satisfactory result as prescribed by the licensing authority shall be assessed as fit. An applicant failing to obtain a satisfactory result in such a test shall be assessed as unfit unless able to readily distinguish the colours used in air navigation and correctly identify aviation coloured lights. Applicants who fail to meet these criteria shall be assessed as unfit except for Class 2 assessment with the following restriction: valid daytime only.

- Sunglasses worn during the exercise of the privileges of the licence or rating held should be non-polarizing and of a neutral grey tint.

Hearing test requirements

CAAN shall use methods of examination as will guarantee reliable testing of hearing.

- Applicants shall be required to demonstrate a hearing performance sufficient for the safe exercise of their licence and rating privileges.

- Applicants for Class 1 medical assessments shall be tested by pure-tone audiometry at first issue of the assessment, not less than once every five years up to the age of 40 years, and thereafter not less than once every two years. Alternatively, other methods providing equivalent results may be used.

- Applicants for Class 3 medical assessments shall be tested by pure-tone audiometry at first issue of the assessment, not less than once every four years up to the age of 40 years, and thereafter not less than once every two years. Alternatively, other methods providing equivalent results may be used.

- Applicants for Class 2 medical assessments should be tested by pure-tone audiometry at first issue of the assessment and, after the age of 50 years, not less than once every two years.

- At medical examinations, other than those mentioned above, where audiometry is not performed, applicants shall be tested in a quiet room by whispered and spoken voice tests.

- The reference zero for calibration of pure-tone audiometers is that of the pertinent standards of the current edition of the audiometric test methods, published by the International Organization for Standardization (ISO).
Medical Requirements

CIVIL AVIATION AUTHORITY OF NEPAL

- For the purpose of testing hearing in accordance with the requirements, a quiet room is a room in which the intensity of the background noise is less than 35 db(a).

- For the purpose of testing hearing in accordance with the requirements, the sound level of an average conversational voice at 1 m from the point of output (lower lip of the speaker) is c. 60 db(a) and that of a whispered voice c. 45 db(a). at 2 m from the speaker, the sound level is 6 db(a) lower.

- Private pilot licence holders requiring an instrument rating shall qualify for hearing acuity of Class 1 standard.

For initial issue of licence Urine test (routine and microscopic), Blood test (Hb, ESR and Blood sugar), Chest X-ray PA view, Electrocardiogram and Audiogram are required, and then after Electrocardiogram, Audiogram and Chest X-ray are required periodically. These test requirements vary depending on Medical Assessment Class. Additional tests will be required after the fortieth birthday viz. Blood sugar, Lipid profile, Urine Routine and Microscopic examination, Echocardiogram and Exercise ECG and repeated periodically thenafter every five years in case of Class I Medical Assessment. In specific cases further examinations and tests may be required. Tests required for Medical Assessment are given in Appendix 1.

Each part will be examined by a designated Aero-Medical Examiner, viz. Physician, ENT Specialist and Eye Specialist respectively and each AME will record his findings in the respective part of the Medical Forms and give opinion as to the medical fitness of the applicant. The applicant has to confirm to the standards of medical fitness laid down in the particular class of Medical Assessment in order to pass the medical examination. If there is any finding outside the standards or any deficit or defect, numerically or otherwise, the AME will record them and give his remarks or opinion.

1.5 MEDICAL ASSESSMENT

In the Medical Assessment Form AME will only record his opinion as to the medical fitness of the applicant and sign and the applicant also sign in appropriate space.

The completed Medical Forms of the applicants forwarded by AMEs will be scrutinized by Aviation Medical Assessor that the forms are properly and completely filled in and the latter will make the final assessment on the findings and opinion of all three AMEs and write his opinion as to the fitness of the applicant as 'Medical Assessment 'passed' or 'failed' or 'deferred' with remarks as necessary and recommends to LED to issue or deny or defer the issue of licence on medical reasons accordingly.

If there is finding outside the standards or any deficit or defect, numerically or otherwise and that is unlikely to interfere with the safe exercise of the applicant's licence, the AMC may assess him as medically fit and recommend certain limitation or endorsement if deemed necessary for the sake of flight safety.
The applicant who has passed the medical assessment is considered physically and mentally fit for performing his duties and also that he will remain so for the period of validity of his license.

1.6 MEDICAL CONFIDENTIALITY

Medical confidentiality shall be respected at all times.

All medical reports and records shall be securely held with accessibility restricted to authorized personnel. When justified by operational considerations, the Medical Assessor shall determine to what extent pertinent medical information is presented to relevant officials of the Licensing Authority.

1.7 MEDICAL FITNESS

The applicant should satisfy the AMEs and AMA that he is medically fit to exercise the privilege of the license as per the medical standards for licensing. If there is any doubt in his medical fitness, further examinations or tests or opinion from the experts will be required.

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

1.8 DECREASE IN MEDICAL FITNESS

It is a state or period when there is diminished medical fitness which may be attributable to illness, injuries, drugs, or physical, physiological or mental stresses or there is finding outside the prescribed normal ranges, which lasts for certain period of time and is of temporary nature.

If the applicant is aware, or has reason to believe that, his physical or mental or sensory faculties have decreased, as a result of common ailments, or fasting or fatigue or tension or drugs, injuries, accident, operation, invasive procedures or hospitalization, etc. which could jeopardize the flight safety, he will defer his medical examination until his physical or mental or sensory faculties have fully recovered. Similarly the license holder will not utilize the privilege of his license until he has fully recovered.

Such cases should be notified by the applicant at the time of medical examination and in case of licence holder by himself or airline in writing to AMA or LED. All relevant medical papers or document must be submitted.

Decrease in medical fitness can usually be assumed to be present in the following situations:

1. After severe illness, injuries, accident, operation, invasive procedures or hospitalization,
2. Incapacitation for more than 21 days,
3. Problematic use of substances or illicit drugs,
4. Being pregnant

He/she may be required to undergo medical examination and assessment and be certified medically fit before he exercises the privilege of his license.
1.9 Borderline Medical Finding

In case of finding which is outside the prescribed normal range or undesirable or indicative of early sign of disease process, but not necessarily likely to cause incapacitation or jeopardize the flight safety, the AMA will inform the applicant or licence holder and may ask further tests +/- or opinion from experts or advise him to see his airline doctor or his doctor to take timely precautions.

1.10 Accredited Medical Opinion

If the applicant for or the holder of a license does not meet the requirement or is found to have any condition due to illness, injury or operation or sequelae there from which causes or may cause incapacitation interfering with the performance of duties, further evaluation from the specialist and additional tests may be required. Such cases may be referred to specialists or experts for their opinion by AMA. Opinion received from such special medical evaluation is called 'Accredited Medical Opinion'. If accredited medical opinion certifies him medically fit, it indicates that applicant's or holder's failure to meet any requirement, is such that exercise of the privileges of the licence is not likely to jeopardize the flight safety. And also his relevant ability, skill and experience of the applicant and operational conditions are given due consideration in such evaluation. It may be endorsed by AMA with limitation or restrictions if necessary, for the sake of flight safety.

If the applicant obtains specialist report on his own and it differs from that of CAMB, the outside specialist report will not be entertained.

1.11 Medical Flight Test

In some case or where there is suspicion of overt manifestation of decreased physical ability or functional limitation, he may be tested in actual flight to see if he can operate the aircraft without compromising the flight safety during routine and emergencies. This will be done under the supervision of an instructor pilot, and preferably with AMA and can also be combined with pilot proficiency check.

1.12 Flexibility Clause

If the applicant has deficit or defect, numerical or otherwise, that may cause a degree of functional incapacity, AMA can recommend for renewal of license, with the evidence that the applicant has already acquired and demonstrated ability, skill and experience which could compensate for the failure to meet the prescribed medical standard. Besides it is believed not to produce any hazard either of incapacity or of inability to perform his duty safely. However this provision may be applied with endorsements e.g. operational limitation or restriction, assistance like glasses, additional tests in medical examination, frequent medical examination, etc. It will be done usually on 'accredited medical opinion'. This is popularly called as 'waiver' and assessed as 'fit' under 'flexibility clause' only after careful consideration of all aspects of the individual case.
1.13 MEDICALLY UNFIT OR DEFERRED MEDICAL ASSESSMENT

If the applicant for the licence, whether it be initial or renewal, does not clearly meet the medical requirements or is found to have any condition due to illness, injury or operation or sequelae there from or influence of psycho-active substances or problematic use of substances or drugs, which causes or may cause incapacitation interfering with the performance of duties safely, he will not pass the medical assessment. He will be certified medically unfit. However, in case of doubt, medical assessment is deferred until further evaluation is done and thenafter only final certification is made whether medically fit or unfit.

1.14 SUSPENSION OF LICENCE ON MEDICAL REASON

In case of licence holder on receiving notice in writing or through reliable source that he does not meet the medical requirement or is found to have any condition due to illness, injury or operation or sequelae there from or influence of psycho-active substances or problematic use of substances or drugs, which causes or may cause incapacitation interfering with the safe performance of duties, his licence may be suspended, until full medical examination and assessment is done later at pre-specified time or after he fully recovers. At that time he must submit complete medical report with diagnosis, treatment and progress from the treating doctor. If it is going to take long time, they must submit the medical report periodically, usually not later than six months, so as to maintain their record and continuity. This period of observation is usually two years at the maximum, after which the will be treated as for initial issue of licence.

1.15 PROVISION OF APPEAL

If the licence is denied or suspended or deferred on medical ground and the applicant for or holder of license is not satisfied, he has the right of appeal to Director General, CAAN within the period of 45 days. The DG in turn may get second opinion.

1.16 EXPIRED LICENCE DUE TO MEDICAL REASON

The flight crew or air traffic controller whose licence has expired due to medical reason will have to undergo medical examination and assessment and be assessed medically fit for the reissue of the licence. During the medical examination he should submit full medical report of the treating physician with all the investigations and treatment and report that he has fully recovered from the medical condition. If he has missed two consecutive medical examinations from the validity period of license, his medical examination will be as in the initial issue of licence and other tests may be required.
1.17 VALIDATION OF FOREIGN LICENCE

Validation of foreign licences will be done by LED of CAAN if the licence holder can provide the evidence that he has complied with equivalent requirements including medical assessment in the State of the issue of the licence.

Nevertheless medical examination and assessment may be required to foreign licence holder to ascertain his medical fitness and to comply with medical requirements of CAAN, the licence holder shall not refuse to undergo such examination.

1.18 DISPENSATION OF MEDICAL EXAMINATION AND ASSESSMENT

If the licence holder is in such a region where medical examination is not possible, LED can extend the validity period to a period of 3 months in case of CPL, ATPL and Flight Engineer and other flight crew for commercial purpose and 6 months in case of PPL. This will be considered in exceptional circumstances for one time only. But in such case he should forward to LED a medical certificate from a local registered practitioner declaring his medical fitness in accordance with the Medical Requirements, if possible.

1.19 EXCEEDING CUMULATIVE FLIGHT HOURS LIMITATION

The privilege of the licence will automatically cease the moment the crew crosses the cumulative flight hours limitation as laid down in FOR. However on special circumstances it maybe waived only if the there is a written application and LED is convinced and medical examination by AMA is satisfied and certifies him medically fit. He will specifically insures that there is no symptoms and signs of fatigue. This will be in exceptional situation and for the shortest possible period only.

1.20 FEE

The fees and expenditure for medical examination and tests and evaluation by specialist or experts (accredited medical opinion), medical flight tests and second opinion after appeal, will be borne by the applicant or his concerned institution.

1.21 CIVIL AVIATION MEDICAL EXAMINER (CAME)

Civil Aviation Authority of Nepal will call applicants through general public notice and from them appropriate applicants will be selected and designated as Civil Aviation Medical Examiners.

Pre-requisites for Civil Aviation Medical Examiner shall be as follows:

- Medical graduate registered in Nepal Medical Council
- Post-graduate MD or equivalent in Medicine or its clinical branch (Neurology, Cardiology, Pulmonology, Gastroenterology, Nephrology, Endocrinology, or like) and experience of at least two years in that specialty.
- Basic training in Aviation Medicine of 60 hours or equivalent training.

Applicants claiming attending Seminars or Workshops or Classes in Aviation Medicine will not be accepted.
CIVIL AVIATION AUTHORITY OF NEPAL

Other requirement is that his clinic or hospital should be in the Kathmandu valley and Civil Aviation Medical Assessor and a member from Flight Safety Standards Department shall inspect the clinic or hospital before designating him as Civil Aviation Medical Examiner.

His job is to examine the Flight Crew and Air Traffic Controllers in accordance with policies and procedures and medical standards given in Medical Requirements, CAAN and ICAO Annex 1. He will make full medical examination, fill in the Medical Form and give his opinion as to fitness and comments if necessary. He must check the applicant’s statement and will give due importance to the information given by the applicant regarding the possibility of incapacitation. Regarding Eye, Acuity of Vision and Ear, nose, throat and hearing he will refer to the respective specialist who had attended seminar/workshop in Aviation Medicine. They will be panel members in their specialty approved by CAAN. If he has any doubt in any other area he will refer him to a specialist for examination and opinion.

The number of Civil Aviation Medical Examiners will be determined by CAAN. Aviation Safety Standards Department, CAAN shall organize at least one half-day refresher course in aviation medicine once in two years and all Civil Aviation Medical Examiners and CAAN approved panel medical examiners must attend the course. Civil Aviation Medical Examiners shall provide satisfactory service and maintain professional competency. If their service and/or competency is found unsatisfactory, action will be taken such as warning, suspending and even terminating the tenure.

1.22 CIVIL AVIATION MEDICAL ASSESSOR (CAMA)

Civil Aviation Authority of Nepal will appoint a Civil Aviation Medical Assessor in part-time or full time basis.

Pre-requisites for Civil Aviation Medical Assessor shall be as follows:

- Medical graduate registered in Nepal Medical Council
- Post-graduate MD or equivalent in Medicine or its clinical branch (Neurology, Cardiology, Pulmonology, Gastroenterology, Nephrology, Endocrinology, or like) and experience of at least two years in that specialty.
- Diploma in Aviation Medicine of 120 hours or 30 days of training in Aviation Medicine inclusive of practical work, and visits to Aeromedical centres, ATC working environments, airport facilities and flight deck experience.
- Experience of working as Medical Examiner and Medical Assessor of flight crew will be preferred.

He will also act as a Civil Aviation Medical Examiner and examine flight crew and ATCs.

Civil Aviation Medical Assessor will study and evaluate the medical reports of CAME i.e. Application and Statement Form and Medical Examination Forms, make assessment and issue the Medical Certificate. He deals with safety related information from Application and Statement Form and on medical examination findings and
CIVIL AVIATION AUTHORITY OF NEPAL

opinion of CAME. He will also inform the applicant of presence of risk factors or early warning signs of disease which do not clearly fall outside the prescribed standards, for timely remedial measures.

Function of the Civil Aviation Medical Assessor is to give decision on medical status of the applicant or license holder on finding deviation, deficit, abnormality or disease state on findings in flight crew or ATC which fall outside the standards specified in Medical Requirements, CAAN during medical examination. He can refer the flight crew or ATC to get the opinion of other specialists from outside for their expert opinion or accredited medical opinion.

The Civil Aviation Medical Assessor will be actively involved in the process of selecting CAMEs and arrange their visits in towers, cockpit and airport facilities with the help of CAAN to orient and familiarize to working environments of flight crew and ATCs. He will help Chief, Flight Safety Standards Department, CAAN to organize Refresher Classes in Aviation Medicine. CAAN will send Medical Assessor to attend International Seminars or Workshops in Aviation Medicine periodically.

Civil Aviation Medical Assessor will evaluate the service and competency of CAMEs. If CAME’s service or competency is found unsatisfactory, he can recommend to Director General, CAAN to take necessary action such as warning, suspending and even terminating the tenure.

Civil Aviation Medicine Assessor will also advise Chief, Flight Safety Standards Department and Director General, CAAN in Aviation matters related to health and safety.

1.23 *

1.24 MEDICAL ASSESSMENT CLASSES

The Medical Assessment Classes are three viz. I, II and III. The applicant has to pass respective medical assessment class and be certified medically fit and assessed as passed that particular class depending on the type of licences, as shown below:

<table>
<thead>
<tr>
<th>Medical Assessment Class</th>
<th>Type of Licenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Commercial Pilot</td>
</tr>
<tr>
<td></td>
<td>Airline Transport Pilot</td>
</tr>
<tr>
<td>II</td>
<td>Private Pilot</td>
</tr>
<tr>
<td></td>
<td>Microlight Pilot</td>
</tr>
<tr>
<td></td>
<td>Free Balloon Pilot</td>
</tr>
<tr>
<td></td>
<td>Glider Pilot</td>
</tr>
<tr>
<td></td>
<td>Ultra Light Pilot</td>
</tr>
<tr>
<td></td>
<td>Flight Engineer</td>
</tr>
<tr>
<td>III</td>
<td>Air Traffic Controller</td>
</tr>
</tbody>
</table>
1.25 VALIDITY PERIOD OF MEDICAL ASSESSMENT

The validity period of medical assessment varies with the type of licence and age of the crew. For the initial issue it begins on the day of medical assessment and ends on the last day of the preceding calendar month of the validity period.

In case of renewal of licence the medical examination and assessment is done during the last month of the validity period of the license. The validity period of the medical assessment will be for the period of remaining days of that month, plus 6 or 12 or 24 calendar months as the case may be.

1.26 MEDICAL VALIDITY

1. Period of Medical Validity And Validity of License

A medical assessment issued shall be valid from the date of the medical examination for a period not greater than:

- 60 months for the Private Pilot License – aeroplane, airship, helicopter and powered-lift;
- 12 months for the Commercial Pilot License – aeroplane, airship, helicopter, and powered-lift;
- 12 months for the Airline Transport Pilot License – aeroplane, helicopter and powered-lift;
- 60 months for the Glider Pilot License;
- 60 months for the Free Balloon Pilot License;
- 12 months for the Flight Engineer License;
- 48 months for the Air Traffic Controller License;

The periods of validity listed above may be extended by up to 45 days by the licensing authority.

The period of validity will, for the last month counted, include the day that has the same calendar number as the date of the medical examination or, if that month has no day with that number, the last day of that month.

The period of validity of a medical assessment shall be reduced when clinically indicated. Validity of licence is subject to period of medical validity.
2. REDUCTION OF MEDICAL VALIDITY WITH AGE

• When the holders of Airline Transport Pilot Licences, Commercial Pilot Licences, Multi-Crew Pilot Licences, who are engaged in commercial air transport operations, have passed their 60th birthday, the period of validity shall be reduced to six months.

• When the holders of Airline Transport Pilot Licenses and Commercial Pilot Licenses — aeroplane, helicopter, powered-lift and airship, who are engaged in single-crew commercial air transport operations carrying passengers, have passed their 40th birthday, the period of validity shall be reduced to six months.

• When the holders of Private Pilot Licenses — aeroplane, helicopter, powered-lift, airship, Glider Pilot License, Free Balloon Pilot License, and Air Traffic Controller License have passed their 40th birthday, the period of validity shall be reduced to 24 months.

• When the holders of Private Pilot Licenses — aeroplane, helicopter, powered-lift, airship, Glider Pilot Licenses, Free Balloon Pilot Licenses, and Air Traffic Controller Licenses have passed their 50th birthday, the period of validity shall be further reduced to 12 months. (the periods of validity listed above are based on the age of the applicant at the time of undergoing the medical examination)

3. THE 60-65 YEARS RULE

• Holder of a pilot licence shall not act as pilot-in-command or as a co-pilot of an aircraft engaged in commercial air transport operations if the licence holder has attained the 60th birthday or, in the case of operations with more than one pilot where the other pilot is younger than 60 years of age, their 65th birthday.

• Prescribed medical and licensing restrictions shall apply.
1.27 AGE

The minimum ages for various licenses are given below:

<table>
<thead>
<tr>
<th>License</th>
<th>Age Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Pilot</td>
<td>Not less than 17 years of age</td>
</tr>
<tr>
<td>Commercial Pilot</td>
<td>Not less than 18 years of age</td>
</tr>
<tr>
<td>Airline Transport Pilot</td>
<td>Not less than 21 years of age</td>
</tr>
<tr>
<td>Microlight Pilot</td>
<td>Not less than 16 years of age</td>
</tr>
<tr>
<td>Free Balloon Pilot</td>
<td>Not less than 16 years of age</td>
</tr>
<tr>
<td>Glider Pilot</td>
<td>Not less than 16 years of age</td>
</tr>
<tr>
<td>Flight Engineer</td>
<td>Not less than 18 years of age</td>
</tr>
<tr>
<td>Air Traffic Controller</td>
<td>Not less than 21 years of age</td>
</tr>
</tbody>
</table>

1.28 HEIGHT

As a rule, no height will bar the applicant from obtaining the licence. However in extremes of height actual test in the cockpit regarding accessibility and maneuverability of controls and instruments with seat adjustments will be tested before assessing him 'fit'.

1.29 WEIGHT

As a rule, no weight will bar the applicant from obtaining the licence. However those with excessive weight or obese i.e. Body Mass Index \[\text{BMI} = \frac{\text{weight (kg)}}{\text{height (m)}^2}\] > 30, will be discouraged to take up the flying profession especially if he has family history of diabetes, coronary artery disease or hypertension. However in grossly obese (BMI > 40) cases actual test in the cockpit regarding accessibility and maneuverability of controls and instruments with seat adjustments will be tested before assessing him 'fit'.

Medical Requirements
Issue Date : April, 2009
<table>
<thead>
<tr>
<th>Class 1 Medical Assessment</th>
<th>Class 2 Medical Assessment</th>
<th>Class 3 Medical Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Assessment issue and renewal</td>
<td>2.1 Assessment issue and renewal</td>
<td>3.1 Assessment issue and renewal</td>
</tr>
<tr>
<td>1.1.1 An applicant for a commercial pilot licence — aeroplane, airship, helicopter or powered-lift, a multi-crew pilot licence — aeroplane, or an airline transport pilot licence — aeroplane, helicopter or powered-lift will undergo an initial medical examination for the issue of a Class 1 Medical Assessment. 1.1.1.2 Except where otherwise stated in this section, holders of commercial pilot licences — aeroplane, airship, helicopter or powered-lift, multi-crew pilot licences — aeroplane, or airline transport pilot licences — aeroplane, helicopter or powered-lift will have their Class 1 Medical Assessments renewed at intervals not exceeding those specified in 1.26.</td>
<td>2.1.1 An applicant for a private pilot licence — aeroplane, airship, helicopter or powered-lift, a glider pilot licence, a free balloon pilot licence, a flight engineer licence or a flight navigator licence will undergo an initial medical examination for the issue of a Class 2 Medical Assessment. 2.1.1.2 Except where otherwise stated in this section, holders of private pilot licences — aeroplane, airship, helicopter or powered-lift, glider pilot licences, free balloon pilot licences, flight engineer licences or flight navigator licences will have their Class 2 Medical Assessments renewed at intervals not exceeding those specified in 1.26.</td>
<td>3.1.1 An applicant for an air traffic controller licence will undergo an initial medical examination for the issue of a Class 3 Medical Assessment. 3.1.1.2 Except where otherwise stated in this section, holders of air traffic controller licences will have their Class 3 Medical Assessments renewed at intervals not exceeding those specified in 1.26.</td>
</tr>
<tr>
<td>1.1.1.3 When the medical assessor is satisfied that the requirements of this section and the general provisions of 1.4 and 1.24 have been met, a Class 1 Medical Assessment may be issued to the applicant.</td>
<td>2.1.1.3 When the medical assessor is satisfied that the requirements of this section and the general provisions of 1.4 and 1.24 have been met, a Class 2 Medical Assessment may be issued to the applicant.</td>
<td>3.1.1.3 When the medical assessor is satisfied that the requirements of this section and the general provisions of 1.4 and 1.24 have been met, a Class 3 Medical Assessment may be issued to the applicant.</td>
</tr>
<tr>
<td>Medical Requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>General</strong> 1.2.1</td>
<td>The applicant will not suffer from any disease or disability which could render that applicant likely to become suddenly unable either to operate an aircraft safely or to perform assigned duties safely.</td>
<td></td>
</tr>
</tbody>
</table>
| **Mental health and behavioural** 1.1 | The applicant will have no established medical history or clinical diagnosis of:  
  a) an organic mental disorder;  
b) a mental or behavioural disorder due to use of psychoactive substances; this includes dependence syndrome induced by alcohol or other psychoactive substances;  
c) schizophrenia or a schizotypal or delusional disorder;  
d) a mood (affective) disorder;  
e) a neurotic, stress-related or somatoform disorder;  
f) a behavioural syndrome associated with physiological disturbances or physical factors;  
g) a disorder of adult personality or behaviour, particularly if manifested by repeated overt acts; |
| **General** 2.2.1 | The applicant will not suffer from any disease or disability which could render that applicant likely to become suddenly unable either to operate an aircraft safely or to perform assigned duties safely. |
| **Mental health and behavioural** 2.1 | The applicant will have no established medical history or clinical diagnosis of:  
  a) an organic mental disorder;  
b) a mental or behavioural disorder due to psychoactive substance use; this includes dependence syndrome induced by alcohol or other psychoactive substances;  
c) schizophrenia or a schizotypal or delusional disorder;  
d) a mood (affective) disorder;  
e) a neurotic, stress-related or somatoform disorder;  
f) a behavioural syndrome associated with physiological disturbances or physical factors;  
g) a disorder of adult personality or behaviour, particularly if manifested by repeated overt acts; |
| **General** 3.2.1 | The applicant will not suffer from any disease or disability which could render that applicant likely to become suddenly unable to perform duties safely. |
| **Mental health and behavioural** 3.1 | The applicant will have no established medical history or clinical diagnosis of:  
  a) an organic mental disorder;  
b) a mental or behavioural disorder due to psychoactive substance use; this includes dependence syndrome induced by alcohol or other psychoactive substances;  
c) schizophrenia or a schizotypal or delusional disorder;  
d) a mood (affective) disorder;  
e) a neurotic, stress-related or somatoform disorder;  
f) a behavioural syndrome associated with physiological disturbances or physical factors;  
g) a disorder of adult personality or behaviour, particularly if manifested by repeated overt acts; |
h) mental retardation;
i) a disorder of psychological development;
j) a behavioural or emotional disorder, with onset in childhood or adolescence; or
k) a mental disorder not otherwise specified;

such as might render the applicant unable to safely exercise the privileges of the licence applied for or held.

An applicant with depression, being treated with antidepressant medication, will be assessed as unfit unless the medical assessor, having access to the details of the case concerned, considers the applicant’s condition as unlikely to interfere with the safe exercise of the applicant’s licence and rating privileges.

Note 1.— Guidance on assessment of applicants treated with antidepressant medication is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

Note 2.— Mental and behavioural disorders are defined in accordance with the clinical descriptions and diagnostic guidelines of the World Health Organization as given in the International Statistical Classification of Diseases and Related Health Problems, 10th Edition — Classification of Mental and Behavioural Disorders, WHO 1992. This document contains detailed descriptions of the diagnostic requirements, which may be useful for their application to medical assessment.

3.2 An applicant with depression, being treated with antidepressant medication, will be assessed as unfit unless the medical assessor, having access to the details of the case concerned, considers the applicant’s condition as unlikely to interfere with the safe exercise of the applicant’s licence and rating privileges.

Note 1.— Guidance on assessment of applicants treated with antidepressant medication is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

Note 2.— Mental and behavioural disorders are defined in accordance with the clinical descriptions and diagnostic guidelines of the World Health Organization as given in the International Statistical Classification of Diseases and Related Health Problems, 10th Edition — Classification of Mental and Behavioural Disorders, WHO 1992. This document contains detailed descriptions of the diagnostic requirements, which may be useful for their application to medical assessment.
Mental and Behavioural Disorders, WHO 1992. This document contains detailed descriptions of the diagnostic requirements, which may be useful for their application to medical assessment.

<table>
<thead>
<tr>
<th>Neurological</th>
<th>Neurological</th>
<th>Neurological</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 The applicant will have no established medical history or clinical diagnosis of any of the following: a) a progressive or non-progressive disease of the nervous system, the effects of which are likely to interfere with the safe exercise of the applicant’s licence and rating privileges; b) epilepsy; c) any disturbance of consciousness without satisfactory medical explanation of cause. 1.2.1 The applicant will not have suffered any head injury, the effects of which are likely to interfere with the safe exercise of the applicant’s licence and rating privileges.</td>
<td>2.2 The applicant will have no established medical history or clinical diagnosis of any of the following: a) a progressive or non-progressive disease of the nervous system, the effects of which are likely to interfere with the safe exercise of the applicant’s licence and rating privileges; b) epilepsy; c) any disturbance of consciousness without satisfactory medical explanation of cause. 2.2.1 The applicant will not have suffered any head injury, the effects of which are likely to interfere with the safe exercise of the applicant’s licence and rating privileges.</td>
<td>3.2 The applicant will have no established medical history or clinical diagnosis of any of the following: a) a progressive or non-progressive disease of the nervous system, the effects of which are likely to interfere with the safe exercise of the applicant’s licence and rating privileges; b) epilepsy; c) any disturbance of consciousness without satisfactory medical explanation of cause. 3.2.1 The applicant will not have suffered any head injury, the effects of which are likely to interfere with the safe exercise of the applicant’s licence and rating privileges.</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>Cardiovascular</td>
<td>Cardiovascular</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
</tbody>
</table>
| 1.3 The applicant will not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe exercise of the applicant’s licence and rating privileges.  
  a) An applicant who has undergone coronary bypass grafting or angioplasty (with or without stenting) or other cardiac intervention or who has a history of myocardial infarction or who suffers from any other potentially incapacitating cardiac condition will be assessed as unfit unless the applicant’s cardiac condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant’s licence or rating privileges.  
  b) An applicant with an abnormal cardiac rhythm will be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant’s licence or rating privileges.  
  c) Electrocardiography will form part of the heart examination for the first issue of a Medical Assessment. | 2.3 The applicant will not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe exercise of the applicant’s licence and rating privileges.  
  a) An applicant who has undergone coronary bypass grafting or angioplasty (with or without stenting) or other cardiac intervention or who has a history of myocardial infarction or who suffers from any other potentially incapacitating cardiac condition will be assessed as unfit unless the applicant’s cardiac condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant’s licence or rating privileges.  
  b) An applicant with an abnormal cardiac rhythm will be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant’s licence or rating privileges.  
  c) Electrocardiography will form part of the heart examination for the first issue of a Medical Assessment. | 3.3 The applicant will not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe exercise of the applicant’s licence and rating privileges.  
  a) An applicant who has undergone coronary bypass grafting or angioplasty (with or without stenting) or other cardiac intervention or who has a history of myocardial infarction or who suffers from any other potentially incapacitating cardiac condition will be assessed as unfit unless the applicant’s cardiac condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant’s licence and rating privileges.  
  b) An applicant with an abnormal cardiac rhythm will be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant’s licence and rating privileges.  
  c) Electrocardiography will form part of the heart examination for the first issue of a Medical Assessment. |

**Note.** — Guidance on cardiovascular evaluation is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).  
**Note.** — Guidance on cardiovascular evaluation is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).  
**Note.** — Guidance on cardiovascular evaluation is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).
Medical Requirements
Issue Date: April, 2009

CIVIL AVIATION AUTHORITY OF NEPAL

- included in re-examinations of applicants between the ages of 30 and 40 no less frequently than every two years.
- d) Electrocardiography will be included in re-examinations of applicants over the age of 40 no less frequently than annually.

Note 1.— The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence, in isolation, to justify an ‘unfit’ medical assessment. The results of further cardiovascular examination and / or investigation should be considered before any Medical Assessment decision is based on an abnormal routine electrocardiography result.

Note 2. — Guidance on resting and exercise electrocardiography is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

- e) The systolic and diastolic blood pressures will be within normal limits.

The use of drugs for control of high blood pressure will be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant’s licence and rating privileges.

Note. — Guidance on this subject is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

- f) There will be no significant functional or structural abnormality of the circulatory system.

The use of drugs for control of high blood pressure will be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant’s licence and rating privileges.

Note. — Guidance on the subject is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

- e) There will be no significant functional or structural abnormality of the circulatory system.

- included in re-examinations of applicants after the age of 40 no less than every two years.
- d) Electrocardiography will form part of the heart examination for the first issue of a Medical Assessment after the age of 40.

Note 1.— The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence, in isolation, to justify an ‘unfit’ medical assessment. The results of further cardiovascular examination and / or investigation should be considered before any Medical Assessment decision is based on an abnormal routine electrocardiography result.

Note 2.— Guidance on resting and exercise electrocardiography is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

- d) The systolic and diastolic blood pressures will be within normal limits.

The use of drugs for control of high blood pressure is disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant’s licence privileges.

Note. — Guidance on this subject is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

- e) There will be no significant functional or structural abnormality of the circulatory system.
### Respiratory

1.4 There will be no acute disability of the lungs or any active disease of the structures of the lungs, mediastinum or pleurae likely to result in incapacitating symptoms during normal or emergency operations.

- **a)** Chest radiography will form part of the initial examination.
- **b)** Chest radiography will form part of examinations, other than the initial examination, when asymptomatic pulmonary disease can be expected.

1.4.1 Applicants with chronic obstructive pulmonary disease will be assessed as unfit unless the applicant’s condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant’s licence or rating privileges.

1.4.2 Applicants with asthma causing significant symptoms or likely to cause incapacitating symptoms during normal or emergency operations will be assessed as unfit.

The use of drugs for control of asthma will be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant’s licence and rating privileges.

Note.— Guidance on hazards of medication and drugs is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

1.4.3 Applicants with active pulmonary

### Respiratory

2.4 There will be no disability of the lungs or any active disease of the structures of the lungs, mediastinum or pleura likely to result in incapacitating symptoms during normal or emergency operations.

- **a)** Chest radiography will form part of the initial examination, and other examinations, when asymptomatic pulmonary disease can be expected.

2.4.1 Applicants with chronic obstructive pulmonary disease will be assessed as unfit unless the applicant’s condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant’s licence or rating privileges.

2.4.2 Applicants with asthma causing significant symptoms or likely to cause incapacitating symptoms during normal or emergency operations will be assessed as unfit.

The use of drugs for control of asthma will be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant’s licence and rating privileges.

Note.— Guidance on hazards of medication and drugs is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

2.4.3 Applicants with active pulmonary

### Respiratory

3.4 There will be no disability of the lungs or any active disease of the structures of the lungs, mediastinum or pleura likely to result in incapacitating symptoms.

- **a)** Chest radiography will form part of the initial examination.
- **b)** Chest radiography will form part of examinations, other than the initial examination, when asymptomatic pulmonary disease can be expected.

3.4.1 Applicants with chronic obstructive pulmonary disease will be assessed as unfit unless the applicant’s condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant’s licence or rating privileges.

3.4.2 Applicants with asthma causing significant symptoms or likely to cause incapacitating symptoms will be assessed as unfit.

The use of drugs for control of asthma will be disqualifying except for those drugs, the use of which is compatible with the safe exercise of the applicant’s licence and rating privileges.

Note.— Guidance on hazards of medications is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).
tuberculosis will be assessed as unfit.

Applicants with quiescent or healed lesions which are known to be tuberculous, or are presumably tuberculous in origin, may be assessed as fit.

Note 1.— Guidance on assessment of respiratory diseases is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).
Note 2.— Guidance on hazards of medications and drugs is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).
### Gastrointestinal

1.5 Applicants with significant impairment of function of the gastrointestinal tract or its adnexa will be assessed as unfit.

1.5.1 Applicants will be completely free from those hernias that might give rise to incapacitating symptoms.

1.5.2 Applicants with sequelae of disease of, or surgical intervention on, any part of the digestive tract or its adnexa, likely to cause incapacitation in flight, in particular any obstruction due to stricture or compression, will be assessed as unfit.

1.5.2.1 An applicant who has undergone a major surgical operation on the biliary passages or the digestive tract or its adnexa with a total or partial excision or a diversion of any of these organs should be assessed as unfit until such time as the medical assessor, having access to the details of the operation concerned, considers that the effects of the operation are not likely to cause incapacitation in flight.

2.5 Applicants with significant impairment of the function of the gastrointestinal tract or its adnexa will be assessed as unfit.

2.5.1 Applicants will be completely free from those hernias that might give rise to incapacitating symptoms.

2.5.2 Applicants with sequelae of disease of or surgical intervention on any part of the digestive tract or its adnexa, likely to cause incapacitation in flight, in particular any obstruction due to stricture or compression, will be assessed as unfit.

2.5.2.1 An applicant who has undergone a major surgical operation on the biliary passages or the digestive tract or its adnexa with a total or partial excision or a diversion of any of these organs should be assessed as unfit until such time as the medical assessor, having access to the details of the operation concerned, considers that the effects of the operation are not likely to cause incapacitation in flight.

3.5 Applicants with significant impairment of the function of the gastrointestinal tract or its adnexa will be assessed as unfit.

3.5.1 Applicants with sequelae of disease of or surgical intervention on any part of the digestive tract or its adnexa, likely to cause incapacitation, in particular any obstructions due to stricture or compression, will be assessed as unfit.

3.5.1.1 An applicant who has undergone a major surgical operation on the biliary passages or the digestive tract or its adnexa, with a total or partial excision or a diversion of any of these organs should be assessed as unfit until such time as the medical assessor, having access to the details of the operation concerned, considers that the effects of the operation are not likely to cause incapacitation.
CIVIL AVIATION AUTHORITY OF NEPAL

**Metabolic, nutritional, and endocrine**

1.6 Applicants with metabolic, nutritional or endocrine disorders that are likely to interfere with the safe exercise of their licence and rating privileges will be assessed as unfit.

1.6.1 Applicants with insulin-treated diabetes mellitus will be assessed as unfit.

Note. — Guidance on assessment of insulin treated diabetic applicants under the provisions of 1.2.4.8 is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

1.6.1.1 Applicants with non-insulin-treated diabetes mellitus will be assessed as unfit unless the condition is shown to be satisfactorily controlled by diet alone or by diet combined with oral anti-diabetic medication, the use of which is compatible with the safe exercise of the applicant’s licence and rating privileges.


**Blood and lymphatic**

1.7 Applicants with diseases of the blood and/or the lymphatic system will be assessed

**Metabolic, nutritional, and endocrine**

2.6 Applicants with metabolic, nutritional or endocrine disorders that are likely to interfere with the safe exercise of their licence and rating privileges will be assessed as unfit.

2.6.1 Applicants with insulin-treated diabetes mellitus will be assessed as unfit.

Note. — Guidance on assessment of insulin treated diabetic applicants under the provisions of 1.2.4.8 is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

2.6.2.1 Applicants with non-insulin-treated diabetes mellitus will be assessed as unfit unless the condition is shown to be satisfactorily controlled by diet alone or by diet combined with oral anti-diabetic medication, the use of which is compatible with the safe exercise of the applicant’s licence and rating privileges.


**Blood and lymphatic**

2.7 Applicants with diseases of the blood and/or the lymphatic system will be assessed

**Metabolic, nutritional, and endocrine**

3.6 Applicants with metabolic, nutritional or endocrine disorders that are likely to interfere with the safe exercise of their licence and rating privileges will be assessed as unfit.

3.6.1 Applicants with insulin-treated diabetes mellitus will be assessed as unfit.

Note. — Guidance on assessment of insulin treated diabetic applicants under the provisions of 1.2.4.8 is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

3.6.1.1 Applicants with non-insulin-treated diabetes mellitus will be assessed as unfit unless the condition is shown to be satisfactorily controlled by diet alone or by diet combined with oral anti-diabetic medication, the use of which is compatible with the safe exercise of the applicant’s licence and rating privileges.

<table>
<thead>
<tr>
<th>CIVIL AVIATION AUTHORITY OF NEPAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges. Note. — Sickle cell trait or other haemoglobinopathic traits are usually compatible with a fit assessment.</td>
</tr>
<tr>
<td>as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges. Note. — Sickle cell trait and other haemoglobinopathic traits are usually compatible with a fit assessment.</td>
</tr>
<tr>
<td>as unfit, unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges. Note. — Sickle cell trait and other haemoglobinopathic traits are usually compatible with a fit assessment.</td>
</tr>
</tbody>
</table>
Renal and genito-urinary

1.8 Applicants with renal or genito-urinary disease will be assessed as unfit, unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

1.8.1 Urine examination will form part of the medical examination and abnormalities will be adequately investigated.

Note. — Guidance on urine examination and evaluation of abnormalities is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

1.8.2 Applicants with sequelae of disease of or surgical procedures on the kidneys or the genito-urinary tract, in particular obstructions due to stricture or compression, will be assessed as unfit unless the applicant’s condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant’s licence or rating privileges.

1.8.2.1 Applicants who have undergone nephrectomy will be assessed as unfit unless the condition is well compensated.

Renal and genito-urinary

2.8 Applicants with renal or genito-urinary disease will be assessed as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

2.8.1 Urine examination will form part of the medical examination and abnormalities will be adequately investigated.

Note. — Guidance on urine examination and evaluation of abnormalities is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

2.8.2 Applicants with sequelae of disease of, or surgical procedures on, the kidneys or the genito-urinary tract, in particular obstructions due to stricture or compression, will be assessed as unfit unless the applicant’s condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant’s licence or rating privileges.

2.8.2.1 Applicants who have undergone nephrectomy will be assessed as unfit unless the condition is well compensated.

Renal and genito-urinary

3.8 Applicants with renal or genito-urinary disease will be assessed as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

3.8.1 Urine examination will form part of the medical examination and abnormalities will be adequately investigated.

Note. — Guidance on urine examination and evaluation of abnormalities is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

3.8.2 Applicants with sequelae of disease of, or surgical procedures on the kidneys or the genito-urinary tract, in particular obstructions due to stricture or compression, will be assessed as unfit unless the applicant’s condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant’s licence or rating privileges.

3.8.2.1 Applicants who have undergone nephrectomy will be assessed as unfit unless the condition is well compensated.
### Human Immunodeficiency Virus

1.9 Applicants who are seropositive for human immunodeficiency virus (HIV) shall be assessed as unfit unless the applicant’s condition has been investigated and evaluated in accordance with best medical practice and is assessed as not likely to interfere with the safe exercise of the applicant’s licence or rating privileges.

**Note 1.** Early diagnosis and active management of HIV disease with antiretroviral therapy reduces morbidity and improves prognosis and thus increases the likelihood of a fit assessment.

**Note 2.** Guidance on the assessment of applicants who are seropositive for human immunodeficiency virus (HIV) is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

### Reproductive

1.10 Applicants with reproductive system disorders that are likely to interfere with the safe exercise of their licence and rating privileges will be assessed as unfit.

1.10.1 Applicants who are pregnant will be assessed as unfit unless obstetrical evaluation and continued medical supervision indicate a low-risk uncomplicated pregnancy.

1.10.1.1 For applicants with a low-risk uncomplicated pregnancy, evaluated and supervised in accordance with 1.10.1 the fit assessment should be limited to the period from the end of the 12th week until the end of the 26th week of gestation.

2.10 Applicants with reproductive system disorders that are likely to interfere with the safe exercise of their licence and rating privileges will be assessed as unfit.

2.10.1 Applicants who are pregnant will be assessed as unfit unless obstetrical evaluation and continued medical supervision indicate a low-risk uncomplicated pregnancy.

2.10.1.1 For applicants with a low-risk uncomplicated pregnancy, evaluated and supervised in accordance with 2.10.1 the fit assessment should be limited to the period from the end of the 12th week until the end of the 26th week of gestation.

### Reproductive

3.10 Applicants with reproductive system disorders that are likely to interfere with the safe exercise of their licence and rating privileges will be assessed as unfit.

3.10.1 Applicants who are pregnant will be assessed as unfit unless obstetrical evaluation and continued medical supervision indicate a low-risk uncomplicated pregnancy.

3.10.1.1 During the gestational period, precautions should be taken for the timely relief of an air traffic controller in the event of early onset of labour or other complications.
## Medical Requirements

**CIVIL AVIATION AUTHORITY OF NEPAL**

| 1.10.2 Following confinement or termination of pregnancy, the applicant will not be permitted to exercise the privileges of her licence until she has undergone re-evaluation in accordance with best medical practice and it has been determined that she is able to safely exercise the privileges of her licence and ratings. | 2.10.2 Following confinement or termination of pregnancy, the applicant will not be permitted to exercise the privileges of her licence until she has undergone re-evaluation in accordance with best medical practice and it has been determined that she is able to safely exercise the privileges of her licence and ratings. | 3.10.1 For applicants with a low-risk uncomplicated pregnancy, evaluated and supervised in accordance with 3.10.1, the fit assessment should be limited to the period until the end of the 34th week of gestation. Following confinement or termination of pregnancy the applicant will not be permitted to exercise the privileges of her licence until she has undergone re-evaluation in accordance with best medical practice and it has been determined that she is able to safely exercise the privileges of her licence and ratings. |
### Musculoskeletal

1.11 The applicant will not possess any abnormality of the bones, joints, muscles, tendons or related structures which is likely to interfere with the safe exercise of the applicant’s licence and rating privileges.  
Note. — Any sequelae after lesions affecting the bones, joints, muscles or tendons, and certain anatomical defects will normally require functional assessment to determine fitness.

2.11 The applicant will not possess any abnormality of the bones, joints, muscles, tendons or related structures which is likely to interfere with the safe exercise of the applicant’s licence and rating privileges.  
Note. — Any sequelae after lesions affecting the bones, joints, muscles or tendons, and certain anatomical defects will normally require functional assessment to determine fitness.

3.11 The applicant will not possess any abnormality of the bones, joints, muscles, tendons or related structures which is likely to interfere with the safe exercise of the applicant’s licence and rating privileges.  
Note. — Any sequelae after lesions affecting the bones, joints, muscles or tendons, and certain anatomical defects will normally require functional assessment to determine fitness.

### Ear, nose, and throat

1.12 The applicant will not possess any abnormality or disease of the ear or related structures which is likely to interfere with the safe exercise of the applicant’s licence and rating privileges.  
1.12.1 There will be:  
a) no disturbance of vestibular function;  
b) no significant dysfunction of the Eustachian tubes; and  
c) no unhealed perforation of the tympanic membranes.

2.12 The applicant will not possess any abnormality or disease of the ear or related structures which is likely to interfere with the safe exercise of the applicant’s licence and rating privileges.  
2.12.1 There will be:  
a) no disturbance of the vestibular function;  
b) no significant dysfunction of the Eustachian tubes; and  
c) no unhealed perforation of the tympanic membranes.

3.12 The applicant will not possess any abnormality or disease of the ear or related structures which is likely to interfere with the safe exercise of the applicant’s licence and rating privileges.  
3.12.1 There will be:  
a) no disturbance of the vestibular function;  
b) no significant dysfunction of the Eustachian tubes; and  
c) no unhealed perforation of the tympanic membranes.

1.12.1.1A Single dry perforation of the tympanic membrane need not render the applicant unfit.  
Note.— Guidance on testing of the vestibular function is contained in ICAO Manual of Civil Aviation Medicine (Doc 8984).

2.12.1.1A Single dry perforation of the tympanic membrane need not render the applicant unfit.  
Note.— Guidance on testing of the vestibular function is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).
<table>
<thead>
<tr>
<th>CIVIL AVIATION AUTHORITY OF NEPAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) no nasal obstruction; and</td>
</tr>
<tr>
<td>b) no malformation nor any disease of the buccal cavity or upper respiratory tract which is likely to interfere with the safe exercise of the applicant’s licence and rating privileges.</td>
</tr>
<tr>
<td>1.12.3 Applicants with stuttering or other speech defects sufficiently severe to cause impairment of speech communication will be assessed as unfit.</td>
</tr>
<tr>
<td>a) no nasal obstruction; and</td>
</tr>
<tr>
<td>b) no malformation nor any disease of the buccal cavity or upper respiratory tract; which is likely to interfere with the safe exercise of the applicant’s licence and rating privileges.</td>
</tr>
<tr>
<td>2.12.3 Applicants with stuttering and other speech defects sufficiently severe to cause impairment of speech communication will be assessed as unfit.</td>
</tr>
</tbody>
</table>
### Vision

1.13 Visual requirements

The medical examination will be based on the following requirements.

1.13.1 The function of the eyes and their adnexa will be normal. There will be no active pathological condition, acute or chronic, or any sequelae of surgery or trauma of the eyes or their adnexa likely to reduce proper visual function to an extent that would interfere with the safe exercise of the applicant’s licence and rating privileges.

1.13.2 Distant visual acuity with or without correction will be 6/9 or better in each eye separately, and binocular visual acuity will be 6/6 or better. No limits apply to uncorrected visual acuity. Where this standard of visual acuity can be obtained only with correcting lenses, the applicant may be assessed as fit provided that:

a) such correcting lenses are worn during the exercise of the privileges of the licence or rating applied for or held; and

b) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant’s licence.

Note 1.— 1.13.2 b) is the subject of Standards in Annex 6, Part I.
Note 2.— An applicant accepted as meeting these provisions is deemed to continue to do so unless there is reason to suspect otherwise, in which case

### Vision

2.13 Visual requirements

The medical examination will be based on the following requirements.

2.13.1 The function of the eyes and their adnexa will be normal. There will be no active pathological condition, acute or chronic, or any sequelae of surgery or trauma of the eyes or their adnexa likely to reduce proper visual function to an extent that would interfere with the safe exercise of the applicant’s licence and rating privileges.

2.13.2 Distant visual acuity with or without correction will be 6/12 or better in each eye separately, and binocular visual acuity will be 6/9 or better. No limits apply to uncorrected visual acuity. Where this standard of visual acuity can be obtained only with correcting lenses, the applicant may be assessed as fit provided that:

a) such correcting lenses are worn during the exercise of the privileges of the licence or rating applied for or held; and

b) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant’s licence.

Note.— An applicant accepted as meeting these provisions is deemed to continue to do so unless there is reason to suspect otherwise, in which case

### Vision

3.13 Visual requirements

The medical examination will be based on the following requirements.

3.13.1 The function of the eyes and their adnexa will be normal. There will be no active pathological condition, acute or chronic, or any sequelae of surgery or trauma of the eyes or their adnexa likely to reduce proper visual function to an extent that would interfere with the safe exercise of the applicant’s licence and rating privileges.

3.13.2 Distant visual acuity with or without correction will be 6/9 or better in each eye separately, and binocular visual acuity will be 6/6 or better. No limits apply to uncorrected visual acuity. Where this standard of visual acuity can be obtained only with correcting lenses, the applicant may be assessed as fit provided that:

a) such correcting lenses are worn during the exercise of the privileges of the licence or rating applied for or held; and

b) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant’s licence.

Note.— An applicant accepted as meeting these provisions is deemed to continue to do so unless there is reason to suspect otherwise, in which case
CIVIL AVIATION AUTHORITY OF NEPAL

provisions is deemed to continue to do so unless there is reason to suspect otherwise, in which case an ophthalmic report is required at the discretion of the medical assessor. Both uncorrected and corrected visual acuity are normally measured and recorded at each re-examination. Conditions which indicate a need to obtain an ophthalmic report include: a substantial decrease in the uncorrected visual acuity, any decrease in best corrected visual acuity, and the occurrence of eye disease, eye injury or eye surgery.

1.13.2.1 Applicants may use contact lenses to meet this requirement provided that:

a) the lenses are monofocal and non-tinted;
b) the lenses are well tolerated; and
c) a pair of suitable correcting spectacles is kept readily available during the exercise of the licence privileges.

Note.— Applicants who use contact lenses may not need to have their uncorrected visual acuity measured at each re-examination provided the history of their contact lens prescription is known.

1.13.2.2 Applicants with a large refractive error will use contact lenses or high-index spectacle lenses.

Note. — If spectacles are used, high-index lenses are needed to minimize peripheral field distortion.

Applicants whose uncorrected distant visual acuity in either eye is worse than 6/60 will be required to provide a full ophthalmic report prior to initial Medical Assessment and every five years thereafter.

Note.— Applicants who use contact lenses may not need to have their uncorrected visual acuity measured at each re-examination provided the history of their contact lens prescription is known.

2.13.2.1 Applicants may use contact lenses to meet this requirement provided that:

a) the lenses are monofocal and non-tinted;
b) the lenses are well tolerated; and
c) a pair of suitable correcting spectacles is kept readily available during the exercise of the licence privileges.

Note.— Applicants who use contact lenses may not need to have their uncorrected visual acuity measured at each re-examination provided the history of their contact lens prescription is known.

2.13.2.2 Applicants with a large refractive error will use contact lenses or high-index spectacle lenses.

Note. — If spectacles are used, high-index lenses are needed to minimize peripheral field distortion.

2.13.2.3 Recommendation.— Applicants whose uncorrected distant visual acuity in either eye is worse than 6/60 should be required to provide a full ophthalmic

an ophthalmic report is required at the discretion of the medical assessor. Both uncorrected and corrected visual acuity are normally measured and recorded at each re-examination. Conditions which indicate a need to obtain an ophthalmic report include: a substantial decrease in the uncorrected visual acuity, any decrease in best corrected visual acuity, and the occurrence of eye disease, eye injury or eye surgery.

3.13.2.1 Applicants may use contact lenses to meet this requirement provided that:

a) the lenses are monofocal and non-tinted;
b) the lenses are well tolerated; and
c) a pair of suitable correcting spectacles is kept readily available during the exercise of the licence privileges.

Note.— Applicants who use contact lenses may not need to have their uncorrected visual acuity measured at each re-examination provided the history of their contact lens prescription is known.

3.13.2.2 Applicants with a large refractive error will use contact lenses or high-index spectacle lenses.

Note. — If spectacles are used, high-index lenses are needed to minimize peripheral field distortion.

3.13.2.3 Applicants whose uncorrected distant visual acuity in either eye is worse than 6/60 will be required to provide a full ophthalmic report prior to initial Medical
### Medical Requirements

**Issue Date:** April, 2009

**Note 1.** The purpose of the required ophthalmic examination is (1) to ascertain normal visual performance, and (2) to identify any significant pathology.

**Note 2.** Guidance on the assessment of monocular applicants under the provisions of 1.2.4.8 is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

1.3.3 Applicants who have undergone surgery affecting the refractive status of the eye will be assessed as unfit unless they are free from those sequelae which are likely to interfere with the safe exercise of their licence and rating privileges.

1.3.4 The applicant will have the ability to read, while wearing the correcting lenses, if any, required by 1.3.2, the N5 chart or its equivalent at a distance selected by that applicant in the range of 30 to 50 cm and the ability to read the N14 chart or its equivalent at a distance of 100 cm. If this requirement is met only by the use of near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correction already prescribed in accordance with 1.3.2; if no such correction is prescribed, a pair of spectacles for near use will be kept readily available during the exercise of the privileges of the licence. When near correction is required, the applicant will demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

Note 1. — N5 and N14 refer to the size of typeface used. For further details, see the ICAO Manual of

### Report prior to initial Medical Assessment and every five years thereafter.

**Note 1.** The purpose of the required ophthalmic examination is (1) to ascertain normal vision performance, and (2) to identify any significant pathology.

**Note 2.** Guidance on the assessment of monocular applicants under the provisions of 1.2.4.8 is contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984).

2.3.3 Applicants who have undergone surgery affecting the refractive status of the eye will be assessed as unfit unless they are free from those sequelae which are likely to interfere with the safe exercise of their licence and rating privileges.

2.3.4 The applicant will have the ability to read, while wearing the correcting lenses, if any, required by 2.3.2, the N5 chart or its equivalent at a distance selected by that applicant in the range of 30 to 50 cm and the ability to read the N14 chart or its equivalent at a distance of 100 cm. If this requirement is met only by the use of near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correction already prescribed in accordance with 2.3.2; if no such correction is prescribed, a pair of spectacles for near use will be kept readily available during the exercise of the privileges of the licence. When near correction is required, the applicant will demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

Note 1. — N5 and N14 refer to the size of typeface used. For further details, see the ICAO Manual of
Medical Requirements
Issue Date : April, 2009

<table>
<thead>
<tr>
<th>1.13.4.1 When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles will be kept available for immediate use.</th>
<th>Note 2. — An applicant who needs near correction to meet the requirement will require “look-over”, bifocal or perhaps multifocal lenses in order to read the instruments and a chart or manual held in the hand, and also to make use of distant vision, through the windscreen, without removing the lenses. Single-vision near correction (full lenses of one power only, appropriate for reading) significantly reduces distant visual acuity and is therefore not acceptable.</th>
<th>Note 3. — Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.13.5 The applicant will be required to have normal fields of vision.</td>
<td>2.13.4.1 When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles will be kept available for immediate use.</td>
<td>3.13.4.1 When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles will be kept available for immediate use.</td>
</tr>
<tr>
<td>1.13.6 The applicant will be required to have normal binocular function.</td>
<td>2.13.5 The applicant will be required to have normal fields of vision.</td>
<td>3.13.5 The applicant will be required to have normal fields of vision.</td>
</tr>
<tr>
<td>1.13.6.1 Reduced stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia need not be disqualifying.</td>
<td>2.13.6 The applicant will be required to have normal binocular function.</td>
<td>3.13.6 The applicant will be required to have normal binocular function.</td>
</tr>
<tr>
<td>Note 2. — An applicant who needs near correction to meet the requirement will require “look-over”, bifocal or perhaps multifocal lenses in order to read the instruments and a chart or manual held in the hand, and also to make use of distant vision, through the windscreen, without removing the lenses. Single-vision near correction (full lenses of one power only, appropriate for reading) significantly reduces distant visual acuity and is therefore not acceptable.</td>
<td>Note 3. — Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.</td>
<td>Note 3. — Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.</td>
</tr>
<tr>
<td>Note 3. — Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.</td>
<td>Note 3. — Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.</td>
<td>Note 3. — Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.</td>
</tr>
<tr>
<td>Note 3. — Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.</td>
<td>Note 3. — Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.</td>
<td>Note 3. — Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.</td>
</tr>
</tbody>
</table>
### Hearing

1.14 Hearing requirements

1.14.1 The applicant, when tested on a pure-tone audiometer, will not have a hearing loss, in either ear separately, of more than 35 dB at any of the frequencies 500, 1 000 or 2 000 Hz, or more than 50 dB at 3 000 Hz.

1.14.1.1 An applicant with a hearing loss greater than the above may be declared fit provided that the applicant has normal hearing performance against a background noise that reproduces or simulates the masking properties of flight deck noise upon speech and beacon signals.

Note 1.— It is important that the background noise be representative of the noise in the cockpit of the type of aircraft for which the applicant’s licence and ratings are valid.

Note 2.— In the speech material for discrimination testing, both aviation-relevant phrases and phonetically balanced words are normally used.

1.14.2 Alternatively, a practical hearing test conducted in flight in the cockpit of an aircraft of the type for which the applicant’s licence and ratings are valid may be used.

---

### Hearing

2.14 Hearing requirements

Note.— Attention is called to 1.14.1 on requirements for the issue of instrument rating to applicants who hold a private pilot licence.

2.14.1 Applicants who are unable to hear an average conversational voice in a quiet room, using both ears, at a distance of 2 m from the examiner and with the back turned to the examiner, will be assessed as unfit.

2.14.2. When tested by pure-tone audiometry, an applicant with a hearing loss, in either ear separately, of more than 35 dB at any of the frequencies 500, 1 000 or 2 000 Hz, or more than 50 dB at 3 000 Hz, will be assessed as unfit.

2.14.3 Recommendation.— An applicant who does not meet the requirements in 2.14.2 should undergo further testing in accordance with 1.14.1.1

### Hearing

3.14 Hearing requirements

3.14.1 The applicant, when tested on a pure-tone audiometer will not have a hearing loss, in either ear separately, of more than 35 dB at any of the frequencies 500, 1 000 or 2 000 Hz, or more than 50 dB at 3 000 Hz.

3.14.1.1 An applicant with a hearing loss greater than the above may be declared fit provided that the applicant has normal hearing performance against a background noise that reproduces or simulates that experienced in a typical air traffic control working environment.

Note 1.— The frequency composition of the background noise is defined only to the extent that the frequency range 600 to 4 800 Hz (speech frequency range) is adequately represented.

Note 2.— In the speech material for discrimination testing, both aviation-relevant phrases and phonetically balanced words are normally used.

3.14.2 Alternatively, a practical hearing test conducted in an air traffic control environment representative of the one for which the applicant’s licence and ratings are valid may be used.
### CIVIL AVIATION AUTHORITY OF NEPAL

<table>
<thead>
<tr>
<th>1.15 Colour Perception Requirement</th>
<th>2.15 Colour Perception Requirement</th>
<th>3.15 Colour Perception Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>The applicant will be tested for his ability to correctly identify a series of pseudo-isochromatic plates in day light or in artificial light of the same colour temperature such as that provided by CIE standard illuminant “C” or “D_65” as specified by International Commission of Illumination (CIE).</td>
<td>The applicant will be tested for his ability to correctly identify a series of pseudo-isochromatic plates in day light or in artificial light of the same colour temperature such as that provided by CIE standard illuminant “C” or “D_65” as specified by International Commission of Illumination (CIE).</td>
<td>The applicant will be tested for his ability to correctly identify a series of pseudo-isochromatic plates in day light or in artificial light of the same colour temperature such as that provided by CIE standard illuminant “C” or “D_65” as specified by International Commission of Illumination (CIE).</td>
</tr>
<tr>
<td>An applicant failing to obtain a satisfactory score in such a test may nevertheless be assessed as 'fit' provided the applicant is able to readily and correctly identify 'aviation colour lights' displayed by means of recognized Colour Perception Lantern.</td>
<td>An applicant failing to obtain a satisfactory score in such a test may nevertheless be assessed as 'fit' provided the applicant is able to readily and correctly identify 'aviation colour lights' displayed by means of recognized Colour Perception Lantern.</td>
<td>An applicant failing to obtain a satisfactory score in such a test may nevertheless be assessed as 'fit' provided the applicant is able to readily and correctly identify 'aviation colour lights' displayed by means of recognized Colour Perception Lantern.</td>
</tr>
<tr>
<td>1.15.1 The applicant shall be required to demonstrate to perceive readily those colours the perception of which is necessary for the safe performance of the duties.</td>
<td>2.15.1 The applicant shall be required to demonstrate to perceive readily those colours the perception of which is necessary for the safe performance of the duties.</td>
<td>3.15.1 The applicant shall be required to demonstrate to perceive readily those colours the perception of which is necessary for the safe performance of the duties.</td>
</tr>
<tr>
<td>1.15.2 The applicant shall be tested for the ability to correctly identify a series of isochromatic plates in daylight or in artificial light.</td>
<td>2.15.2 The applicant shall be tested for the ability to correctly identify a series of isochromatic plates in daylight or in artificial light.</td>
<td>3.15.2 The applicant shall be tested for the ability to correctly identify a series of isochromatic plates in daylight or in artificial light.</td>
</tr>
</tbody>
</table>
### Medical Requirements

**Civil Aviation Authority of Nepal**

<table>
<thead>
<tr>
<th>Section</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.15.3</td>
<td>An applicant obtaining a satisfactory result shall be assessed as fit. An applicant failing to obtain a satisfactory result in such a test shall be assessed as unfit. He may be assessed further in lantern test where he may be assessed as fit if the defect is found to be defective safe, otherwise unfit if found defective unsafe.</td>
</tr>
<tr>
<td>2.15.3</td>
<td>An applicant obtaining a satisfactory result shall be assessed as fit. An applicant failing to obtain a satisfactory result in such a test shall be assessed as unfit. He may be assessed further in lantern test where he may be assessed as fit if the defect is found to be defective safe, otherwise unfit if found defective unsafe.</td>
</tr>
<tr>
<td>3.15.3</td>
<td>An applicant obtaining a satisfactory result shall be assessed as fit. An applicant failing to obtain a satisfactory result in such a test shall be assessed as unfit. He may be assessed further in lantern test where he may be assessed as fit if the defect is found to be defective safe, otherwise unfit if found defective unsafe.</td>
</tr>
</tbody>
</table>

*Sunglasses worn during the exercise of the privileges of the licence should be of neutral grey tint and shall be used only in daylight and shall not be used in night time. It will neither be non-polarizing nor polychromatic.*
## Medical Requirements

**CIVIL AVIATION AUTHORITY OF NEPAL**

**Appendix-1**

<table>
<thead>
<tr>
<th>Tests required</th>
<th>Tests required</th>
<th>Tests required</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medical examination done by 3 Aero- Medical Examiners viz. Physician, ENT specialist and Eye specialist</strong></td>
<td><strong>Medical examination done by 3 Aero- Medical Examiners viz. Physician, ENT specialist and Eye specialist</strong></td>
<td><strong>Medical examination done by 3 Aero- Medical Examiners viz. Physician, ENT specialist and Eye specialist</strong></td>
</tr>
</tbody>
</table>
| **Electrocardiogram -**  
Initial,  
30 – 40 every 2 years, and >40 annually,  
Chest X-ray –  
at initial and **(every 5 years)**  
Audiogram in a pure tone audiometer –  
Initial,  
<40 every 5 years, and  
>40 every 2 years  
Blood tests:  
Hgb and ESR, and Blood sugar –  
initial  
Urine tests –  
Routine and microscopic –  
Initial, and  
Albumin and Sugar in each medical examination  
Additional tests on reaching the age of 40 and there after every five years  
- Urine, routine and microscopic  
- Fasting blood sugar  
- Lipid profile  
- Exercise electrocardiogram  
- Echocardiogram | **Electrocardiogram -**  
Initial and >40 every 2 years  
Chest X-ray –  
at initial and **(every 5 years)**  
Audiogram in a pure tone audiometer –  
Initial and >50 every 2 years  
Blood tests:  
Hgb and ESR, and Blood sugar –  
initial  
Urine tests –  
Routine and microscopic –  
Initial, and  
Albumin and Sugar in each medical examination  
Additional tests on reaching the age of 40 and there after every five years  
- Urine, routine and microscopic  
- Fasting blood sugar  
- Lipid profile  
- Exercise electrocardiogram  
- Echocardiogram | **Electrocardiogram -**  
Initial and >40 every 2 years  
Chest X-ray –  
at initial and **(every 5 years)**  
Audiogram in a pure tone audiometer –  
Initial,  
<40 every 4 years, and  
>40 every 2 years  
Blood tests:  
Hgb and ESR, and Blood sugar –  
initial  
Urine tests –  
Routine and microscopic –  
Initial, and  
Albumin and Sugar in each medical examination  
Additional tests on reaching the age of 50 and there after every five years  
- Urine, routine and microscopic  
- Fasting blood sugar  
- Lipid profile  
- Exercise electrocardiogram  
- Echocardiogram |
PART 3  GUIDELINES ON MEDICAL CONDITIONS

Before issuing a license, initial or renewal, the applicant of flight crew or air traffic controller licence is medically examined. If he passes the medical assessment of the required Class as per the standards laid down in Medical Requirements, he will be assessed as Medically Fit and recommended for the issue of the licence. If the applicant is found to have any finding or medical condition that does not clearly meet the medical requirements, he fails the medical assessment and so will not be recommended for issue of licence. This also applies to the licence holder.

Hence the main objectives of the medical examination and assessment are to insure that the applicant or holder is:

1. physically and mentally capable of performing his flying duties in a safe manner. This includes having full use of his faculties i.e. visual ability, hearing, colour perception, balance, muscle sense, etc. and his ability to evaluate the flight conditions and to decide the safe course and act;
2. free of disease or condition which may suddenly render him incapable of performing his duties in a safe manner during on-going flight (acute incapacitation) or imperceptibly lead to commit or omit actions that may jeopardize safety of the on-going flight (subtle incapacitation); and
3. free of disease which may slowly but within the period of validity of his licence reduce his capacity for performing his duties below the acceptable level.

In borderline or doubtful findings or persistence of residual pathology or reduced function or disability after recovery from illness or operation or accident or any other medical event, he may be considered for recertification. Such cases are usually referred to the specialists who may require additional tests. All medical reports from treating physician should be provided, when applicable. If such specialists are of the opinion that the findings or residual pathology or reduced function or disability is not likely to interfere with the safe operation of the aircraft or with the safe performance of his duties, he may be assessed as medically fit. In such evaluation his relevant ability, skill and experience and operational conditions are also given due consideration. On such accredited medical opinion he may be recommended for issue or renewal of the licence by Aviation Medical Consultant or Civil Aviation Medical Board. On that licensing may be issued or renewed. In such cases operation 'limitation' or 'restriction' is usually endorsed for the sake of flight safety. They are, in case of flight crew, are as given below:

'Fit to fly as co-pilot only'
'Fit to fly with suitably qualified co-pilot'
'Fit to fly with a safety pilot with dual control in single pilot aircraft'
'Fit to fly solo in cargo or non-revenue passengers flights only'

Later he may be allowed to fly solo or without restriction
There may be other endorsements as use of appliances e.g. glasses, frequent assessments, additional tests, specialist reports, accredited medical opinion, practical flight tests, etc. when the safe performance of the licence holder's duties is dependent on compliance of such endorsements.

In case of Class II and Class III medical assessments, especially for private and recreational flying, less stringent medical standards may be acceptable from the nature of their work and safety concern, though the principle of evaluation will be the same.

If he is to be on medications, those should be from the approved list or should get prior approval from Aviation Medical Consultant or CAMB.

Continuous supervision and follow-up will be important in some cases. It should be the responsibility of Airline doctor or his family physician or even the medical examiner, if he is providing medical care. Hence all airlines are expected to have a Medical Unit or at least a Medical Officer in their establishment, who will be responsible to look after the health and follow up of such flight crew and other personnel of the airline.

Following descriptions include only common conditions in general population, so also in the aviation personnel. These guidelines, though, are meant for all applicants and holders of all classes of medical assessments, are more directed to the flight crew.

These guidelines are given in order to help the Aero-Medical Examiner, Civil Aviation Medical Board to deal with such medical conditions and to have a scientific, sound and uniform practice in assessing the applicant for or holder of licence. On those guidelines appropriate actions and decision will be taken and at the same time trying to retain the applicant or holder without compromising the flight safety. However guidelines are not necessarily final. These guidelines may be modified from time to time on the basis of further knowledge and experience.
3.1 NEURO-Psychiatric Conditions

The neuro-psychiatric symptoms vary from mild anxiety symptoms due to day-to-day events and stresses to severe and incapacitating disorders. If there is doubt or suspicion during the medical examination or on verifiable information from an identifiable source, psychiatric evaluation will be required detailing his opinion and recommendation.

3.1.1 Anxiety Based Disorders (Neurosis): An applicant with the history of anxiety-based disorder of significant severity requiring psychotropic medication or admission in hospital or prolonged treatment or recurrence, are normally rejected for all classes of licence.

The licence is suspended or is not issued during the psychiatric illness and while on treatment. But if the illness was not of long duration and the psychotropic drugs were stopped for 6 months or more, he may be considered for issue or recertification on the psychiatrist’s accredited medical opinion with restriction as ‘to fly as or with suitably qualified co-pilot in the multi-pilot aircraft’ or ‘to fly with safety pilot with dual control in single pilot aircraft’ for 6 months after which he shall be evaluated again.

3.1.2 Sociopathic Personality Disorders: All such cases, if proved, are assessed as unfit for all classes of licence.

3.1.3 Psychotropic Substance/Alcohol Abuse: These reduce performance, slows reaction and impair judgment. The detrimental effect persists even after these substances have been eliminated from blood. There are every chance of recurrence even after stopping them.

Hence history of abuse or effect of abuse of these substances are incompatible for flying. After successful treatment and complete abstinence for six months or more, he may be considered for issue or recertification on the psychiatrist's accredited medical opinion and provided abstinence is secure and three monthly follow-up is maintained. It will be with restriction as 'to fly as or with suitably qualified co-pilot in the multi-pilot aircraft', or 'to fly with safety pilot with dual control in single pilot aircraft'. Failing to comply with this or relapse will make him permanently unfit.

3.2 Neurological Conditions

3.2.1 Seizure: Disturbance of consciousness in the flight personnel is usually due to transient cerebral hypoxia following syncope, or more rarely due to cardiac disorder or an epileptic seizure. An epileptic seizure occurring during flight is an unacceptable safety hazard even in the multi-pilot aircraft. It may be a partial seizure and not immediately apparent to the other pilot or a generalized tonic-clonic seizure consequences of which may disrupt the equipment or control. This may be especially hazardous if it occurs during takeoff or landing. Hence it is important to be sure whether it is due to 'faint,' or 'fit i.e. seizure'.

Epilepsy is by definition a recurrent seizure and causes sudden incapacitation. Hence the diagnosis of epilepsy leads to permanent failure in all classes of medical assessment.
Single seizure, if afebrile and unprecipitated, may be assessed as fit for certification after 10 years, provided there is no recurrence, and he is off drugs for five years or more. He will also require normal EEG and MRI of brain and a neurologist's opinion that there is no likelihood of having another seizure. But it will be with restriction as 'to fly as or with suitably qualified co-pilot' in the multi-pilot aircraft or 'with safety pilot with dual control in single pilot aircraft' for one year, after which the restriction may be lifted.

History of childhood febrile seizure, occurring before the age of 5 and not associated with neurological deficit, may be considered fit for certification.

Post-traumatic epilepsy is disqualifying.

Abnormal EEG or MRI or recurrence of epilepsy, on the background of previous history of epilepsy will be permanently disqualifying.

3.2.2 Head Injury: Accidents associated with head injuries are common in the modern world.

Head injury with loss of consciousness and focal neurological deficit, depressed skull fracture, cerebral injury or post-traumatic headache will be disqualifying.

There are two major concerns following head injury with loss of consciousness. One is the neuro-psychological consequences of the head injury in the individual though without focal neurological deficits, could be in the form of dysfunction in number of functional executive activities of brain. This is the effect of acceleration/deceleration forces on the skull and the brain causing damage to cortical and diffuse white matter. The other concern is the possibility of seizure. Both are incompatible to flight. The duration of loss of consciousness and length of post-traumatic amnesia both show a good correlation of severity of brain damage and occurrence of epilepsy.

Probability of epilepsy is greater in those with penetrating skull injuries. Even with full physical and neuro-psychological recovery there is an increased probability of seizures for over 10 years. In general, those who develop post-traumatic seizures, 50% will occur within one year and 70 – 80% within two years. Thereafter the incidence is 3 – 5% per year upto ten years.

<table>
<thead>
<tr>
<th>Risk Factors for Late Post-Traumatic Epilepsy</th>
<th>Incidence of late seizures (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penetrating injury caused by missiles</td>
<td>53</td>
</tr>
<tr>
<td>Intracerebral haematoma – laceration</td>
<td>39</td>
</tr>
<tr>
<td>Focal brain damage on early CT scan</td>
<td>32</td>
</tr>
<tr>
<td>Early seizure</td>
<td>25</td>
</tr>
<tr>
<td>Depressed fracture – torn dura</td>
<td>25</td>
</tr>
<tr>
<td>Extradural or subdural haemorrhage</td>
<td>20</td>
</tr>
<tr>
<td>Focal signs (hemiplegia, aphasia,..)</td>
<td>15</td>
</tr>
<tr>
<td>Depressed skull fracture</td>
<td>15</td>
</tr>
<tr>
<td>Loss of consciousness &gt; 24 hours</td>
<td>5</td>
</tr>
<tr>
<td>Linear fracture</td>
<td>5</td>
</tr>
<tr>
<td>Mild concussion</td>
<td>1</td>
</tr>
</tbody>
</table>

Pagni C.A. Acta Neurochirurgica, Suppl. (1990)

| Recommendation minimum period of grounding on duration of period of post-traumatic amnesia (PTA) |
|-----------------------------------------------|-----------------------------------------------|
| Duration of PTA                               | Minimum recommended period                    |
| Momentary                                    | Two – six weeks                               |
More than one hour  Two months
More than 12 hours  Four months
More than 24 hours  Six months
More than one week 12 months

Depending upon the initial level of risk if the epilepsy has not occur two years after head injury the reduction of risk may allow a pilot to return to flying without restriction, or as or with a copilot. After five years this restriction can be removed.

**Head injury with loss of consciousness and after complete recovery of mental and neurological function** may be assessed as 'fit' with or without restriction, after complete neurological examination and appropriate laboratory and imaging studies. However a period of stabilization and Accredited Medical Opinion is required before he is recommended.

### 3.2.3 Headache

**Headache** is a common symptom and mostly mild and short lived. But some may be severe and incapacitating, and also chronic or recurring and so hazardous to flight safety.

**Migraine:** Some migraine presents as frequent attacks of severe headache associated with aura particularly the disturbance of sight, and neurological disturbance, prostration from vomiting, photophobia and occasional loss of consciousness. It shall be assessed as unfit for certification. But some may be considered for recertification and assessed as fit 'to fly as or with suitably qualified co-pilot in the multi-pilot aircraft' or 'with safety pilot with dual control in single pilot aircraft' for one year. If the attacks of headache are of lesser severity and infrequent, and if he is in on treatment and free of headache for more than 6 months. The restriction may be lifted after one year.

**Cluster Headache:** Chronic cluster headache without remission is assessed as permanently unfit. But if occurs for a limited period followed by long period of remission, he may be certified fit with restriction 'to fly as or with suitably qualified co-pilot in the multi-pilot aircraft' or 'with safety pilot with dual control in single pilot aircraft' with suspension of licence during relapse.

### 3.2.4 Neuralgic Pain

Neuralgic attacks of sudden severe pain as in **trigeminal neuralgia and other neuralgias** are distracting and incapacitating and such history are assessed as unfit. But if becomes free of pain spontaneously or after operation or with treatment and remains so for more than six months without treatment, he may be considered for recertification with or without restriction. Neurologist opinion may be required.

### 3.2.5 Infection

Infection of nervous system can occur sometime in the aviation personnel.

**Viral Encephalitis:** Generally applicant who has suffered from viral encephalitis would be assessed as permanently unfit, as he often has residual neuropsychological deficit.

**Viral Meningitis:** Applicant who is neurologically normal two months after viral meningitis, will be assessed as fit in al classes.

**Bacterial Meningitis:** Applicant who has completely recovered from bacterial meningitis may be assessed as medically fit after one year, provided he is found to be normal on neurological examination, electroencephalogram, and CT scanning and if there is no focal neurological deficit.

**Brain Abscess:** Applicant who has suffered from brain abscess is assessed as permanently unfit due to increased risk for epilepsy from the scarring that forms round the abscess.

**Guilliane Barre Syndrome:** Applicant who has made a full recovery from Guilliane Barre Syndrome may be assessed as fit. If he has mild residual weakness, he may be assessed with flight test also.

### 3.3 CARDIO-VASCULAR CONDITIONS

#### 3.3.1 Hypertension

Hypertension is a common condition in the adult population and cause long term changes, if not controlled, e.g. damage to major organs including heart, brain, kidneys and eyes. Hence
they can be cause of incapacitation in flight. Hypertension is a common cause of premature loss of licence.

**Blood pressure measurement:** Blood pressure measurement will be done both in seated and recumbent positions. The systolic blood pressure shall be recorded at the appearance of the Kortakoff sounds (phase I) and the diastolic blood pressure at their disappearance (phase V). If the blood pressure is raised and the resting heart rate is rapid, further observation should be made during the medical examination after some rest.

Hypertension will be suspected if blood pressure is recorded 140/90 mm of Hg or more in sitting position after adequate rest. It will be confirmed if it is consistently so on weekly blood pressure examinations for 4 weeks. Hypertension is classified as per new National Heart and Lung and Blood Vessels Institute (NHLBI) Standards (May 2003), as given below:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Systolic (mm of Hg)</th>
<th>Diastolic (mm of Hg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt;120</td>
<td>&lt;80</td>
</tr>
<tr>
<td>Prehypertension</td>
<td>120 – 139</td>
<td>80 – 89</td>
</tr>
<tr>
<td>Stage I Hypertension</td>
<td>140 – 159</td>
<td>90 - 99</td>
</tr>
<tr>
<td>Stage II Hypertension</td>
<td>&gt;160</td>
<td>&gt;100</td>
</tr>
</tbody>
</table>

If the readings are above 140/90 mm Hg but below 160/100 mm of Hg i.e. Stage I Hypertension, an ambulatory blood pressure measurement (ABPM) for 24 hours will be done to eliminate the white coat and anxiety induced hypertension.

If 4 blood pressure measurements done at weekly intervals are more than 160/100 mm of Hg i.e. Stage II Hypertension, no ABPM will be required.

**24 hours ambulatory blood pressure measurement:** It is programmed to record the blood pressure every 30 minutes during the day time and every 60 minutes during night time. The applicant is instructed to keep the arms still during measurements and continue his daily activities other times. He is also to record the activities as well as time of going to bed and time of rising. For analysis more than 14 systolic and diastolic blood pressure records during the day time and at least 7 records at night are mandatory.

Definition of normal blood pressure and hypertension using ABPM is given below:

<table>
<thead>
<tr>
<th></th>
<th>Normotension</th>
<th>Hypertension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Upper limits by rounding</td>
<td>(Upper limits by rounding</td>
</tr>
<tr>
<td></td>
<td>downwards 0-5 mmHg)</td>
<td>upwards 0-5 mmHg)</td>
</tr>
<tr>
<td>For 24 hours average</td>
<td>130/80 mmHg</td>
<td>&gt;135/85 mmHg</td>
</tr>
<tr>
<td>For day time average</td>
<td>135/85 mmHg</td>
<td>&gt;140/90 mmHg</td>
</tr>
<tr>
<td>For night time average</td>
<td>120/70 mmHg</td>
<td>&gt;125/75 mmHg</td>
</tr>
</tbody>
</table>

The applicant with hypertension diagnosed for the first time, will require cardiovascular evaluation for medical assessment including risk factors and target organs, and consist of:
- Detailed history including family, personal & social,
- Blood tests – Hb, ESR, urea, creatinine, electrolytes, fasting lipid profile, uric acid and fasting blood sugar
- Urine analysis
CIVIL AVIATION AUTHORITY OF NEPAL

- Chest X-Ray
- Electrocardiogram
- Echocardiogram
- Exercise Electrocardiogram Test

The applicant who is diagnosed 'Stage I Hypertension' will be treated initially with non-pharmacological means and monthly blood pressure recording for three to six months maintaining the flight status, and then with approved anti-hypertensive drugs, if necessary.
The applicant diagnosed as 'Stage II Hypertension' will be certified 'unfit temporarily' for flight duty. Meanwhile it will be attempted to control the blood pressure by non-pharmacological means +/- antihypertensive drugs or anti-hypertensive drug will be adjusted if he is already on treatment. The minimum period of unfit should be 2 weeks from the effective dosage of approved drug or drugs, to watch the adverse effects of these drugs in that dosage. During this period blood pressure will be recorded weekly. After the control of blood pressure, he will be followed up monthly for three months and then 3 monthly, provided blood pressure control is satisfactory.

This should be the responsibility of Airline doctor or his family physician or even the medical examiner, if he is providing medical care. Before certification of medical fitness all the medical reports from treating physician should be provided to the medical examiner and then to the Member Coordinator.

Non-pharmacological means or modification of life style (weight reduction, minimizing alcohol consumption and salt intake, regular exercise,) is the first approach. Cessation of smoking and reduction of saturated fat intake are to be strongly recommended as it reduces the associated cardiovascular risk.

Following classes of drugs have been identified as acceptable in the management of hypertension in aviation personnel. viz. Non-loop Diuretics (Hydrochlorothiazide 25 mg/day, Chlorthalidone, Amiloride, Triamterin, Aldosterone), Hydrophilic Beta-blockers (Atenolol and metoprolol), Long acting Angiotensin Converting Enzyme (ACE) Inhibitors (Enalapril, Lisinopril), Angiotensin II receptor blockers and Slow Calcium channel blockers (long acting dihydropyridines viz. amlodipine).

On periodic examination of those controlled on acceptable drugs for renewal of licence, the treating physician will provide the medical report and records of at least 3-monthly blood pressure, and he will have tests as listed above once every two years during medical examination.

Stage I Hypertension is certified 'fit' without restriction, except during the initial few weeks of initiation of treatment with anti-hypertensive drugs and he will be observed for any side effects.

Stage II hypertension is certified 'temporarily unfit' until his blood pressure is controlled and the anti-hypertensive drugs cause no adverse effects. Then he will be assessed fit without restriction.

Presence of complication of hypertension will make him 'unfit'.

3.3.2 Coronary Artery Disease: Coronary artery disease is common especially in affluent society. The incidence is in the increase in this part of the world. Sudden incapacitation is a dreaded situation during the flight and hence it is the commonest cause of the loss of licence. Not only local lesion of the coronary arteries are important, but risk factors and life style are also equally important and need no addressed.

Proven history or clinical diagnosis of Myocardial Infarction with or without symptom and with or without treatment shall be assessed as 'unfit' in both initial and renewal, for all classes of licence. He may be considered for recertification after one year, if there is no significant residual damage of myocardium and no significant stenosis of coronary artery or its branches and according to accredited medical opinion the cardiac condition is unlikely to interfere with the safe exercise of the privilege of his licence. It will be endorsed with restriction for one year to fly as or with a copilot and this restriction may be lifted after one year. Follow-up of annual cardiological review shall be required by a cardiologist, including Exercise ECG +/- or Myocardial perfusion scintigraphy. At 5 years repeat coronary arteriogram may be required.

All cases of atypical chest pain or suspected or asymptomatic or symptomatic coronary artery disease will be assessed as 'unfit' and shall undergo detailed cardiovascular evaluation and investigations, and require
'accredited medical opinion'. Case of angina +/-or Exercise ECG positive for reversible myocardial ischaemia will be assessed as unfit for any class of licence. If he was treated with coronary angioplasty or with coronary artery by-pass graft, he may be assessed as fit after one year of the procedure after cardiac evaluation and accredited medical opinion that there is no likelihood of becoming suddenly incapacitated which would interfere with the safe operation of aircraft and the safe performance of duties. It will be restricted multicrew operation for one year after which it may be lifted. Follow-up of annual cardiological review shall be required by a cardiologist, including Exercise ECG +/-or Radioisotope Myocardial Perfusion Scan. At 5 years full cardiological evaluation and repeat coronary arteriogram may be required.

**Exercise Electrocardiography:** A standardized protocol such as Bruce treadmill protocol or equivalent should be employed. The subject should be exercised to symptom limitation and be expected to complete at least three stages – nine minutes or 11 METs. The reason for discontinuing the test should be recorded together with the presence or absence of any symptoms.

More than 1 mm ST depression in Exercise ECG will be considered as positive for reversible myocardial ischaemia. The depression should be horizontal or down sloping and lasts more than 0.08 second duration. There may be disturbance in conduction or/and ventricular or supraventricular extrasystoles.

Failure to achieve increase in blood pressure or occurrence of fall in blood pressure is indicative of extensive ischaemia.

Inability to achieve predicted heart rate target renders the test inconclusive rather than negative.

a. Absence of reversible ischaemia will rule out coronary artery disease.
b. Presence of reversible ischaemia shall have coronary angiogram, and further action will be taken on the findings.
Coronary Angiogram: Significant stenosis is defined as coronary artery or its main branches being obstructed more than 30% and minor branches more than 50%.
(a) Absence of significant stenosis in any coronary artery or its branches shall be defined as false positive exercise ECG.
(b) Presence of significant stenosis of one or more coronary artery or branches will be disqualifying.

Applicants with ischaemic damage to the ventricle such as dyskinesia, hypokinesia or akinesia, ejection fraction <50 and significant abnormality of wall motion shall be assessed as 'unfit'.

3.3.3 Epicardial, myocardial or valvular heart disease: Applicants with epicardial, myocardial or valvular heart disease, wit or without symptom, treatment or surgery, shall be assessed as unfit. Applicants without symptom for class II Medical Assessment may be assessed as fit after full cardiological evaluation and accredited medical opinion, if they are not carrying revenue passengers.

3.3.4 Vascular conditions: Applicants with following vascular conditions shall be assessed as unfit, viz.
- Significant peripheral arterial disease, before or after surgery,
- Aneurysm of thoracic or abdominal aorta, before or after surgery, and

3.3.5 Vaso-vagal syncope: Recurrent vaso-vagal syncope will be assessed as unfit.

3.3.6 Rhythm or Conduction Disturbances: Applicant with rhythm or conduction disturbance needs to be evaluated basically to find out (a) what extent of disability it can produce? and (b) is there underlying heart disease? This may require detailed cardiological evaluation with echocardiography, exercise electrocardiogram, Holter monitoring, etc.

Commonly occurring conditions like respiratory arrhythmia, occasional uniform atrial or ventricular ectopic complexes which disappear on exercise, rapid heart rate from excitement or exertion, slow heart rate not associated with auriculo-ventricular dissociation, may be regarded as being within normal limits.

Supra-ventricular premature beats or ectopics are usually of less importance, but some of them may predispose to supraventricular tachycardia, atrial flutter or atrial fibrillation.

Supraventricular tachycardia may accompany illnesses like Pneumonia or Thyrotoxicosis, in which case the disease itself will disqualify him until he is cured or controlled.
Paroxysmal supraventricular tachycardia cause distraction and in some is incapacitating. Applicants with successful therapy with anti-arrhythmic drugs need not be disqualifying. Ablation therapy should be confirmed to be successful by repeat electrophysiological studies after 3 months. Restriction is applied as to fly in multi crew aircraft or to fly with safety pilot for three months, after which the restriction can be lifted.

Ventricular premature beats in presence of cardiac disease is disqualifying. It is also more likely to be associated with serious ventricular tachycardia and hence disqualifying if they present with one or more of the following characteristics :
(a) Prolonged Q-T interval,
(b) Occurrence in close proximity to the vulnerable period i.e R on T phenomenon,
(c) Occurrence in pairs or regularly couple to the normal QRS complex in bigemminy,
(d) Multifocal origin,
(e) Postextrasystolic T inversion or post-extrasystolic ST depression, and
(f) Increase in frequency with stress.

It may be assessed as fit with a density of < 200/hour if non-invasive investigations are satisfactory, but multicrew endorsement is usually applied.

Applicants with broad +/- or narrow complex tachycardia shall be assessed as 'unfit'.

Isolated sinus node dysfunction including sinus Bradycardia, may occur in healthy young people, particularly those engaged in vigorous exercise. Such finding need not disqualify the applicant.

Sinoatrial disease may remain relatively free of symptom for years. Applicant, who is asymptomatic, may be assessed as fit but with restriction to multicrew operation and regular review with exercise electrocardiogram for chronotropic incompetence and Holter monitoring are required. Once symptomatic, he is assessed as permanently unfit.

Atrial fibrillation may be encountered during medical examination. Leaving aside the possibility of other disqualifying conditions which may coexist, the importance of atrial fibrillation is its possibility to cause distraction, subtle incapacitation and the risk of thrombo-embolism. A single episode with a defined cause e.g. vomiting, which is self limiting with spontaneous reversion to sinus rhythm eventually get unrestricted flying status, though in the beginning are endorsed with multicrew status. Need for DC conversion does not necessarily imply bad prognosis. Other types of atrial fibrillation are paroxysmal or persistant or permanent atrial fibrillation. Presence of structural or metabolic abnormality, or of ischaemic, hypertensive or valvular heart disease, or thyrotoxicosis or possibility of alcohol abuse will disqualify him from flying. So lone atrial fibrillation, without any obvious pathology may be assessed as fit with restriction in multicrew operation, if asymptomatic. Permissible medication to reduce the ventricular rate are Digoxin, Beta blockers and Verpamil.

Fist degree or second degree (Type I) should be investigated to rule out heart disease and to determine the risk of complete heart block. This can be seen during rest, particularly sleep, in young adults who engage in vigorous exercise, and so they are assessed as fit without restriction.

Bundle branch block: Isolated bundle branch block and left hemiblocks, which are long standing are generally benign. Applicants with complete right or left bundle branch block require cardiological evaluation on first presentation.

3.3.7 Congenital heart diseases: Sometimes applicant with congenital heart disease may apply for initial or renewal of the licence. The condition may be known earlier or maybe detected for the first time.
Small or early (<24 years) corrected secundum atrial septal defect is compatible with unrestricted flying subject to regular review, but departure from this requirement implies restricted flying or denial.

Small ventricular defect may be assessed as fit as it tends close spontaneously or remain stable. Closure in childhood likewise carries a good outcome.

Coarctation of aorta: Applicant who had undergone surgical correction after the age of 12 is assessed as unfit due to increased risk of sudden death and incapacitation due to cerebrovascular accident. Applicant who had undergone successful correction before the age of 12 may be certified fit.

3.3.8 Innocent murmurs: Murmurs not necessarily means a valvular heart disease. If it is diagnosed to be innocent murmurs, he can be given unrestricted flying status. He may need cardiologist confirmation with non invasive tests.

3.3.9 ECG Findings: They are listed below in different categories

ECG Findings
- Normal Tracing - Fit
- Normal Variant - Fit
- Borderline – Requires evaluation
- Abnormal Tracing – - Unfit straightway or after evaluation

Normal Variants
Require no further evaluation
- Isolated Sinus Tachycardia
- Sinus Bradycardia
- Sinus Arrest – less than 2 seconds in duration
- Sinus Arrhythmia
- Wandering Supraventricular Pacemaker
- Nodal Rhythm
- Sinus Rhythm (Atrial Rhythm)
- Atrial Premature Extrasystole(s)
- Nodal Premature Extrasystole(s)
- Nodal Escape Beat
- Atrial Escape Beat
- Premature Ventricular Contraction, Unifocal, less than 30
- Ventricular Escape Beat
- Interpolated Extrasystoles
- Ventricular Bigeminy, Trigeminy, less than 30
- Ventricular Parasystole, less than 30
- Terminal Intraventricular Conduction Defect
- Unclassified Intraventricular Conduction Defect
- Nonspecific ST elevation (Early Repolarization)
- Post-extrasystolic T Wave Changes
- PVC’s (Unifocal) after Exercise
- PVC’s (Unifocal) during Exercise
- S₁, S₂ or S₁, S₂, S₃ Pattern
- Right Bundle Branch Block (RBBB) – in absence of organic disease
Borderline i.e. Possibly Significant Abnormal Tracing, requires further evaluation

- Sinus Tachycardia – if persistent and present during basal resting state
  - Med Eval, Cardiac enzymes, T3, T4 & TSH, Echocardiogram, TMT & Holter
- Paroxysmal Atrial or Nodal Tachycardia, Atrial Flutter or Atrial Fibrillation precipitated by well-documented unusual circumstances
  - Med Eval, Cardiac enzymes, T3, T4 & TSH, Echocardiogram, TMT & Holter
- First Degree A-V Block (>0.20 sec)
  - Med Eval, Echocardiogram, MT & Holter
- Wenckebach (Type I A-V Block)
  - Med Eval, Echocardiogram, TMT & Holter
- A-V Dissociation
  - Med Eval, Echocardiogram, TMT & Holter
- Low Amplitude T Wave or Non-specific T wave Changes (in fasting condition)
  - Med Eval, Echocardiogram, TMT & Holter
- Non-specific ST Depression (in fasting condition)
  - Med Eval, Echocardiogram, TMT & Holter
- Abnormal TMT (1.0 mm or greater ST depression, horizontal or down sloping, of more than .08 sec duration)
  - Med Eval, Echocardiogram, Holter, Thallium Scan, Coronary Angiogram may be required
- Poor R wave Progression
  - Med Eval, Echocardiogram, TMT & Holter
- PVC’s (for the first time, over 30 years old) including Bigeminy, Trigeminy & Parasystole
  - Med Eval, Echocardiogram, TMT & Holter
- Right Bundle Branch Block (RBBB) (new appearance)
  - Med Eval, Echocardiogram, TMT & Holter
- Left Bundle Branch Block (LBBB) –
  - Med Eval, Echocardiogram, TMT & Holter
- Wolff-Parkinson-White Syndrome (WPW)
  - Med Eval, Echocardiogram, TMT & Holter
- Lown-Genang-Levine Syndrome (LGL)
  - Med Eval, Echocardiogram, TMT & Holter
- Left Axis Deviation (LAD) (> -30°)
  - Med Eval, Echocardiogram, TMT & Holter
- Right Axis Deviation (RAD) (>120°)
  - Med Eval, Echocardiogram, TMT & Holter
- Pericarditis – repeat after 6 months

Definitely Significant Abnormal

- Disqualifying for all classes.
- Usually do not require further evaluation
- Serious enough to warrant complete medical evaluation
- If found in personnel already on flying duty, ground him
- Sinus arrest – occurring spontaneously for a period of 2 seconds or more or when associated with symptom
Paroxysmal atrial or nodal tachycardia, atrial flutter, or atrial fibrillation, unless it is an isolated occurrence precipitated by well-documented unusual circumstances, e.g. excessive fatigue, infection, ingestion of medicine, alcohol or toxic agent, not associated with WPW

- Idioventricular rhythm
- Ventricular tachycardia – 3 or more successive ventricular contractions
- Paired PVC’s
- Ventricular fibrillations
- Multifocal PVC’s
- Second Degree A-V Block (Mobitz type II)
- Complete (third degree) A-V block
- Evidence of Myocardial ischaemia or damage, especially as a serial change
- Evidence of Myocarditis, Endocarditis
- WPW when associated with an episode of a tachyarrhythmia or suggestive of history of same
- LGL
- LBBB, in Class I Flying personnel
- Any other ECG abnormality, indicative or significantly altered cardiac function, not mentioned above.
Medical Evaluation:
- History & evaluation preferably by a Cardiologist
- Laboratory investigations (CBC, ESR, urine R & M, Renal profile, Bl sugar F & PP, BUA, Lipid profile, Thyroid function tests)
- X rays – Chest PA & Lateral views
- Other tests may be required depending upon the case

Cardiac Investigations:
- ECG - ECG at resting and fasting state
- Echocardiogram
- Exercise ECG
- Ambulatory ECG
- Radioisotope Myocardial Perfusion Scan
- Stress Echocardiogram
- Coronary Angiogram
- Any other investigations deemed necessary

3.4 RESPIRATORY CONDITIONS

Respiratory diseases are the commonest cause of morbidity and loss of time of work in general population. The disease, not so symptomatic on the ground, may cause problem and incapacitation due to aviation environment.

3.4.1 Bronchial Asthma: An applicant with recent attack of bronchial asthma shall be assessed as 'unfit for initial issue of licence. Recurrent attacks shall be assessed as 'unfit for renewal of licence. He may be considered for certification only after being free from attack for 5 continuous years. History of childhood asthma alone is not disqualifying.

3.4.2 Chronic obstructive airway disease requiring continuous medications shall be assessed as unfit. The individual assessment is made on the basis of severity of disease, type and amount of medication required, full history, pulmonary function test. Treating physician or chest physician's report is usually required.

3.4.3 Pneumonia: Unfit until fully recovered.

3.4.4 Pulmonary Tuberculosis: Applicant or holder will be assessed as unfit during active tuberculosis and in the initial phase of treatment at least for two months. Once the patient becomes asymptomatic and there is marked clearing in the chest X ray, he may be assessed as 'fit' with restriction as only in multi-pilot aircraft while he is on treatment.

3.4.5 Tubercular Pleural effusion, as in Pulmonary tuberculosis.
3.4.6 **Spontaneous Pneumothorax**: It happens suddenly and can cause severe pain or breathlessness. Open pleurectomy is recommended following a single event and flying duties can be resumed after 3 months after pleurectomy. Otherwise it can be considered for recertification only after 18 months. **Recurrent spontaneous pneumothorax** are grounded permanently if pleurectomy is not done. Investigation to exclude lung disease is required.

3.4.7 **Pyothorax**: If completely healed after medical +/- or surgical treatment, he may be considered for certification after 6 months. If pulmonary functions are satisfactory, he may be assessed as fit with multi crew restriction. After one year the restriction may be lifted.

3.5 **GASTRO-INTESTINAL CONDITIONS**

Digestive complaints or conditions are common in population. These can distract or even incapacitate though most of them are just a nuisance during the flight.

3.5.1 **Gastro-oesophageal reflux disease**: If troublesome and symptomatic, it will be assessed as unfit. It will be assessed as fit after symptom are abated with or without acid suppressing treatment with or without restriction.

3.5.2 **Gastric or Duodenal Ulcer**: Active ulcer confirmed on endoscopy are assessed as unfit Before being assessed as 'fit' ulcer must have healed completely endoscopically. Continued treatment with acid suppressing agents are allowed, if no side effects are produced.

3.5.3 **Complications of ulcer e.g. haemorrhage or perforation**: He is assessed as unfit for six months. After treatment and if asymptomatic, he may be assessed as fit after re-endoscopic confirmation. Continued treatment with acid suppressing agents are not disqualifying. It may be endorsed with restricted flying in multicrew operations for six months.

3.5.4. **Chronic Inflammatory Bowel Disease**: Applicant with chronic inflammatory bowel disease shall be assessed as unfit.

3.5.5 **Cholelithiasis / Cholecystitis**: Symptomatic cholelithiasis will be assessed as unfit and will be assessed as fit only after cholecystectomy and full recovery. Asymptomatic incidental finding of a large solitary gall stone may be assessed as fit. Acute Cholecystitis are certified unfit and will certified fit after symptom is controlled after treatment.

3.5.6 **Hernia**: Significant hernias are disqualifying until they are repaired.
3.6 GENITO-URINARY CONDITIONS

3.6.1 Haematuria: An initial applicant with haematuria should be investigated before final assessment is given. Others who are found to have isolated microscopic haematuria during routine medical examination, may be assessed fit while further investigations are carried out. In case of frank haematuria, licence is suspended or medical assessment result is withheld until the investigations are completed.

3.6.2 Proteinuria: Trace protein result can occur in as little as 50 mg of protein in a litre of urine and 1+ at about 300 mg in a litre of urine. On finding 1+ proteinuria, one should get 24 hours excretion of protein in urine. An applicant for initial licence with proteinuria should be investigated before final assessment is given. Applicants for renewal and licence holders with isolated mild proteinuria (<1 gm in 24 hours may continue to fly) whilst awaiting investigations may be allowed full flying duties without restrictions. If Significant proteinuria (>1 gm in 24 hours) is found, medical licence result is withheld or licence suspended pending the results of investigations. If associated with haematuria, hypertension, renal impairment or signs of systemic disease, he should be assessed as unfit. If proteinuria is isolated finding, he may be assessed as fit with restricted multicrew operations, provided that he is carefully followed up at a minimum of six monthly intervals.

3.6.3 Urolithiasis: Urolithiasis or stone in the urinary tract is a common condition in the general population. The concern is the sudden incapacitation due to colic that it can produce. Once the applicant or holder is suspected of or diagnosed urolithiasis, further urological evaluation is mandatory. The stone may pass per urethra or removed by extracorporeal shockwave lithotripsy (ESWL) or operation, but it can recur in course of time. Hence follow up is important.

Urological evaluation are as follows:
- Full history including family history
- Urine examination - routine and microscopic examination
- Blood examination – urea, creatinine, electrolytes, calcium, uric acid
- Intravenous urogram (IVU)
- Ultrasound of abdomen and pelvis
- Biochemical tests
- Other tests as deemed necessary

Asymptomatic stone: Any stone in urinary tract, even without symptom will require further evaluation.
- If it is lying in the parenchyma and causes no obstruction, he may be certified fit without restriction.
- If it is lying in collecting system with or without obstruction, his licence is suspended until the stone is cleared. Ultrasound of abdomen and pelvis will be required in every medical assessment.

Symptomatic Stone: If the stone is causing colic pain, his licence is suspended until the stone is cleared.

Recurrent Stone: It is important to follow up closely for recurrence of stone by means of ultrasound in each medical examination.

3.7 METABOLIC, NUTRITIONAL AND ENDOCRINIAL CONDITIONS
3.7.1 Obesity: Gross obesity, BMI of more than 40, will be assessed as unfit for all classes of medical assessments. Obesity, BMI more than 30, in an applicant will require further evaluation especially for risk factors of cardiovascular diseases and obesity-associated health problems, before he is assessed as fit. He also may required to be tested in the aircraft and cockpit about his movement and activities to operate the aircraft.

3.7.2 Serum lipids abnormality: Serum lipids estimation (serum cholesterol, triglyceride, HDL & LDL): The concern with disturbance of lipid metabolism is accelerated atherogenesis and so potential increase in the risk of sudden cardio-vascular incapacitation in the aviation personnel.

*The serum lipids estimation is to be done in the fasting stage. All the lipid components are to be maintained within normal limits. It is even more important in presence of hypertension and/or coronary artery disease and family history. In such cases and in presence of other risk factors, it is to be maintained at further lower level, which are to be controlled by life style modification e.g. reduction in alcohol, cessation of smoking, and increased exercise. If lipids do not come down to satisfactory level in two periods of 3 months on non-pharmacological means, Statin medication are to be started.*

On the start of medication the license holder shall not be allowed to exercise the privilege of his licence to insure that it has not caused significant side effects. During renewal lipid profiles will be required. Lipid profile abnormality alone will not downgrade his medical fitness.

3.7.3 Diabetes: Diabetes mellitus is a common condition in the population and half of them remain undiagnosed and the incidence is on the rise in this part of the world. So it is also found in the aviation personnel. The problems in the aviation could be from diabetes as well as from its associated complications e.g. marked increase in coronary artery disease, visual problems and nephropathy. The other problem is from the treatment causing hypoglycaemia which can be severe and sudden or mild and subtle. Both are serious hazards to flight safety.

**Glycosuria** found at 'Medical Examination' or at any other time requires that the license be suspended until full investigation has been undertaken.

Should a diagnosis of **Impaired glucose tolerance (IGT) or Diabetes** be made, the license must remain suspended until stable control is achieved from diet +/- approved oral antidiabetic agents and maintained for three consecutive months.

Typical symptoms of diabetes mellitus are weight loss, polyuria and polydypsia. Finding of glycosuria and an elevated blood sugar are diagnostic. However, the difficulty arises from mild glycosuria and subsequent abnormal blood glucose levels are found in a symptomless applicant during routine medical examination. Abnormal blood glucose requires glucose tolerance testing.

Diabetes may be controlled on diet alone or oral antidiabetic agents or insulin may be required depending on the type and severity of diabetes.

Should **diabetes control be obtained satisfactorily by modification of diet** alone, all classes of license are restored.

**Diabetes controlled by anti-diabetic agents, Metformin or Acarbose**, will be assessed as fit.

Once diagnosed as impaired glucose tolerance or diabetic he should be on regular follow up under a diabetologist or physician and should provide the report from him during the medical examination. All
cases of impaired glucose tolerance or diabetes on control with diet or approved oral antidiabetic agents for consecutive three months will be endorsed with restriction to multicrew aircraft for one year, and then after restriction will be removed if maintained on satisfactory control. Continued licence will necessitate regular medical monitoring and maintenance of satisfactory blood sugar level, freedom from ketonuria and glycosuria and that cardiovascular, neurological, renal and ophthalmological states remain normal. In medical examination for renewal of licence, he will have urine routine and microscopic examination, 2 hours blood sugar after glucose load and Glycosylated haemoglobin, which should be in acceptable limit. He also should provide a report from his doctor. Once a year they will have Exercise ECG test and fundoscopic examination after pupil dilatation.

Failure of control of diabetes will suspend the licence. Frequent failure to maintain the control of diabetes may be assessed as unfit permanently.

Should diabetes control be obtained only by the use of sulphonylureas or insulin, he will be assessed as 'unfit.'

Diabetes with overt complication, though under control, will be assessed as permanently unfit.

Glucose Tolerance Test: 75 G of glucose loading in a minimum of 250 ml of water is given to a fasting subject who has eaten a normal diet containing not less than 250 G of carbohydrate for the previous few days. Normal activities during those three days and rest for half an hour before test. No further activities until the test is completed.

Fasting 2 hours post glucose load

<table>
<thead>
<tr>
<th>Fasting</th>
<th>2 hours post glucose load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt;120 mg/100ml &lt;6.7 mmol/l</td>
</tr>
<tr>
<td>Impaired glucose tolerance</td>
<td>&lt;120 mg/100ml &lt;6.7 mmol/l</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>&gt;120 mg/100ml &gt;6.7 mmol/l</td>
</tr>
</tbody>
</table>

3.7.4 Thyroid Disorder: Both hyper- and hypo-thyroidism are incompatible with safe performance of duties and continued licensing.

Hyperthyroidism: Once diagnosed and confirmed by thyroid function tests, his licence will be suspended and he will be given appropriate treatment (medical or radio-active iodine or surgical) under the care of an endocrinologist or physician. After maintenance of euthyroid state including normal thyroid function tests for sufficient length of time i.e. not less than 3 months and with good range of eye movements and no diplopia, he will be assessed as medically fit with restriction to operate in multi crew aircrafts for one year and subsequently the restriction will be lifted. The licence will, however, be dependent upon continuing periodic review with thyroid function tests and a medical report of the treating physician throughout the flying career.

Hypothyroidism: Similarly on being diagnosed and confirmed by thyroid function tests, his licence will be suspended. He will be given Thyroxine under the care of an endocrinologist or physician. After maintenance of euthyroid state including normal thyroid function tests for sufficient length of time i.e. not less than 3 months, he will be assessed as medically fit with restriction to operate in multi crew aircrafts for one year and subsequently the restriction will be lifted. The licence will, however, be
dependent upon continuing periodic review with thyroid function tests and a medical report of the treating physician throughout the flying career.

3.7.5 Pregnancy: Though pregnancy is a normal physiological process, it causes major anatomical and physiological disturbances and stress in the system which are associated with increase in incapacitation.

During the first trimester the chances of abortion are there, and till 20 weeks of pregnancy bleeding per vagina and crampy abdominal pain can occur. Pregnancy is to be confirmed as early as possible and thereafter she should have regular anti-natal care. After 26 weeks there can occur gastro-intestinal disturbances due to hormonal change and anatomical displacement. Even fetal movement in the womb can be discomforting and distracting. Hence she should be under monthly obstetrical assessment and only after the clearance from that assessment she should be allowed to continue to privilege of the licence.

She also should be able to consider disqualified herself in presence any discomfort or symptom. They are faintness, dizziness or vertigo, nausea or vomiting, anaemia (Hgb <10 G %), glycosuria or proteinuria, urinary tract infection, vaginal bleeding, abdominal pain, high blood pressure, etc.

In general, it is advisable to suspend the licence in the first trimester and after 26 weeks of pregnancy. Obstetrician’s report is necessary.

The flight crew should be informed of the hazards of low pressure and radiation to the fetus during flight.

4 – 6 weeks after confinement or termination of pregnancy she should have medical examination and assessment to confirm involution has taken place before she resumes her duties.

3.8 MUSCULO-SKELETAL CONDITIONS

Musculo-system is concerned for stability, power, movement and activities. Any significant deficiency can be a threat to flight safety. If any doubt exists, he should be tested in actual aircraft during access and exit, in use of controls during flight, and in emergencies and evacuation under the instructor.

3.8.1 Upper Limb: Good range of joints movement, power and dexterity of upper limbs are required in the flight crew in order that aircraft controls, which are positioned not only in front of but also to the side of, and above the seat, can be reached and used.

Injury of the upper limbs are common in the young age due to accidents and sport activities. Traumatic dislocation of shoulder joint or gleno-humeral joint in a crew will disqualify him from flying. Only after 8 - 10 weeks of reduction and rehabilitation and full activities he may return to full flight status. In these cases recurrent dislocation can often follow. In that case only after surgical repair and full recovery of function he may be assessed as fit initially with restricted operation in multicrew aircrafts and later cleared for solo flights. Clavicular fracture, disruption of acromio-clavicular joint, and rotator cuff injury also ground him temporarily.

Elbow movements, functionally speaking are complimentary to those of shoulder complex and therefore some reduction of elbow flexion and extension in acceptable. But restriction of forearm rotation, whether it is as a result of elbow condition, malunion of old forearm fracture or disruption of radius-ulnar joint is unacceptable.

Ability to perform three basic types of activity of grasping, pinching and hooking are fundamental to normal hand function. These three movements with normal coetaneous sensibility are essential for the
safe manipulation of aircraft controls. Limitation of movement of the joints, painful condition, weakness and lack of sensation due to nerve lesion will suspend the licence. Freedom of symptoms at least for six months is required before it is considered for assessment regarding fitness for flight duty.

3.8.2 Lower Limb: Adequate lower limb function e.g. stability, power and adequate range of movement, is essential for access and exit of the aircraft and safety in flight. Limitation of flexion in hip joint to less than 90 degrees from neutral position from any cause is considered hazardous. Similarly painless range of movement of knee of at least 90 degrees of flexion from fully extended position is required. Almost full range of painless and stable movements of jankle and subtalar joints are required for the safe control of the aircraft. Presence of unbalanced paralysis or weakness and footdrop as a result of the first sacral root involvement due to disc prolapse, can result in an inability to control aircraft safely.

3.8.3 Thoraco-lumar Spines: Low back ache are common symptom in young age group and more so in helicopter pilots. When they have symptom, they should be grounded until they become symptom free. Lumbar disc lesions are common and can be disabling. Those with sciatica due to disc prolapse may have to undergo surgical treatment. Lesser degree of slip disc, grade I and those who had single level spine fusion to control the symptom are considered fit for unrestricted flying role. Higher grades of slip disc are usually disqualifying as they are associated with higher incidence of neurological abnormalities.

3.9 EAR, NOSE & THROAT CONDITIONS

Drum Perforation: A single dry perforation is acceptable. An acute perforation will result in being unfit until hearing and tympanic membrane recovers.

Otitis media: Unfit until fully recovered.

Sinusitis: Unfit until fully recovered

Vertigo: Vertigo or giddiness is a common experience to many and usually it is transient and of no consequence. Persisting and recurring vertigo in incompatible to safe flying. Recurrent vertigo due to paroxysmal vestibular disorder and benign positional vertigo is assessed as permanently unfit as it is recurring symptom. But in case of acute vestibular disturbance where the cause is thought to be due to a transient disorder of the peripheral labyrinth with full recovery with normal neurological assessment, he may be certified fit without restriction. Meniere's Disease is disqualifying, but the diagnosis must be confirmed.

Monoaural hearing or loss of hearing in one year is disqualifying in all classes of licence.

Hearing Aid is not acceptable in all classes of licence.

Post-Surgical conditions: Though chronic or sequelae of the diseases of the ear are disqualifying, after surgical treatment he may be considered if he has regained the function and is observed for certain length of time. Applicant with simple myringotomy will be assessed as fit for all classes without restriction after one month of observation, if the middle ear is dry, tympanic membrane healthy, and hearing is normal and there is no vertigo. After simple mastoidectomy he may be assessed as fit if the ear examination including hearing is normal and wound is healed. Tymanoplasty done for closure perforation of ear drum also improves the hearing. If the hearing is satisfactorily recovered and ear drum is intact and healthy, he may be assessed as fit without restriction in all class of licence after one month. Otosclerosis is a common cause of conductive deafness in adults. But after ear surgery viz. Fenestration operation, Stapes immobilization operation, Stapedectomy with prosthesis implantation, he may be considered for recertification if specialized ENT examination after three months of operation finds satisfactory hearing, patent eustachian tube, no vertigo, no nystagmus and unsteadiness on Valsalva manoeuvre or forceful nose blowing. It will be restricted to fly as or with
another co-pilot or safety pilot for two years observation period. After that period the restriction may be removed.

3.10 EYE CONDITIONS

3.10.1 Poor vision: The applicant having poor vision, worse than 6/60 unaided, can get vision to 6/9 in each eye with high refractory error correction may be considered for recertification. They should wear either contact lens or high-index spectacle lenses.

3.10.2 Diseases of eye and adnexa cause visual or distracting ocular symptoms which in flight crew pose flight safety issues. The presence of active disease of eyes or adnexa will be assessed as unfit temporarily or suspend the licence until the condition has been cured or stabilized and is deemed unlikely to be a safety hazard or recur. He may be assessed as fit initially in dual pilot category.

3.10.3 Cataract: A stationary cataract, or lens opacity, either congenital or acquired, if it does not interfere with the vision, may be assessed as fit in trained flight crew and need not impose restrictions. The cataract which interferes with the vision, or presenile cataract, idiopathic or acquired, requires temporary grounding and ophthalmic intervention. Pseudophakia (intra-ocular lens implanted) is certified fit provided all visual requirements are met, with or without correction, after three months of surgery and refraction had remained stable on two occasions at the interval not earlier than three months.

3.10.4 Symptomless heterophoria is considered no bar for flying status depending on the magnitude of deviation and degree of control, but manifest squint or heterotropia are assessed as unfit for flying.

3.10.5 One eye or monocular vision: A flight crew with one eye or monocular vision is assessed as unfit.
3.10.6 **Corneal and refractory surgery:** Applicant with corneal and refractory surgery will be assessed as fit only if following conditions are met during each medical examination.

- All the eye drops should have been withdrawn not less than six months.
- Visual acuity shall meet the required standards.
- Refraction and visual acuity must remain stable on two consecutive measurements at the difference of three months, six months after surgery.

There should be no ongoing treatment of the eyes.