



The Republic of Sudan

Sudan Civil Aviation Regulations (SUCARs)

FOREWORD

1. Legal Background

Pursuant to Article 33 of the Civil Aviation Act, 2010 regarding the empowerment of the Board of Directors of Civil Aviation to issue and amend Sudan Civil Aviation Regulations (SUCAR) for the approval of the Competent Minister, Sudan Civil Aviation Safety Regulations are issued to ensure compliance with the Convention on International Civil Aviation, signed in Chicago on 7 December 1944 (Chicago Convention) to which the State of Sudan is a Party. The Convention, through its Annexes, provides for the minimum standards to ensure the safety of civil aviation activities and environmental protection throughout the application and implementation of common standards and technical requirements. Sudan Civil Aviation Regulations provide an appropriate and comprehensive framework for the definition and implementation of common technical requirements and administrative procedures in the field of civil aviation. Standards and Recommended Practices (SARPs) contained in ICAO Annexes as well as the technical information in its related publications form a main source in the making of Sudan Civil Aviation Regulations and therefore represent an acceptable guidance in the areas that are not covered by Sudan Civil Aviation Regulations.

- a) An aircraft, other than an aircraft registered in the State of Sudan, shall not fly over or land in the territories of the State of Sudan except under an authorization granted by the Civil Aviation Authority (CAA) on behalf of the Government of the State of Sudan.
- b) An aircraft other than an aircraft registered in the State of Sudan shall not take on-board or discharge any passengers or cargo at any location within the territories of the State of Sudan, being passengers or cargo carried or to be carried for hire or reward, without the permission of the CAA granted for the aircraft in accordance with any conditions and limitations to which such permission may be subjected.
- c) An aircraft shall not fly over or land in the territory of the State of Sudan unless it is registered in:
 - i. The State of Sudan; or
 - ii. An ICAO Contracting State; or
 - iii. Any other State where an agreement/arrangement between the State of Sudan and that State making provisions for over-flight or landing in the territory of the State of Sudan.
- d) In accordance with the provisions of **SUCAR Part 7**, an aircraft registered in the State of Sudan shall comply with the Sudan Civil Aviation Regulations.
- e) An Aircraft, registered outside the State of Sudan shall comply with the Sudan Civil Aviation Regulations while operating to/from or within the territories of the State of Sudan wherever is applicable.
- f) An aircraft registered in the State of Sudan should comply with the regulations of other States that it is overflying wherever is applicable.
- g) Sudan CAA accepts the codes of the Type Certification Authority of the State of Manufacturer and/or Design, for the purpose of issuing or Revalidation of



- Airworthiness Certificates, Airworthiness Directives (ADs), Minimum Equipment List (MEL), and all other related issues in that respect. The Sudan Civil Aviation Authority may impose additional requirements.
- h) Any difference that may exist between SUCAR requirements and corresponding ICAO Annex SARPs. Significant differences shall be published in the National AIP. The procedure for amending the SUCARs and filing of differences with ICAO are contained in paragraph 4 below and detailed information is found in the CAA Rule Making Manual.
- i) An effort has been made for SUCAR requirements to be fully compliant with corresponding ICAO Annexes; however, where an aviation activity for which a SUCAR regulation has not been promulgated is undertaken in the Sudan, the relevant Annex provisions shall be applicable until it is addressed in an amendment of the SUCAR.” Applicability date for SUCARs by users is set at six months after they have been promulgated (30 September 2011).

2. Layout of the SUCAR Document

Sudan Civil Aviation Regulations cover all aspects of aviation activities in the State of Sudan and comprise of the following parts;

Part 0	SUCAR Index
Part 1	Personnel Licensing
Part 2	Rules of the Air
Part 3	Meteorological Service for International Air Navigation
Part 4	Aeronautical Charts
Part 5	Units of Measurement
Part 6	Operation of Aircraft
	<i>Note: Designated as Volumes of SUCAR Part 6 in general; Standards contained in ANR Parts VII, Part VIII, Volumes 2, 3, 4, 5, 7 and ANR Part X, as amended, have been directly adopted as Volumes of SUCAR Part 6.</i>
Part 7	Aircraft Registration or Cancellation
Part 8	Airworthiness of Aircraft and Continuing Airworthiness
	<i>Note: Designated as Volumes of SUCAR Part 8 in general; Standards contained in ANR Parts III, IV, V, VI, and VIII, as amended, have been directly adopted as Volumes of SUCAR Part 8.</i>
Part 9	RESERVED (Facilitation)
Part 10	Aeronautical Telecommunications
Part 11	Air Traffic Services
Part 12	Search and Rescue
Part 13	Aircraft Accident and Incident Investigation
Part 14	Aerodromes
Part 15	Aeronautical Information Services
Part 16	Environmental Protection
Part 17	Aviation Security
Part 18	The Safe Transportation of Dangerous Goods by Air



Each Part of SUCAR, but not necessarily all, is composed of :

- a) An introduction;
- b) Text;
- c) Definitions;
- d) Notes;
- e) Tables and figures;
- f) Appendices; and
- g) Attachments.

3 Rules of construction

In the Parts of these Regulations, unless the context requires otherwise:

1. Words importing the singular include the plural
2. Words importing the plural include the singular, and
3. Words importing the masculine gender include the feminine.
4. “Shall” is used in an imperative sense.
5. “May /should” is used in a permissive sense to state authority or permission to do the act prescribed, and the words “no person may....” Or “a person may not” means that no person is required, authorized or permitted to do the act prescribed, and
6. The word “Includes” means includes but is not limited to.
7. The word “Show” and its derivatives in these regulations have the exact intent as shown in the dictionary.

4 Amendment Rationale and Procedures

The existing Sudan Civil Aviation Regulations will from time to time be amended to reflect the latest updates of ICAO Standards and Recommended Practices (SARPs); it will also be amended to reflect the latest up to date aviation safety related matters detected by the Civil Aviation Authority, the aviation industry service providers or operators, and individuals and authorization holders; amendment may also be generated to ensure safety standardization and to accommodate new initiatives or technologies. The amendment procedure shall be as follows;

1. When the Civil Aviation Authority (**CAA**) receives an amendment to any of the current ICAO Annexes, the same will be routed by the Office of the Director General of Civil Aviation to the Standard and Safety Surveillance Committee (**SSSC**) which in turn will provide a copy to the concerned Directorate for their study and comments within a specified period of time and route the same back to the SSSC for final study and release.
2. When any of the different CAA Directorates requires a change to the applicable SUCAR parts, it will send a letter stating the required change along with its justified reasons for such change where it will then be studied and decided upon by the **SSSC**.
3. Any of the above mentioned change requests would then be prepared in draft form and sent to the concerned Directorate for further study and comments within a specified period of time.
4. All suggested changes will be drafted in the form of notices of proposed amendments and addressed to all concerned including industry representatives for comments prior to final release.



5. Any differences between the new regulations and ICAO standards and recommended practices will be reported and recorded as differences to ICAO and reflected in the Aeronautical Information Publications (**AIP**).
6. Entry into force time frame for any new regulations will be the responsibility of the **SSSC**. The SSSC will also be responsible for coordinating the identification of differences from corresponding ICAO Annexes in coordination with the concerned Directorates.
7. The Office of the Director General is responsible for filing differences with ICAO as soon as new regulations or amendments thereto have been promulgated.
8. All concerned parties will be given a copy of the new amendment and will be requested to update their copy of the regulations including their list of effective pages.
9. Approved amendments or corrigenda of SUCAR or part(s) thereof will be disseminated to the industry through hardcopies (news release circulars directives and other) and softcopies (online or database, Internet address, CD-ROM and other).
10. It is the responsibility of all concerned parties to keep their copy of the regulations up to date.
11. Where applicable, regulations contained in the Air Navigation Regulations (ANRs) that have not been revoked may be enforced should the need arise.
12. The State may release no regulation prior to the formal approval of the Competent Minister as determined in Civil Aviation Act 2010 or the Director General of Civil Aviation on delegation by the Competent Minister.



SUCAR 1 – PERSONNEL LICENSING

CHAPTER 1 – DEFINITIONS

When the following terms are used in the Sudan Civil Aviation Regulation (SUCAR) for Personnel Licensing, they have the following meanings:

1. **Accredited medical conclusion.** The conclusion reached by one or more medical experts acceptable to the Directorate of Personnel Licensing of the Authority for the purposes of the case concerned, in consultation with the Directorate of Flight Safety and Flight Operations or other medical experts as necessary.
2. **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.
3. **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.
4. **Aircraft avionics.** A term designating any electronic device — including its electrical part — for use in an aircraft, including radio, automatic flight control and instrument systems.
5. **Aircraft — category.** Classification of aircraft according to specified basic characteristics, e.g. aeroplane, helicopter, glider, free balloon, etc.
6. **Aircraft certificated for single-pilot operation.** A type of aircraft, which the State has determined, during the certification process, can be operated safely with a minimum crew of one pilot.
7. **Aircraft required to be operated with a co-pilot.** A type of aircraft that is required to be operated with a co-pilot, as specified in the flight manual of the aircraft or by the air operator certificate (AOC) issued by the Authority.
8. **Aircraft — type of.** All aircraft of the same basic design including all modifications thereto except those modifications which result in a change in handling or flight characteristics.
9. **Airmanship.** The consistent use of good judgment and well-developed knowledge, skills and attitudes to accomplish flight objectives.
10. **Airship.** A power-driven lighter-than-air aircraft.
11. **Approved maintenance organization.** An organization approved by the Authority, in accordance with the requirements of ANR Part IV— Aeroplane Maintenance, to perform maintenance of aircraft or parts thereof and operating under supervision approved by that State.



12. **Approved training.** Training conducted under special curricula and supervision approved by the Authority that, in the case of flight crewmembers, is conducted within an approved training organization.
13. **Approved training organization.** An organization approved by the Authority in accordance with the requirements of Article 1.2.15 and the Appendix to perform flight crew training and operating under the supervision of the Authority.
14. **Authority (The).** Refers to the Civil Aviation Authority of the Sudan established under the provisions of Sub-section 3 (1) of the Civil Aviation Act, 2010.
15. **surveillance service.** A term used to indicate a service provided directly by means of an ATS surveillance system.
16. **ATS surveillance system.** A generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft.
17. **Balloon.** A non-power-driven lighter-than-air aircraft. For the purpose of this SUCAR, this refers to free balloons.
18. **Certify as airworthy (to).** To certify that an aircraft or parts thereof comply with current airworthiness requirements after maintenance has been performed on the aircraft or parts thereof.
19. **Commercial air transport operation.** An aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.
20. **Competency.** A combination of skills, knowledge and attitudes required to perform a task to the prescribed standard.
21. **Competency element.** An action that constitutes a task that has a triggering event and a terminating event that clearly defines its limits, and an observable outcome.
22. **Competency unit.** A discrete function consisting of a number of competency elements.
23. **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.
24. **Credit.** Recognition of alternative means or prior qualifications.
25. **Cross-country.** A flight between a point of departure and a point of arrival following a pre-planned route using standard navigation procedures.
26. **Director General.** The Director General of the Civil Aviation Authority appointed by virtue of Sub-section 3 (1) of the Civil Aviation Act, 2010.
27. **Directorate of Personnel Licensing and Training.** The Directorate designated by the Authority as responsible for the licensing of personnel.

Note.— In the provisions of this SUCAR, the Directorate is deemed to have the following responsibilities:

- a) *assessment of an applicant's qualifications to hold a license or rating;*
- b) *issue and endorsement of licenses and ratings;*
- c) *designation and authorization of approved persons;*



- d) approval of training courses;
- e) approval of the use of flight simulation training devices and authorization for their use in gaining the experience or in demonstrating the skill required for the issue of a license or rating; and
- f) validation of licenses issued by other Contracting States.

28. **Dual instruction time.** Flight time during which a person is receiving flight instruction from a properly authorized pilot on board the aircraft.
29. **Error.** An action or inaction by an operational person that leads to deviations from organizational or the operational person's intentions or expectations.
30. **Error management.** The process of detecting and responding to errors with countermeasures that reduce or eliminate the consequences of errors and mitigate the probability of further errors or undesired states.

Note.— See Attachment C to Chapter 3 of the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868) and Circular 314 — Threat and Error Management (TEM) in Air Traffic Control* for a description of undesired states.

31. **Flight crewmember.** A licensed crewmember charged with duties essential to the operation of an aircraft during a flight duty period.
32. **Flight plan.** Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.
33. **Flight procedures trainer.** See Flight simulation training device.
34. **Flight simulation training device.** Any one of the following three types of apparatus in which flight conditions are simulated on the ground:
- a) A *flight simulator*, which provides an accurate representation of the flight deck of a particular aircraft type to the extent that the mechanical, electrical, electronic, etc. aircraft systems control functions, the normal environment of flight crewmembers, and the performance and flight characteristics of that type of aircraft are realistically simulated;
 - b) A *flight procedures trainer*, which provides a realistic flight deck environment, and which simulates instrument responses, simple control functions of mechanical, electrical, electronic, etc. aircraft systems, and the performance and flight characteristics of aircraft of a particular class;
 - c) A *basic instrument flight trainer*, which is equipped with appropriate instruments, and which simulates the flight deck environment of an aircraft in flight in instrument flight conditions.

35. **Flight simulator.** See Flight simulation training device.

36. **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.

37. **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.



38. **Glider.** A non-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.
39. **Glider flight time.** The total time occupied in flight, whether being towed or not, from the moment the glider first moves for the purpose of taking off until the moment it comes to rest at the end of the flight.
40. **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.
41. **Human performance.** Human capabilities and limitations, which have an impact on the safety and efficiency of aeronautical operations.
42. **Instrument flight time.** Time during which a pilot is piloting an aircraft solely by reference to instruments and without external reference points.
43. **Instrument ground time.** Time during which a pilot is practicing, on the ground, simulated instrument flight in a flight simulation training device approved by the Directorate of Personnel Licensing and Training.
44. **Instrument time.** Instrument flight time or instrument ground time.
45. **Likely.** In the context of the medical provisions in Chapter 10 of this SUCAR, *likely* means with a probability of occurring that is unacceptable to the medical assessor.
46. **Maintenance.** The performance of tasks required to ensure the continuing airworthiness of an aircraft, including any one or combination of overhaul, inspection, replacement, defect rectification, and the embodiment of a modification or repair.
47. **Medical Assessment.** The evidence issued by the State that the holder of a license issued by the Authority meets specific requirements of medical fitness.
48. **Medical assessor.** A person(physician), appointed by the Authority, qualified and experienced in the practice of aviation medicine and competent in evaluating and assessing medical conditions of flight safety significance. The Medical Assessor is required to maintain his/her professional knowledge during his/her appointment as such and his/her main duty and responsibility, *inter alia*, is the evaluation of medical reports submitted to the Directorate of Personnel Licensing and Training by designated medical examiners.
49. **Medical examiner.** A physician with training in aviation medicine and practical knowledge and experience of the aviation environment, who is designated by the Authority to conduct medical examinations of fitness of applicants for licenses or ratings for which medical requirements are prescribed.
50. **Night.** The hours between sunset and sunrise.
51. **Operational personnel.** Personnel involved in aviation operations who are in a position to report safety information to the Authority or its Directorates, as applicable. Such personnel include, but are not limited to, flight crews, air traffic controllers, aeronautical station operators, maintenance technicians, cabin crews, flight dispatchers and aerodrome ground personnel



52. **Organization.** The International Civil Aviation Organization established by the Convention on International Civil Aviation (Chicago Convention), December 1944
53. **Performance criteria.** Simple, evaluative statements on the required outcome of the competency element and a description of the criteria used to judge whether the required level of performance has been achieved.
54. **Pilot (to).** To manipulate the flight controls of an aircraft during flight time.
55. **Pilot-in-command.** The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.
56. **Pilot-in-command under supervision.** Co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command, in accordance with a method of supervision acceptable to the Authority.
57. **Powered-lift.** A heavier-than-air aircraft capable of vertical takeoff, vertical landing, and low-speed flight, which depends principally on engine-driven lift devices or engine thrust for the lift during these flight regimes and on non-rotating aerofoil(s) for lift during horizontal flight.
58. **Problematic use of substances.** The use of one or more psycho-active 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.
59. **Psychoactive substances.** Alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psycho-stimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded.
60. **Quality system.** Documented organizational procedures and policies; internal audit of those policies and procedures; management review and recommendation for quality improvement.
61. **Rated air traffic controller.** An air traffic controller holding a license and valid ratings appropriate to the privileges to be exercised.
62. **Rating.** An authorization entered on or associated with a license and forming part thereof, stating special conditions, privileges or limitations pertaining to such license.
63. **Rendering (a license) valid.** The action taken by the Authority in accepting a license issued by any other Contracting State as the equivalent of licenses issued by the State.
64. **Safety management system.** A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures, established by relevant aviation service providers.
65. **Sign a maintenance release (to).** To certify that maintenance work has been completed satisfactorily in accordance with the applicable Standards of airworthiness, by issuing the maintenance release referred to in SUCAR PART



8 (Aircraft Airworthiness).

66. **Significant.** In the context of the medical provisions in Chapter 8 of this SUCAR, *significant* means to a degree or of a nature that is likely to jeopardize flight safety.
67. **Solo flight time.** Flight time during which a student pilot is the sole occupant of an aircraft.
68. **State (The).** Unless otherwise mentioned, *The State, in this SUCAR means The Republic of Sudan.*
69. **State safety programme.** An integrated set of safety-related activities established by the State, aimed at improving safety including regulations, policies, procedures, etc., to ensure the safety, regularity and efficiency of aviation.
70. **Threat.** Events or errors that occur beyond the influence of an operational person, which may increase operational complexity and must be managed to maintain the margin of safety.
71. **Threat management.** The process of detecting and responding to threats with countermeasures that reduce or eliminate the consequences of threats and mitigate the probability of errors or undesired states.



CHAPTER 2 GENERAL RULES CONCERNING LICENSES

1.2.1 *Licensing Authority*

1.2.1.1 Sudan Civil Aviation Authority is the designated and empowered authority for the following:-

- i) Assessment of an applicant's qualifications to hold a License, rating, or certificate;
- ii) Issue, renewal and endorsement of Licenses, ratings and certificates;
- iii) Designation and authorization of approved persons;
- iv) Approval of training organization and training programs;
- v) Approval of the use of synthetic flight trainers and authorization for their use in gaining the experience or in demonstrating the skill required for the issue of a License or rating; and
- vi) Renewal or revalidation of License, certificate or approvals;
- vii) Rendering a License valid issued by other contracting states;
- viii) Suspension, withdrawal, or revoke of License or certificate;

1.2.1.2 The personnel Licenses and certificates issued are in conformance with ICAO standards and recommended practices set in Annex 1 and with reference to the related ICAO documents.

1.2.1.3 Requirements and procedures for the issuance and re-validation of personnel Licenses and certificates are as detailed in CAA Licensing and certification requirements & procedures manual.

1.2.1.4 The designated and authorized persons to sign each part of the License or certificate are as per Licensing Procedures and Requirement Manual.

1.2.1.5 The Licensing authority shall suspend, withdraw or revoke the Licenses, certificates or ratings issued under this part, if the holder of any of the Licenses, certificates or ratings did not comply or violated any regulation that governs the issuance of the Licenses, certificates or rating, or the maintenance of its validity as per regulation set in Part 6 of Sudan Civil Aviation Regulations (SUCAR).

1.2.2 *Article 83 bis*

The Republic of Sudan has ratified Article 83 bis to the Convention on International Civil Aviation (Chicago Convention), in regard to the delegation of responsibilities of State of Registry to the State of Operator in instances where aircraft are leased, chartered, or interchanged in particular without crew, with any ICAO member State that has ratified this article (Part 25, Chapter 1 refers).

1.2.3 *Licenses and certificates issued*

Conforming to International Standards and Recommended Practices (SARPs) contained in Annex 1 to the Convention on International Civil Aviation (Chicago Convention, 1944), personnel licensing regulations in the



Sudan are established for licensing the following personnel:

- a) *Flight crew*
 - private pilot: aeroplane, helicopter or powered-lift;
 - commercial pilot: aeroplane, helicopter or powered-lift;
 - multi-crew pilot: aeroplane;
 - airline transport pilot: aeroplane, helicopter or powered-lift
 - glider pilot (currently not-issued);
 - free balloon pilot (currently not issued);
 - flight navigator;
 - flight engineer.
- b) *Other personnel*
 - aircraft maintenance (technician/engineer/mechanic);
 - student air traffic controller
 - air traffic controller;
 - flight operations officer/flight dispatcher;
 - cabin crew;
 - aeronautical station (radio) operator.

1.2.4 Licenses based on military qualifications

1.2.4.1 Pilots qualified in the Sudan Defence Forces (Air Force), may apply to the Director General for a civilian pilot license and rating prescribed in this SUCAR. Civilian licenses to military personnel will be issued on a case-by-case basis taking into consideration the individual applicants experience and knowledge of the civil aviation regulations as follows:

1.2.4.1.1 an applicant for a *Private Pilot License* shall have:

- a) passed that part of the theoretical knowledge examination which deals with air law;
- b) successfully completed the skills test; and
- c) complied with all other requirements prescribed in this SUCAR for the issuance of a private pilot license.

1.2.4.1.2 an applicant for a *Commercial Pilot License* or an *Airline Transport Pilot License* shall have:

- a) passed that part of the theoretical knowledge examination which deals with air law;
- b) successfully completed the skills test; and
- c) complied with all other requirements prescribed in this SUCAR for the issuance of a commercial pilot license or an airline transport pilot license, as the case may be.

1.2.4.2 The application shall be accompanied by:

- a) proof of:
 - i. the identity of the applicant
 - ii. the age of the applicant
 - iii. employment of the applicant in the Sudan Defence Force, and
 - iv. valid and appropriate medical license;
- b) a copy of the summary of the logbook of the applicant;
- c) proof that the applicant has passed the theoretical examination or part thereof, as the case may be;
- d) the skill test report conducted by a designated examiner holding a valid designation;



- e) two recent passport size photographs of the applicant; and
 - f) the appropriate fee as prescribed.
- 1.2.4.3 The Director General shall credit the experience gained by an applicant serving in the Sudan Defence Forces, towards the issuance of an appropriate pilot license and rating.
- 1.2.5 *Licenses and Certificates issued to Non-Sudanese Pilots, Flight Engineers and Authorized Examiners.***
Licenses and certificates are issued to a person who is not a Sudanese citizen under this part only when he is employed by a firm holding an AOC issued by Sudan CAA and required for the operation of a Sudanese registered civil aircraft or is required to conduct training and tests for pilots and flight engineers who are holding a Sudan CAA License.
- 1.2.6 *Authority to act as a flight crewmember***
A person shall not act as a flight crewmember of a Sudanese registered aircraft unless he/she holds a valid license issued by the Authority or by any other ICAO Contracting State and rendered valid by the Authority, showing compliance with the specifications of this SUCAR and appropriate to the duties to be performed by that person. A person so licensed by the Authority is required to carry the license whenever exercising privileges given by the license.
- 1.2.7 *Validating licenses issued by other Contracting States***
- 1.2.7.1 Licenses issued by other Contracting States may be validated by the Authority as equivalent to similar licenses issued by the Authority or with limited authorization to specific privileges, the authorization shall specify the privileges of the license which are to be accepted as its equivalent.
 - 1.2.7.2 Validation authorization issued by the Authority should always be carried with the former license accepting it as the equivalent of the latter.
 - 1.2.7.3 The validity of the authorization shall not extend beyond the period of validity of the original license issued by other Contracting State.
 - 1.2.7.4 The authorization issued by the Authority ceases to be valid if the license upon which it was issued is revoked or suspended.
 - 1.2.7.5 Validation of licenses for use in commercial air transport operations may only be issued after the Authority has satisfied itself and confirmed the validity of the other Contracting State's license.
 - 1.2.7.6 Procedures for the validation of foreign licenses are contained in the *Personnel Licensing Manual*.
- 1.2.8 *Privileges of the holder of a license***
- 1.2.8.1 A person issued a license or issued a validation authorization by the Authority is not permitted to exercise privileges other than those granted by the license or the validation authorization.
 - 1.2.8.2 A person holding a license issued or validated by the Authority may be prosecuted and penalized according to the law in the event that he/she exercises privileges that have not been granted by the license or the validation authorization.



1.2.9 Authority to act as a holder of a License or certificate (Other than a flight crewmember)

A person shall not exercise the privileges of a license, certificate or rating issued by Sudan CAA, unless it is held valid and in possession and showing compliance with the specification of Sudan CAA Licensing rules and appropriate to the duties to be performed by that person.

1.2.10 Medical fitness

- 1.2.10.1 Class 1, Class 2, or Class 3 Medical Assessments, as applicable, are issued to the appropriate applicants for a license in the Sudan.
- 1.2.10.2 An applicant for a Sudanese license shall, when applicable, hold a Medical Assessment issued by the Authority or its representatives in accordance with the provisions of Chapter 8 of this SUCAR. No license holder, required to have a Medical License as an integral part of his/her license can the privileges of the license unless he holds a valid Medical License to be carried with the actual license.
- 1.2.10.3 As part of its State safety programme the Authority applies basic safety management principles to the medical assessment process of Sudanese license holders, that as a minimum includes:
- a) routine analysis of in-flight incapacitation events and medical findings during medical assessments to identify areas of increased medical risk; and
 - b) continuous re-evaluation of the medical assessment process to concentrate on identified areas of increased medical risk.
- 1.2.10.4 The period of validity of a Medical Assessment shall begin on the day the medical examination is performed. The duration of the period of validity shall be in accordance with the provisions of paragraph 1.2.5.6.
- 1.2.10.5 The period of validity of a Medical Assessment may be extended, at the discretion of the Authority, for a maximum of 45 days.
- 1.2.10.6 Except as provided in paragraph 1.2.6.6, flight crewmembers or air traffic controllers shall not exercise the privileges of their license unless they hold a current Medical Assessment appropriate to the license, issued by the Authority in accordance with the provisions of Chapter 8 of this SUCAR.
- 1.2.10.7 The Authority shall designate medical examiners, qualified and licensed in the practice of medicine and who shall have received training in aviation medicine prior to their designation.
- 1.2.10.8 Designated medical examiners shall ensure that they have received refresher training within two years and shall demonstrate adequate competency in aviation medicine to the Medical Assessor of the Authority.
- 1.2.10.9 Medical examiners shall be provided with a practical knowledge and experience of the conditions in which the holders of licenses and ratings carry out their duties. This could include flight experience, simulator experience, on-site observation or any other hands-on experience deemed to meet this requirement by the Authority.
- 1.2.10.10 The continuing competence of designated medical examiners shall be evaluated periodically by the medical Assessor.
- 1.2.10.11 Applicants for licenses or ratings for which medical fitness is prescribed shall sign and furnish to the designated medical examiner a declaration stating whether they have previously undergone such an examination and, if so, the date, place and result of the last examination. They shall indicate to



- the examiner whether a Medical Assessment has previously been refused, revoked or suspended and, if so, the reason for such refusal, revocation or suspension.
- 1.2.10.12 Any false declaration to a designated medical examiner made by an applicant for a license or rating shall be reported to the Authority for such action as may be considered appropriate.
- 1.2.10.13 Having completed the medical examination of the applicant in accordance with Chapter 8 of this SUCAR, the designated medical examiner shall coordinate the results of the examination and submit a signed report to the Authority, in accordance with established requirements, detailing the results of the examination and evaluating the findings with regard to the medical fitness of the applicant.
- 1.2.10.14 If the medical report is submitted to the Authority in electronic format, adequate identification of the designated examiner shall be established through a previous arrangement made between the designated examiner and the Authority.
- 1.2.10.15 If the medical examination is carried out by two or more designated medical examiners, one of the designated examiners shall be appointed to be responsible for coordinating the results of the examination, evaluating the findings with regard to medical fitness, and signing the report.
- 1.2.10.16 The Medical Assessor of the Authority shall evaluate medical examination reports submitted by the designated medical examiners.
- 1.2.10.17 Designated medical examiners are required to submit sufficient information to the Authority to enable it to undertake Medical Assessment audits and ensure that medical examiners meet applicable standards for good medical practice and aeromedical risk assessment. (Guidance on aeromedical risk assessment is contained in the Manual of Civil Aviation Medicine (Doc 8984), which should be made available to all designated medical examiners).
- 1.2.10.18 If the medical Standards prescribed in Chapter 8 of this SUCAR for a particular license are not met, a Medical license shall not be issued or renewed unless the following conditions are fulfilled:
- a) accredited medical conclusion indicates that in special circumstances the applicant's failure to meet any requirement, whether numerical or otherwise, is such that exercise of the privileges of the license applied for is not likely to jeopardize flight safety;
 - b) relevant ability, skill and experience of the applicant and operational conditions have been given due consideration; and
 - c) the license is endorsed with any special limitation or limitations when the safe performance of the license holder's duties is dependent on compliance with such limitation or limitations.
- 1.2.10.19 Designated medical examiners, the Medical Assessor and any other staff of the Authority or the Medical examiner who has the possibility of accessing medical records shall respect medical confidentiality at all times.
- 1.2.10.20 All medical reports and records shall be securely held with accessibility restricted to authorized personnel.
- 1.2.10.21 When justified by operational considerations, the medical assessor of the Authority shall determine to what extent pertinent medical information may be presented to relevant officials of the Authority or State.
- 1.2.11 *Validity of licenses***



- 1.2.11.1 A holder of a license issued by the Authority shall not exercise the privileges granted by the license, or by related ratings, unless the holder maintains competency and meets the requirements for recent experience established by the Authority.
- 1.2.11.2 Maintenance of competency and recent experience for pilot licenses and ratings contained in this SUCAR should be based on a systematic approach to accident prevention and should include a risk assessment process and analysis of current operations, including accident and incident data appropriate to the State.
- 1.2.11.3 The maintenance of competency of flight crewmembers, engaged in commercial air transport operations, shall be satisfactorily established by demonstration of skill during proficiency flight checks completed in accordance with PART 8 Sub-Part 3 – Aircraft Airworthiness.
- 1.2.11.4 Record of maintenance of competency shall be maintained by the Operator as well as be recorded in the flight crewmember’s personal logbook or license.
- 1.2.11.5 Demonstration of continuing competency for crewmembers engaged in commercial air transport may be conducted in flight simulation training devices approved by the Authority.
- 1.2.11.6 Except as provided in 1.2.11.7), 1.2.11.8), 1.2.11.9), 1.2.11.10), and 1.2.11.11), a Medical Assessment issued in accordance with Section 1.2.10 shall be valid from the date of the medical examination for a period not greater than:

Type of license held	Period of validity
Private pilot license — aeroplane, air-ship, helicopter and powered-lift	60 months
Commercial pilot license — aeroplane, airship, helicopter and powered-lift	12 months
Multi-crew pilot license — aeroplane	12 months
Airline transport pilot license — aeroplane, helicopter and powered-lift	12 months
Glider pilot license	60 months
Free balloon pilot license	60 months
Flight navigator license	12 months
Flight engineer license	12 months
Air traffic controller license	24 months
Cabin crew license	24 months

- 1.2.11.7 The period of validity of a Medical Assessment may be reduced when clinically indicated.
- 1.2.11.8 When the holders of airline transport pilot licenses — aeroplane, helicopter and powered-lift, and commercial pilot licenses — aeroplane, airship, helicopter and powered-lift, who are engaged in single-crew commercial air transport operations carrying passengers, have passed their 40th birthday, the period of validity specified in 1.2.11(6) shall be reduced to six months.
- 1.2.11.9 When the holders of multi-crew pilot licenses — aeroplane, who are engaged in commercial air transport operations, have passed their 60th



birthday, the period of validity specified in 1.2.11(6) shall be reduced to six months.

1.2.11.10 When the holders of private pilot licenses — aeroplane, airship, helicopter and powered-lift, free balloon pilot licenses, glider pilot licenses and air traffic controller licenses have passed their 40th birthday, the period of validity specified in 1.2.11(6) shall be reduced to 24 months.

1.2.11.11 When the holders of private pilot licenses — aeroplane, airship, helicopter and powered-lift, free balloon pilot licenses, glider pilot licenses and air traffic controller licenses have passed their 50th birthday, the period of validity specified in 1.2.11(6) should be further reduced to 12 months.

1.2.12 *Circumstances in which a medical examination may be deferred.*

1.2.12.1 As an exception, the Authority may defer the prescribed re-examination of a license holder operating in an area distant from designated medical examination facilities.

1.2.12.2 In any case, such deferment shall only be made for:

- a) a single period of six months in the case of a flight crewmember of an aircraft engaged in non-commercial operations;
- b) two consecutive periods each of three months in the case of a flight crewmember of an aircraft engaged in commercial operations provided that in each case a favorable medical report is obtained after examination by a designated medical examiner of the area concerned, or, in cases where such a designated medical examiner is not available, by a physician legally qualified to practice medicine in that area. The medical examiner or the physician conducting the examination shall, immediately, send a report of the medical examination to the Authority;
- c) in the case of a private pilot, a single period not exceeding 24 months where the medical examination is carried out by an examiner designated by the Authority in which the applicant is temporarily located. The medical examiner or the physician conducting the examination shall, immediately, send a report of the medical examination to the Authority.

1.2.13 *Decrease in medical fitness*

1.2.13.1 Holders of licenses provided for in this SUCAR shall not exercise the privileges of their licenses and related ratings at any time when they are aware of any decrease in their medical fitness which might render them unable to safely and properly exercise these privileges.

1.2.13.2 Guidelines on medical conditions that may be relevant to flight safety and require the license holder to seek clarification or guidance are contained in the Personnel Licensing Procedures Manual (Information and guidelines are available in the Manual of Civil Aviation Medicine (Doc 8984)).

1.2.13.3 Sudanese license holders or holders of validation authorization shall not exercise the privileges of their licenses and related ratings during any period in which their medical fitness has, from any cause, decreased to an extent that would have prevented issue or renewal of their Medical Assessment.

1.2.13.4 Sudanese license holders must inform the licensing authority of confirmed pregnancy or any other decrease in medical fitness of duration of more than 20 days or which requires continued treatment with prescribed medication



or which has required hospital treatment.

1.2.14 Use of psychoactive substances

- 1.2.14.1 Holders of licenses provided for in this SUCAR shall not exercise the privileges of their licenses and related ratings while under the influence of any psychoactive substance which might render them unable to safely and properly exercise these privileges.
- 1.2.14.2 Holders of licenses provided for in this SUCAR shall not engage in any problematic use of substances.
- 1.2.14.3 The Authority and/or the relevant operator shall identify all license holders who engage in any kind of problematic use of substances and shall remove them from their safety-critical functions. Return to the safety-critical functions may be considered after successful treatment or, in cases where no treatment is necessary, after cessation of the problematic use of substances and upon determination that the person's continued performance of the function is unlikely to jeopardize safety (*Guidance is contained in the ICAO Manual on Prevention of Problematic Use of Substances in the Aviation Workplace (Doc 9654).*)

1.2.15 Approved training and approved training organization

Note.— The qualifications required for the issue of personnel licenses can be more readily and speedily acquired by applicants who undergo closely supervised, systematic and continuous courses of training, conforming to a planned syllabus or curriculum. Provision has accordingly been made for some reduction in the experience requirements for the issue of certain licenses and ratings prescribed in these Standards and Recommended Practices, in respect of an applicant who has satisfactorily completed a course of approved training.

- 1.2.15.1 The Authority shall approve training and training organizations upon the applicant demonstrating compliance with the requirements contained in Appendices A1 and A2 of this SUCAR (Reference, ICAO Doc 9841).
- 1.2.15.2 Training approved by the Authority shall provide a level of competency at least equal to that provided by the minimum experience requirements for personnel not receiving such approved training.

1.2.16 Language proficiency

- 1.2.16.1 Aeroplane, airship, helicopter and powered-lift pilots and those flight navigators who are required to use the radio telephone aboard an aircraft shall demonstrate the ability to speak and understand the English language to the level specified in the language proficiency requirements in Appendix A1, Attachment E of this SUCAR.
- 1.2.16.2 Air traffic controllers and aeronautical station operators shall demonstrate the ability to speak and understand the English language.
- 1.2.16.3 Flight engineers, and glider and free balloon pilots should have the ability to speak and understand the language used for radiotelephony communications.
- 1.2.16.4 Aeroplane, airship, helicopter and powered-lift pilots, flight navigators required to use the radiotelephone aboard an aircraft, air traffic controllers and aeronautical station operators should demonstrate the ability to speak and understand the English to the level specified in the language proficiency



requirements in Appendix A, Attachment E of this SUCAR.

- 1.2.16.5 The language proficiency of aeroplane, airship, helicopter and powered-lift pilots, air traffic controllers and aeronautical station operators who demonstrate proficiency below the Expert Level (Level 6) shall be formally evaluated at intervals in accordance with an individual's demonstrated proficiency level.
- 1.2.16.6 The language proficiency of aeroplane, airship, helicopter and powered-lift pilots, flight navigators required to use the radiotelephone aboard an aircraft, air traffic controllers and aeronautical station operators who demonstrate proficiency below the Expert Level (Level 6) shall be formally evaluated at intervals in accordance with an individual's demonstrated proficiency level, as follows:
- a) those demonstrating language proficiency at the Operational Level (Level 4) shall be evaluated at least once every three years; and
 - b) those demonstrating language proficiency at the Extended Level (Level 5) shall be evaluated at least once every six years.

Note 1.— Formal evaluation is not required for applicants who demonstrate expert language proficiency, e.g. native and very proficient non-native speakers with a dialect or accent intelligible to the international aeronautical community.

Note 2.— The provisions of Paragraph 1.2.16 refer to ICAO Annex 10, Volume II, Chapter 5, whereby the language used for radiotelephony communications may be the language normally used by the station on the ground or English. In practice, therefore, there will be situations whereby flight crewmembers will only need to speak the language normally used by the station on the ground.

1.2.17 Duration of Pilot, Flight Engineer License

Any Pilot or Flight Engineer License issued under this part has a ten years expiration limit.

Note.— Licensees who are employed by Sudanese organizations under contract shall surrender their licenses to the CAA upon termination of contract.

1.2.18 Surrender, Suspension or Revocation of License, Certificate or Authority

- 1.2.18.1 Any flight crew License, Authority or Certificate issued under this part shall cease to be effective if it is surrendered, suspended or revoked;
- 1.2.18.2 The holder of any License or certificate, issued under this Part that are suspended or revoked shall return such License or certificate to the CAA within 7 days of notification.
- 1.2.18.3 Unless the order of revocation provides otherwise, a person whose License/ authority /certificate is revoked, may not apply for any License, certificate or authority before the elapse of one year from the date of revocation.

1.2.19 Replacement of Lost or Destroyed License / Certificate / Authority

An application for the replacement of a lost or destroyed License or certificate issued under this part shall be made in writing to the CAA in accordance with the established requirements in the Licensing Procedures and Requirement Manual.

**1.2.20 Suspension or revocation of any License or certificate**

- 1.2.20.1 The CAA shall suspend or revoke any License or certificate where the holder of the License or certificate may harm public interest or jeopardize the national security of the State of Sudan.
- 1.2.20.2 The CAA shall suspend or revoke any License or certificate if the holder of the License or certificate is involved in any illegal act or violated the regulations of the State of Sudan or any other foreign States while exercising the privileges of his License or certificate.

Note.— For detailed requirements for the issuance of License or certificates refer to CAA Licensing and certification requirements & procedures manual.



CHAPTER 3 LICENSES AND RATINGS FOR PILOTS

1.3.1 *General rules concerning pilot licenses and ratings*

1.3.1.1 *General licensing specifications*

1.3.1.1.1 A person shall not act either as pilot-in-command or as co-pilot of an aircraft in any of the following categories unless that person is the holder of a pilot license issued in accordance with the provisions of this Chapter:

- aeroplane
- free balloon (currently not issued)
- glider (currently not issued)
- helicopter
- powered-lift.

1.3.1.1.2 The category of aircraft shall be included in the title of the license itself, or endorsed as a category rating on the license.

1.3.1.1.2.1 When the holder of a pilot license seeks a license for an additional category of aircraft, the Personnel Licensing Directorate shall either:

- a) issue the license holder with an additional pilot license for that category of aircraft; or
- b) endorse the original license with the new category rating, subject to the conditions of 1.3.1.2.

Note.— The requirements for category ratings are given in terms of licensing specifications for pilots and at levels appropriate to the privileges to be granted to the license holder.

1.3.1.1.3 An applicant shall, before being issued with any pilot license or rating, meet such requirements in respect of age, knowledge, experience, flight instruction, skill and medical fitness, as are specified for that license or rating.

1.3.1.1.3.1 An applicant for any pilot license or rating shall demonstrate, in a manner determined by the Personnel Licensing Directorate of the Sudan CAA, such requirements for knowledge and skill as are specified for that license or rating.

1.3.1.2 *Category ratings*

1.3.1.2.1 Category ratings established in Sudan are for categories of aircraft listed in 1.3.1.1.1.

1.3.1.2.2 Category ratings shall be included in the title of the license itself.

1.3.1.2.3 Any additional category rating endorsed on a pilot license shall indicate the level of licensing privileges at which the category rating is granted.

1.3.1.2.4 The holder of a pilot license seeking additional category ratings shall meet the requirements of this SUCAR appropriate to the privileges for which the category rating is sought.

1.3.1.3 *Class and type ratings*

1.3.1.3.1 Class ratings are established for aeroplanes certificated for single-pilot operation and shall comprise:

- a) single-engine, land;



- b) single-engine, sea;
- c) multi-engine, land;
- d) multi-engine, sea.

Note.— *The provisions of this paragraph do not preclude the establishment of other class ratings within this basic structure.*

1.3.1.3.1.1 Sudan has established class rating for those helicopters and powered-lifts certificated for single-pilot operations and which have comparable handling, performance and other characteristics comprising single-engine land and multi-engine land.

1.3.1.3.2 Type ratings are established for:

- a) aircraft certificated for operation with a minimum crew of at least two pilots;
- b) helicopters and powered-lifts certificated for single-pilot operation except where a class rating has been issued under 1.3.1.3.1.1; and
- c) any aircraft whenever considered necessary by the Personnel Licensing Directorate.

Note 1.— *Where a common type rating is established, it shall be only for aircraft with similar characteristics in terms of operating procedures, systems and handling.*

Note 2.— *Requirements for class and type ratings for gliders and free balloons have not been determined.*

1.3.1.3.3 When an applicant demonstrates skill and knowledge for the initial issue of a pilot license, the category and the ratings appropriate to the class or type of aircraft used in the demonstration shall be entered on the license.

1.3.1.4 *Circumstances in which class and type ratings are required*

1.3.1.4.1 Sudanese pilot license holders shall not act either as pilot-in-command or as co-pilot of an aeroplane, a helicopter or a powered-lift unless the holder has received authorization as follows:

- a) the appropriate class rating specified in 1.3.1.3.1; or
- b) a type rating when required in accordance with the provisions of 1.3.1.3.2.

1.3.1.4.1.1 When a type rating is issued limiting the privileges to act as co-pilot, or limiting the privileges to act as pilot only during the cruise phase of the flight, such limitation shall be endorsed on the rating.

1.3.1.4.2 For the purpose of training, testing, or specific special purpose non-revenue, non-passenger carrying flights, the Personnel Licensing Directorate shall provide the license holder special authorization in writing in place of issuing the class or type rating in accordance with 1.3.1.4.1. This authorization shall be limited in validity to the time needed to complete the specific flight.

1.3.1.5 *Requirements for the issue of class and type ratings*

1.3.1.5.1 *Class rating*

The applicant shall have demonstrated a degree of skill appropriate to the



license in an aircraft of the class for which the rating is sought.

1.3.1.5.2 *Type rating as required by 1.3.1.3.2 a)*

The applicant shall have:

- a) gained, under appropriate supervision, experience in the applicable type of aircraft and/or flight simulator in the following:
 - normal flight procedures and manoeuvres during all phases of flight;
 - abnormal and emergency procedures and manoeuvres in the event of failures and malfunctions of equipment, such as powerplant, systems and airframe;
 - where applicable, Instrument procedures, including instrument approach, missed approach and landing procedures under normal, abnormal and emergency conditions, including simulated engine failure;
 - procedures for crew incapacitation and crew coordination including allocation of pilot tasks; crew cooperation and use of checklists;

Note.— Attention is called to 1.3.1.8.1 on the qualifications required for pilots giving flight training.

- b) demonstrated the skill and knowledge required for the safe operation of the applicable type of aircraft, relevant to the duties of a pilot-in-command or a co-pilot as applicable; and
- c) demonstrated, at the airline transport pilot license level, an extent of knowledge determined by the Personnel Licensing Directorate on the basis of the requirements specified in 1.3.6.1.2.

Note.— See the Manual of Procedures for Establishment and Management of a State's Personnel Licensing System (Doc 9379) for guidance of a general nature on cross-crew qualification and cross-credit.

1.3.1.5.3 *Type rating as required by 1.3.1.3.2 b) and c)*

The applicant shall have demonstrated the skill and knowledge required for the safe operation of the applicable type of aircraft, relevant to the licensing requirements and piloting functions of the applicant.

1.3.1.6 *Use of a flight simulation training device for acquisition of experience and demonstration of skill*

The use of a flight simulation training device for acquiring the experience or performing any manoeuvre required during the demonstration of skill for the issue of a license or rating shall be approved by the Personnel Licensing Directorate of the SCAA, which shall ensure that the flight simulation training device used is appropriate to the task.

1.3.1.7 *Circumstances in which an instrument rating is required*

A Sudanese pilot license holder shall not act either as pilot-in-command or as co-pilot of an aircraft under instrument flight rules (IFR) unless such holder has received proper authorization from the Personnel Licensing



Directorate. Proper authorization shall comprise an instrument rating appropriate to the aircraft category.

Note.— The instrument rating is included in the airline transport pilot license — aeroplane or powered-lift category, multi-crew pilot license, and commercial pilot license — air-ship category. The provisions of 1.3.1.7 do not preclude the issue of a license having the instrument rating as an integral part thereof.

1.3.1.8 *Circumstances in which authorization to conduct instruction is required*

1.3.1.8.1 A Contracting State, having issued a pilot license, shall not permit the holder thereof to carry out flight instruction required for the issue of a pilot license or rating, unless such holder has received proper authorization from such Contracting State. Proper authorization shall comprise:

- a) a flight instructor rating on the holder's license; or
- b) the authority to act as an agent of an approved organization authorized by the Personnel Licensing Directorate to carry out flight instruction; or
- c) a specific authorization granted by the Contracting State which issued the license.

1.3.1.8.2 No person shall carry out instruction on a flight simulation training device required for the issue of a pilot license or rating unless such person holds or has held an appropriate license or has appropriate flight training and flight experience and has received proper authorization from Personnel Licensing Directorate.

1.3.1.9 *Crediting of flight time*

1.3.1.9.1 A student pilot or the holder of a pilot license shall be entitled to be credited in full with all solo, dual instruction and pilot-in-command flight time towards the total flight time required for the initial issue of a pilot license or the issue of a higher grade of pilot license.

1.3.1.9.2 The holder of a pilot license, when acting as co-pilot at a pilot station of an aircraft certificated for operation by a single pilot but required by the SCAA to be operated with a co-pilot, shall be entitled to be credited with not more than 50 per cent of the co-pilot flight time towards the total flight time required for a higher grade of pilot license. Flight time be credited in full towards the total flight time required if the aircraft is equipped to be operated by a co-pilot and the aircraft is operated in a multi-crew operation.

1.3.1.9.3 The holder of a pilot license, when acting as co-pilot at a pilot station of an aircraft certificated to be operated with a co-pilot, shall be entitled to be credited in full with this flight time towards the total flight time required for a higher grade of pilot license.

1.3.1.9.4 The holder of a pilot license, when acting as pilot-in-command under supervision, shall be entitled to be credited in full with this flight time towards the total flight time required for a higher grade of pilot license.

1.3.1.10 *Limitation of privileges of pilots who have attained their 60th birthday and curtailment of privileges of pilots who have attained their 65th birthday*



1.3.1.10.1 Sudanese license holders, who have attained their 60th birthday or, in the case of operations with more than one pilot where the other pilot is younger than 60 years of age, have attained their 65th birthday, are not permitted to act as pilot-in-command of an aircraft engaged in international commercial air transport operations

1.3.1.10.2 Sudanese license holders, who have attained their 65th birthday, are not permitted to act as co-pilot of an aircraft engaged in international commercial air transport operations.

Note.— Attention is drawn to 1.2.11.9 on the validity period of Medical Assessments for pilots over the age of 60 who are engaged in commercial air transport operations.

1.3.2 Student pilot

1.3.2.1 A student pilot shall meet requirements prescribed by the Sudan Civil Aviation Authority. In all cases, the privileges granted to a student pilot shall ensure that student pilots do not constitute a hazard to air navigation.

1.3.2.2 A student pilot shall not fly solo unless under the supervision of, or with the authority of, an authorized flight instructor.

1.3.2.2.1 A student pilot shall not fly solo in an aircraft on an international flight unless by special or general arrangement between the Sudan Civil Aviation Authority and the relevant Contracting States concerned.

1.3.2.3 *Medical fitness*

A student pilot shall not fly solo unless that student pilot holds a current Class 2 Medical Assessment.

1.3.3 Private pilot license

1.3.3.1 *General requirements for the issue of the license appropriate to the aeroplane, helicopter and powered-lift categories*

1.3.3.1.1 *Age*

The applicant shall be not less than 17 years of age.

1.3.3.1.2 *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a private pilot license and appropriate to the category of aircraft intended to be included in the license, in at least the following subjects:

Air law

- a) rules and regulations relevant to the holder of a private pilot license; rules of the air; altimeter setting procedures; appropriate air traffic services practices and procedures;

Aircraft general knowledge for aeroplanes, helicopters and powered-lifts

- b) principles of operation and functioning of powerplants, systems and instruments;
- c) operating limitations of the relevant category of aircraft and powerplants; relevant operational information from the flight manual



- or other appropriate document;
- d) for helicopters and powered-lifts, transmission (power trains) where applicable;

Flight performance, planning and loading

- e) effects of loading and mass distribution on flight characteristics; mass and balance calculations;
- f) use and practical application of takeoff, landing and other performance data;
- g) pre-flight and en-route flight planning appropriate to private operations under VFR; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; position reporting procedures; altimeter setting procedures; operations in areas of high-density traffic;

Human performance

- h) human performance including principles of threat and error management;

Note.— *Guidance material to design training programmes on human performance, including threat and error management, can be found in the Human Factors Training Manual (Doc 9683).*

Meteorology

- i) application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry; hazardous weather conditions;

Navigation

- j) practical aspects of air navigation and dead-reckoning techniques; use of aeronautical charts;

Operational procedures

- k) application of threat and error management to operational performance;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

- l) altimeter setting procedures;
- m) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
- n) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards;
- o) in the case of helicopters, and if applicable, powered-lifts, settling with power; ground resonance; retreating blade stall; dynamic rollover and other operating hazards; safety procedures, associated



with flight in VMC;

Principles of flight

p) principles of flight;

Radiotelephony

r) communication procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure.

1.3.3.1.3 *Skill*

The applicant shall have demonstrated the ability to perform as pilot-in-command of an aircraft within the appropriate category of aircraft, the procedures and manoeuvres described in 1.3.3.3.2 or 1.3.3.4.2.1 or 1.3.3.5.2 or 1.3.3.6.2 with a degree of competency appropriate to the privileges granted to the holder of a private pilot license, and to:

a) recognize and manage threats and errors;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

b) operate the aircraft within its limitations;

c) complete all manoeuvres with smoothness and accuracy;

d) exercise good judgment and airmanship;

e) apply aeronautical knowledge; and

f) maintain control of the aircraft at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

1.3.3.1.4 *Medical fitness*

The applicant shall hold a current Class 2 Medical Assessment.

Note.— *Attention is called to 1.3.7.1.3 on the medical fitness requirements for private pilot license holders seeking an instrument rating.*

1.3.3.2 ***Privileges of the holder of the license and the conditions to be observed in exercising such privileges***

1.3.3.2.1 Subject to compliance with the requirements specified in 1.2.11, 1.2.13, 1.2.14.1, 1.2.16 and 1.3.1, the privileges of the holder of a private pilot license shall be to act, but not for remuneration, as pilot-in-command or co-pilot of aircraft within the appropriate aircraft category engaged in non-revenue flights.

1.3.3.2.2 Before exercising the privileges at night, the license holder shall have received dual instruction in aircraft within the appropriate category of aircraft in night flying, including takeoff, landing and navigation.

1.3.3.3 ***Specific requirements for the issue of the aeroplane category rating***

1.3.3.3.1 *Experience*

1.3.3.3.1.1 The applicant shall have completed not less than 40 hours of flight time,



or 35 hours if completed during a course of approved training, as a pilot of aeroplanes appropriate to the class rating sought. The Personnel Licensing Directorate shall determine whether experience as a pilot under instruction in a flight simulation training device is acceptable as part of the total flight time of 40 hours or 35 hours, as the case may be. Credit for such experience shall be limited to a maximum of 5 hours.

1.3.3.3.1.1 When the applicant has flight time as a pilot of aircraft in other categories, the Personnel Licensing Directorate shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 1.3.3.3.1.1 can be reduced accordingly.

1.3.3.3.1.2 The applicant shall have completed in aeroplanes not less than 10 hours of solo flight time appropriate to the class rating sought, under the supervision of an authorized flight instructor, including 5 hours of solo cross-country flight time with at least one cross-country flight totalling not less than 270 km (150 NM) in the course of which full-stop landings at two different aerodromes shall be made.

1.3.3.3.2 *Flight instruction*

The applicant shall have received dual instruction in aeroplanes appropriate to the class rating sought, from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the private pilot:

- a) recognize and manage threats and errors;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

- b) pre-flight operations, including mass and balance determination, aeroplane inspection and servicing;
- c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- d) control of the aeroplane by external visual reference;
- e) flight at critically slow airspeeds; recognition of, and recovery from, incipient and full stalls;
- f) flight at critically high airspeeds; recognition of, and recovery from, spiral dives;
- g) normal and crosswind takeoffs and landings;
- h) maximum performance (short field and obstacle clearance) takeoffs; short-field landings;
- i) flight by reference solely to instruments, including the completion of a level 180° turn;
- j) cross-country flying using visual reference, dead reckoning and, where available, radio navigation aids;
- k) emergency operations, including simulated aeroplane equipment malfunctions;
- l) operations to, from and transiting controlled aerodromes, compliance



- with air traffic services procedures; and
- m) communication procedures and phraseology.

Note.— *The instrument experience specified in 1.3.3.3.2.1 i) and the night flying dual instruction in 1.3.3.2.2 do not entitle the holder of a private pilot license to pilot aeroplanes under IFR.*

1.3.3.4 **Specific requirements for the issue of the helicopter category rating**

1.3.3.4.1 *Experience*

1.3.3.4.1.1 The applicant shall have completed not less than 40 hours of flight time, or 35 hours if completed during a course of approved training, as a pilot of helicopters. The Personnel Licensing Directorate shall determine whether experience as a pilot under instruction in a flight simulation training device is acceptable as part of the total flight time of 40 hours or 35 hours, as the case may be. Credit for such experience shall be limited to a maximum of 5 hours.

1.3.3.4.1.1.1 When the applicant has flight time as a pilot of aircraft in other categories, the Personnel Licensing Directorate shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 1.3.3.4.1.1 can be reduced accordingly.

1.3.3.4.1.2 The applicant shall have completed in helicopters not less than 10 hours of solo flight time under the supervision of an authorized flight instructor, including 5 hours of solo cross-country flight time with at least one cross-country flight totalling not less than 180 km (100 NM) in the course of which landings at two different points shall be made.

1.3.3.4.2 *Flight instruction*

1.3.3.4.2.1 The applicant shall have received not less than 20 hours of dual instruction time in helicopters from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the private pilot:

- a) recognize and manage threats and errors;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

- b) pre-flight operations, including mass and balance determination, helicopter inspection and servicing;
- c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- d) control of the helicopter by external visual reference;
- e) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm;
- f) ground manoeuvring and run-ups; hovering; takeoffs and landings — normal, out of wind and sloping ground;
- g) takeoffs and landings with minimum necessary power; maximum performance takeoff and landing techniques; restricted site



- operations; quick stops;
- h) cross-country flying using visual reference, dead reckoning and, where available, radio navigation aids, including a flight of at least one hour;
- i) emergency operations, including simulated helicopter equipment malfunctions;
- j) autorotative approach;
- k) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures; and
- l) communication procedures and phraseology.

1.3.3.4.2.2 The applicant shall receive dual instrument flight instruction from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in flight by reference solely to instruments, including the completion of a level 180° turn, in a suitably instrumented helicopter.

Note.— *The instrument experience specified in 1.3.3.4.2.2 and the night flying dual instruction in 1.3.3.2.2 do not entitle the holder of a private pilot license to pilot helicopters under IFR.*

1.3.3.5 *Specific requirements for the issue of the powered-lift category rating*

1.3.3.5.1 *Experience*

1.3.3.5.1.1 An applicant shall complete not less than 40 hours of flight time as a pilot of powered-lifts. The Personnel Licensing Directorate may consider experience as a pilot under instruction in a flight simulation-training device as part of the total flight time of 40 hours.

1.3.3.5.1.1.1 When the applicant has flight time as a pilot of aircraft in other categories, the Personnel Licensing Directorate may accept such experience and reduce the flight time requirements of 1.3.3.5.1.1 accordingly.

1.3.3.5.1.2 The applicant shall complete in powered-lifts not less than 10 hours of solo flight time under the supervision of an authorized flight instructor, including 5 hours of solo cross-country flight time with at least one cross-country flight totaling not less than 270 km (150 NM) in the course of which full-stop landings at two different aerodromes shall be made.

1.3.3.5.2 *Flight instruction*

1.3.3.5.2.1 The applicant shall receive not less than 20 hours of dual instruction time in powered-lifts from an authorized flight instructor. The instructor should ensure that the applicant has operational experience in at least the following areas to the level of performance required for the private pilot:

- a) recognize and manage threats and errors;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

- b) pre-flight operations, including mass and balance determination,



- powered-lift inspection and servicing;
- c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- d) control of the powered-lift by external visual reference;
- e) ground manoeuvring and run-ups; hover and rolling takeoffs and climb-out; hover and rolling approach and landings — normal, out of wind and sloping ground;
- f) takeoffs and landings with minimum necessary power; maximum performance takeoff and landing techniques; restricted site operations; quick stops;
- g) flight by reference solely to instruments, including the completion of a level 180° turn;
- h) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm;
- i) cross-country flying using visual reference, dead reckoning and, where available, radio navigation aids, including a flight of at least one hour;
- j) emergency operations, including simulated powered-lift equipment malfunctions; power of reversion to auto-rotation and autorotative approach, where applicable; transmission and interconnect driveshaft failure, where applicable;
- k) operations to from and transiting controlled aerodromes, compliance with air traffic services procedures; and
- l) communication procedures and phraseology.

Note.— *The instrument experience specified in 1.3.3.5.2.1 g) and the night flying dual instruction specified in 1.3.3.2.2 do not entitle the holder of a private pilot license to pilot powered-lifts under IFR.*

1.3.4 Commercial pilot license

1.3.4.1 *General requirements for the issue of the license appropriate to the aeroplane, helicopter and powered-lift categories*

1.3.4.1.1 *Age*

The applicant shall be not less than 18 years of age.

1.3.4.1.2 *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a commercial pilot license and appropriate to the category of aircraft intended to be included in the license, in at least the following subjects:

Air law

- a) rules and regulations relevant to the holder of a commercial pilot license; rules of the air; appropriate air traffic services practices and procedures;



Aircraft general knowledge for aeroplanes, helicopters and powered-lifts

- b) principles of operation and functioning of powerplants, systems and instruments;
- c) operating limitations of the relevant category of aircraft and powerplants; relevant operational information from the flight manual or other appropriate document;
- d) use and serviceability checks of equipment and systems of appropriate aircraft;
- e) maintenance procedures for airframes, systems and powerplants of appropriate aircraft;
- f) for helicopters and powered-lifts, transmission (power trains) where applicable;
- g) for airships, physical properties and practical application of gases;

Flight performance, planning and loading

- h) effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;
- i) use and practical application of takeoff, landing and other performance data;
- j) pre-flight and en-route flight planning appropriate to commercial operations under VFR; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; altimeter setting procedures;
- k) in the case of airships, helicopters and powered-lifts, effects of external loading on handling;

Human performance

- l) human performance including principles of threat and error management;

Note.— *Guidance material to design training programmes on human performance, including threat and error management, can be found in the Human Factors Training Manual (Doc 9683).*

Meteorology

- m) interpretation and application of aeronautical meteorological reports, charts and forecasts; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;
- n) aeronautical meteorology; climatology of relevant areas in respect of the elements having an effect upon aviation; the movement of pressure systems, the structure of fronts, and the origin and characteristics of significant weather phenomena which affect takeoff, en-route and landing conditions;
- o) causes, recognition and effects of icing; frontal zone penetration procedures; hazardous weather avoidance;

Navigation

- p) air navigation, including the use of aeronautical charts, instruments and navigation aids; an understanding of the principles and characteristics of appropriate navigation systems; operation of



- airborne equipment;
- q) in the case of airships:
 - i) use, limitation and serviceability of avionics and instruments necessary for control and navigation;
 - ii) use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight, identification of radio navigation aids;
 - iii) principles and characteristics of self-contained and external referenced navigation systems, operation of airborne equipment;

Operational procedures

- r) application of threat and error management to operational performance;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

- s) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
- t) altimeter setting procedures;
- u) appropriate precautionary and emergency procedures;
- v) operational procedures for carriage of freight; potential hazards associated with dangerous goods;
- w) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aircraft;
- x) in the case of helicopters, and if applicable, powered- lifts, settling with power; ground resonance; retreating blade stall; dynamic rollover and other operating hazards; safety procedures, associated with flight in VMC;

Principles of flight

- y) principles of flight;

Radiotelephony

- z) communication procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure.

1.3.4.1.3 *Skill*

The applicant shall have demonstrated the ability to perform as pilot-in-command of an aircraft within the appropriate category of aircraft, the procedures and manoeuvres described in 1.3.4.3.2 or 1.3.4.4.2 or 1.3.4.5.2 or 1.3.4.6.2 with a degree of competency appropriate to the privileges granted to the holder of a commercial pilot license, and to:

- a) recognize and manage threats and errors;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II,*



Chapter2, of the Human Factors Training Manual (Doc 9683).

- b) operate the aircraft within its limitations;
- c) complete all manoeuvres with smoothness and accuracy;
- d) exercise good judgment and airmanship;
- e) apply aeronautical knowledge; and
- f) maintain control of the aircraft at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

1.3.4.1.4 *Medical fitness*

The applicant shall hold a current Class 1 Medical Assessment.

1.3.4.2 ***Privileges of the holder of the license and the conditions to be observed***

1.3.4.2.1 Subject to compliance with the requirements specified in 1.2.11, 1.2.13, 1.2.14.1, 1.2.16 and 1.3.1, the privileges of the holder of a commercial pilot license shall be:

- a) to exercise all the privileges of the holder of a private pilot license in an aircraft within the appropriate aircraft category;
- b) to act as pilot-in-command of an aircraft within the appropriate aircraft category engaged in operations other than commercial air transportation;
- c) to act as pilot-in-command, in commercial air transportation, of an aircraft within the appropriate aircraft category and certificated for single-pilot operation; and
- d) to act as co-pilot of an aircraft within the appropriate aircraft category required to be operated with a co-pilot;

1.3.4.2.2 Before exercising the privileges at night, the license holder shall have received dual instruction in aircraft within the appropriate category of aircraft in night flying, including takeoff, landing and navigation.

Note.— Certain privileges of the license are curtailed by 1.3.1.10 for license holders when they attain their 60th and 65th birthdays.

1.3.4.3 ***Specific requirements for the issue of the aeroplane category rating***

1.3.4.3.1 *Experience*

1.3.4.3.1.1 The applicant shall have completed not less than 200 hours of flight time, or 150 hours if completed during a course of approved training, as a pilot of aeroplanes. The Personnel Licensing Directorate shall determine whether experience as a pilot under instruction in a flight simulation training device is acceptable as part of the total flight time of 200 hours or 150 hours, as the case may be. Credit for such experience shall be limited to a maximum of 10 hours.

1.3.4.3.1.1 The applicant shall have completed in aeroplanes not less than:

- a) 100 hours as pilot-in-command or, in the case of a course of approved training, 70 hours as pilot-in-command;
- b) 20 hours of cross-country flight time as pilot-in-command including a cross-country flight totalling not less than 540 km (300 NM) in the course of which full-stop landings at two different aerodromes shall be made;



- c) 10 hours of instrument instruction time of which not more than 5 hours may be instrument ground time; and
- d) if the privileges of the license are to be exercised at night, 5 hours of night flight time including 5 takeoffs and 5 landings as pilot-in-command.

1.3.4.3.1.2 When the applicant has flight time as a pilot of aircraft in other categories, the Personnel Licensing Directorate shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 1.3.4.3.1.1 can be reduced accordingly.

1.3.4.3.2 *Flight instruction*

The applicant shall have received dual instruction in aeroplanes appropriate to the class and/or type rating, sought from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the commercial pilot:

- a) recognize and manage threats and errors;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

- b) pre-flight operations, including mass and balance determination, aeroplane inspection and servicing;
- c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- d) control of the aeroplane by external visual reference;
- e) flight at critically slow airspeeds; spin avoidance; recognition of, and recovery from, incipient and full stalls;
- f) flight with asymmetrical power for multi-engine class or type ratings;
- g) flight at critically high airspeeds; recognition of, and recovery from, spiral dives;
- h) normal and crosswind takeoffs and landings;
- i) maximum performance (short field and obstacle clearance) takeoffs; short-field landings;
- j) basic flight manoeuvres and recovery from unusual attitudes by reference solely to basic flight instruments;
- k) cross-country flying using visual reference, dead reckoning and radio navigation aids; diversion procedures;
- l) abnormal and emergency procedures and manoeuvres including simulated aeroplane equipment malfunctions;
- m) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures; and
- n) communication procedures and phraseology.

Note.— *The instrument experience specified in 1.3.4.3.1.1.1 c) and 1.3.4.3.2 j) and the night flying experience and dual instruction specified in 1.3.4.3.1.1.1 d) and 1.3.4.2.2 do not entitle the holder of a commercial*



pilot license to pilot aeroplanes under IFR.

1.3.4.4 *Specific requirements for the issue of the helicopter category rating*

1.3.4.4.1 *Experience*

1.3.4.4.1.1 The applicant shall have completed not less than 150 hours of flight time, or 100 hours if completed during a course of approved training, as a pilot of helicopters. The Personnel Licensing Directorate shall determine whether experience as a pilot under instruction in a flight simulation training device is acceptable as part of the total flight time of 150 hours or 100 hours, as the case may be. Credit for such experience shall be limited to a maximum of 10 hours.

1.3.4.4.1.1.1 The applicant shall have completed in helicopters not less than:

- a) 35 hours as pilot-in-command;
- b) 10 hours of cross-country flight time as pilot-in-command including a cross-country flight in the course of which landings at two different points shall be made;
- c) 10 hours of instrument instruction time of which not more than 5 hours may be instrument ground time; and
- d) if the privileges of the license are to be exercised at night, 5 hours of night flight time including 5 takeoffs and 5 landing patterns as pilot-in-command.

1.3.4.4.1.2 When the applicant has flight time as a pilot of aircraft in other categories, the Personnel Licensing Directorate shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 1.3.4.4.1.1) can be reduced accordingly.

1.3.4.4.2 *Flight instruction*

The applicant shall have received dual instruction in helicopters from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the commercial pilot:

- a) recognize and manage threats and errors;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

- b) pre-flight operations, including mass and balance determination, helicopter inspection and servicing;
- c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- d) control of the helicopter by external visual reference;
- e) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm;
- f) ground manoeuvring and run-ups; hovering; takeoffs and landings — normal, out of wind and sloping ground; steep approaches;
- g) takeoffs and landings with minimum necessary power; maximum



- performance takeoff and landing techniques; restricted site operations; quick stops;
- h) hovering out of ground effect; operations with external load, if applicable; flight at high altitude;
 - i) basic flight manoeuvres and recovery from unusual attitudes by reference solely to basic flight instruments;
 - j) cross-country flying using visual reference, dead reckoning and radio navigation aids; diversion procedures;
 - k) abnormal and emergency procedures, including simulated helicopter equipment malfunctions, autorotative approach and landing;
 - l) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures; and
 - m) communication procedures and phraseology.

Note.— The instrument experience specified in 1.3.4.4.1.1.1 c) and 1.3.4.4.2 i) and the night flying experience and dual instruction specified in 1.3.4.4.1.1.1 d) and 1.3.4.2.2 do not entitle the holder of a commercial pilot license to pilot helicopters under IFR.

1.3.4.5 *Specific requirements for the issue of the powered-lift category rating*

1.3.4.5.1 *Experience*

1.3.4.5.1.1 The applicant shall complete not less than 200 hours of flight time in a powered- lift, or 150 hours if completed during a course of approved training, as a pilot of aircraft. The Personnel Licensing Directorate may accept whether experience as a pilot under instruction in a flight simulation training device as part of the total flight time of 200 hours or 150 hours, as the case may be.

1.3.4.5.1.2 The applicant shall complete in a powered-lift not less than:

- a) 50 hours as pilot-in-command;
- b) 10 hours of cross-country flying as pilot-in-command including a cross-country flight totalling not less than 540 km (300 NM) in the course of which full stop landings at two different aerodromes should be made;
- c) 10 hours of instrument instruction of which not more than 5 hours may be instrument ground time; and
- d) if the privileges of the license are to be exercised at night, 5 hours of night flight time including 5 takeoffs and landings as pilot-in-command.

1.3.4.5.1.3 When the applicant has flight time as a pilot of aircraft in other categories, the Personnel Licensing Directorate may accept such experience and reduce the flight time requirements of 1.3.4.5.1.1) accordingly.

1.3.4.5.2 *Flight instruction*

The applicant shall receive dual instruction time in a powered-lift from an authorized flight instructor. The instructor should ensure that the applicant has operational experience in at least the following areas to the level of performance required for the commercial pilot license:

- a) recognize and manage threats and errors;



Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

- b) pre-flight operations, including mass and balance determination, powered-lift inspection and servicing;
- c) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- d) control of the powered-lift by external visual reference;
- e) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm;
- f) ground manoeuvring and run-ups; hover and rolling takeoffs and climb-out; hover and rolling approach and landings — normal, out of wind and sloping ground; steep approaches;
- g) takeoffs and landings with minimum necessary power; maximum performance takeoff and landing techniques; restricted site operations; quick stops;
- h) hovering out of ground effect; operations with external load, if applicable; flight at high altitude;
- i) basic flight manoeuvres and recovery from unusual attitudes by reference solely to basic flight instruments;
- j) cross-country flying using visual reference, dead reckoning and, where available, radio navigation aids, including a flight of at least one hour;
- k) emergency operations, including simulated powered-lift equipment malfunctions; power of reconversion to auto-rotation and autorotative approach, where applicable; transmission and interconnect driveshaft failure, where applicable;
- l) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures; and
- m) communication procedures and phraseology.

Note.— *The instrument experience specified in 1.3.4.5.1.2 c) and 1.3.4.5.2 i) and the night flying experience and dual instruction specified in 1.3.4.5.1.2 d) and 1.3.4.2.2 do not entitle the holder of a commercial pilot license to pilot powered-lifts under IFR.*

1.3.5 **Multi-crew pilot license appropriate to the aeroplane category**

1.3.5.1 **General requirements for the issue of the license**

1.3.5.1.1 *Age*

The applicant shall be not less than 18 years of age.

1.3.5.1.2 *Knowledge*

The applicant shall have met the requirements specified in 1.3.6.1.2 for the airline transport pilot license appropriate to the aeroplane category in an approved training course.



1.3.5.1.3 *Skill*

1.3.5.1.3.1 The applicant shall have demonstrated the skills required for fulfilling all the competency units specified in Appendix 3 as pilot flying and pilot not flying, to the level required to perform as a co-pilot of turbine-powered aero- planes certificated for operation with a minimum crew of at least two pilots under VFR and IFR, and to:

- a) recognize and manage threats and errors;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

- b) smoothly and accurately, manually control the aero- plane within its limitations at all times, such that the successful outcome of a procedure or manoeuvre is assured;
- c) operate the aeroplane in the mode of automation appropriate to the phase of flight and to maintain awareness of the active mode of automation;
- d) perform, in an accurate manner, normal, abnormal and emergency procedures in all phases of flight; and
- e) communicate effectively with other flight crew members and demonstrate the ability to effectively perform procedures for crew incapacitation, crew coordination, including allocation of pilot tasks, crew cooperation, adherence to standard operating procedures (SOPs) and use of checklists.

1.3.5.1.3.2 Progress in acquiring the skills specified in 1.3.5.1.3.1 shall be continuously assessed.

1.3.5.1.4 *Medical fitness*

The applicant shall hold a current Class 1 medical assessment.

1.3.5.2 *Privileges of the holder of the license and the conditions to be observed*

1.3.5.2.1 Subject to compliance with the requirements specified in 1.2.11, 1.2.13, 1.2.14.1, 1.2.16 and 1.3.1, the privileges of the holder of a multi-crew pilot license shall be:

- a) to exercise all the privileges of the holder of a private pilot license in the aeroplane category provided the requirements of paragraph 1.3.3.3 have been met;
- b) to exercise the privileges of the instrument rating in a multi-crew operation; and
- c) to act as co-pilot of an aeroplane required to be operated with a co-pilot.

1.3.5.2.2 Before exercising the privileges of the instrument rating in a single-pilot operation in aeroplanes, the license holder shall have demonstrated an ability to act as pilot-in- command in a single-pilot operation exercised by reference solely to instruments and shall have met the skill requirement specified in 2.7.1.2 appropriate to the aeroplane category.

1.3.5.2.3 Before exercising the privileges of a commercial pilot license in a single-



pilot operation in aeroplanes, the license holder shall have:

- a) completed in aeroplanes 70 hours, either as pilot-in-command, or made up of not less than 10 hours as pilot-in-command and the necessary additional flight time as pilot-in-command under supervision;
- b) completed 20 hours of cross-country flight time as pilot-in-command, or made up of not less than 10 hours as pilot-in-command and 10 hours as pilot-in-command under supervision, including a cross-country flight totalling not less than 540 km (300 NM) in the course of which full-stop landings at two different aerodromes shall be made; and
- c) met the requirements for the commercial pilot license specified in 1.3.4.1.2, 1.3.4.1.3, 1.3.4.3.1.1 (with the exception of 1.3.4.3.1.1.1 a)) and 1.3.4.3.2 appropriate to the aeroplane category.

Note 1.— When a Contracting State grants single-pilot operation privileges to the holder of a multi-crew pilot license, it can document the privileges through an endorsement of the multi-crew pilot license or through the issuance of a commercial pilot license in the aeroplane category.

Note 2.— Certain privileges of the license are curtailed by 1.3.1.10 for license holders when they attain their 65th birthday.

1.3.5.3 *Experience*

- 1.3.5.3.1 The applicant shall complete in an approved training course not less than 240 hours as pilot flying and pilot not flying of actual and simulated flight.
- 1.3.5.3.2 Flight experience in actual flight shall include at least the experience requirements at 1.3.3.3.1, upset recovery training, night flying and flight by reference solely to instruments.
- 1.3.5.3.3 In addition to meeting the provisions of 1.3.5.3.2, the applicant shall have gained, in a turbine-powered aeroplane certificated for operation with a minimum crew of at least two pilots, or in a flight simulation training device approved for that purpose by the Personnel Licensing Directorate in accordance with Appendix 3, paragraph 4, the experience necessary to achieve the advanced level of competency defined in Appendix 3.

1.3.5.4 *Flight instruction*

- 1.3.5.4.1 The applicant shall complete a course of approved training covering the experience requirements specified in 1.3.5.3.
- 1.3.5.4.2 The applicant shall receive dual flight instruction in all the competency units specified in Appendix 3, to the level required for the issue of the multi-crew pilot license, to include the competency units required to pilot under instrument flight rules.

1.3.6 **Airline transport pilot license**

1.3.6.1 *General requirements for the issue of the license appropriate to the aeroplane, helicopter and powered-lift categories*

1.3.6.1.1 *Age*



The applicant shall be not less than 21 years of age.

1.3.6.1.2 *Knowledge*

1.3.6.1.2.1 The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of an airline transport pilot license and appropriate to the category of aircraft intended to be included in the license, in at least the following subjects:

Air law

- a) rules and regulations relevant to the holder of an airline transport pilot license; rules of the air; appropriate air traffic services practices and procedures;

Aircraft general knowledge for aeroplanes, helicopters and powered-lifts

- b) general characteristics and limitations of electrical, hydraulic, pressurization and other aircraft systems; flight control systems, including autopilot and stability augmentation;
- c) principles of operation, handling procedures and operating limitations of aircraft powerplants; effects of atmospheric conditions on engine performance; relevant operational information from the flight manual or other appropriate document;
- d) operating procedures and limitations of the relevant category of aircraft; effects of atmospheric conditions on aircraft performance in accordance with the relevant operational information from the flight manual;
- e) use and serviceability checks of equipment and systems of appropriate aircraft;
- f) flight instruments; compasses, turning and acceleration errors; gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments and electronic display units;
- g) maintenance procedures for airframes, systems and powerplants of appropriate aircraft;
- h) for helicopters and powered-lifts, transmission (power trains) where applicable;

Flight performance, planning and loading

- i) effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;
- j) use and practical application of takeoff, landing and other performance data, including procedures for cruise control;
- k) pre-flight and en-route operational flight planning; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; altimeter setting procedures;
- l) in the case of helicopters and powered-lifts, effects of external loading on handling;

Human performance

- m) human performance including principles of threat and error management;



Note.— *Guidance material to design training programmes on human performance, including threat and error management, can be found in the Human Factors Training Manual (Doc 9683).*

Meteorology

- n) interpretation and application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;
- o) aeronautical meteorology; climatology of relevant areas in respect of the elements having an effect upon aviation; the movement of pressure systems; the structure of fronts, and the origin and characteristics of significant weather phenomena which affect takeoff, en-route and landing conditions;
- p) causes, recognition and effects of icing; frontal zone penetration procedures; hazardous weather avoidance;
- q) in the case of aeroplanes and powered-lifts, practical high altitude meteorology, including interpretation and use of weather reports, charts and forecasts; jetstreams;

Navigation

- r) air navigation, including the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for long-range flights;
- s) use, limitation and serviceability of avionics and instruments necessary for the control and navigation of aircraft;
- t) use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids;
- u) principles and characteristics of self-contained and external-referenced navigation systems; operation of airborne equipment;

Operational procedures

- v) application of threat and error management to operational performance;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

- w) interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
- x) precautionary and emergency procedures; safety practices;
- y) operational procedures for carriage of freight and dangerous goods;
- z) requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aircraft;
- aa) in the case of helicopters, and if applicable, powered-lifts, settling



with power; ground resonance; retreating blade stall; dynamic rollover and other operating hazards; safety procedures, associated with flight in VMC;

Principles of flight

bb) principles of flight;

Radiotelephony

cc) communication procedures and phraseology; action to be taken in case of communication failure.

1.3.6.1.2.2 In addition to the above subjects, the applicant for an airline transport pilot license applicable to the aeroplane or powered-lift category shall have met the knowledge requirements for the instrument rating at 1.3.7.1.1.

1.3.6.1.3 *Skill*

1.3.6.1.3.1 The applicant shall have demonstrated the ability to perform, as pilot-in-command of an aircraft within the appropriate category required to be operated with a co-pilot, the following procedures and manoeuvres:

- a) pre-flight procedures, including the preparation of the operational flight plan and filing of the air traffic services flight plan;
- b) normal flight procedures and manoeuvres during all phases of flight;
- c) abnormal and emergency procedures and manoeuvres related to failures and malfunctions of equipment, such as powerplant, systems and airframe;
- d) procedures for crew incapacitation and crew coordination, including allocation of pilot tasks, crew cooperation and use of checklists; and
- e) in the case of aeroplanes and powered-lifts, procedures and manoeuvres for instrument flight described in 1.3.7.4.1 a) to d), including simulated engine failure.

1.3.6.1.3.1.1 In the case of an aeroplane, the applicant shall have demonstrated the ability to perform the procedures and manoeuvres described in 1.3.6.1.3.1 as pilot-in-command of a multi-engined aeroplane.

1.3.6.1.3.1.2 The applicant shall have demonstrated the ability to perform the procedures and manoeuvres described in 1.3.6.1.3 with a degree of competency appropriate to the privileges granted to the holder of an airline transport pilot license, and to:

- a) recognize and manage threats and errors;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

- b) smoothly and accurately, manually control the aircraft within its limitations at all times, such that the successful outcome of a procedure or manoeuvre is assured;
- c) operate the aircraft in the mode of automation appropriate to the phase of flight and to maintain awareness of the active mode of automation;
- d) perform, in an accurate manner, normal, abnormal and emergency procedures in all phases of flight;



- e) exercise good judgment and airmanship, to include structured decision making and the maintenance of situational awareness; and
- f) communicate effectively with other flight crew members and demonstrate the ability to effectively perform procedures for crew incapacitation, crew coordination, including allocation of pilot tasks, crew cooperation, adherence to standard operating procedures (SOPs) and use of checklists.

1.3.6.1.4 *Medical fitness*

The applicant shall hold a current Class 1 Medical Assessment.

1.3.6.2 *Privileges of the holder of the license and the conditions to be observed*

1.3.6.2.1 Subject to compliance with the requirements specified in 1.2.11, 1.2.13, 1.2.14.1, 1.2.16 and 1.3.1, the privileges of the holder of an airline transport pilot license shall be:

- a) to exercise all the privileges of the holder of a private and commercial pilot license in an aircraft within the appropriate aircraft category and, in the case of a license for the aeroplane and powered-lift categories, of the instrument rating; and
- b) to act as pilot-in-command, in commercial air transportation, of an aircraft within the appropriate category and certificated for operation with more than one pilot.

1.3.6.2.2 When the holder of an airline transport pilot license in the aeroplane category has previously held only a multi-crew pilot license, the privileges of the license shall be limited to multi-crew operations unless the holder has met the requirements established in 1.3.5.2.1 a), 1.3.5.2.2 and 1.3.5.2.3 as appropriate. Any limitation of privileges shall be endorsed on the license.

Note.— *Certain privileges of the license are curtailed by 1.3.1.10 for license holders when they attain their 60th and 65th birthdays.*

1.3.6.3 *Specific requirements for the issue of the aeroplane category rating*

1.3.6.3.1 *Experience*

1.3.6.3.1.1 The applicant shall have completed not less than 1 500 hours of flight time as a pilot of aeroplanes. The Personnel Licensing Directorate shall determine whether experience as a pilot under instruction in a flight simulation training device is acceptable as part of the total flight time of 1 500 hours. Credit for such experience shall be limited to a maximum of 100 hours, of which not more than 25 hours shall have been acquired in a flight procedure trainer or a basic instrument flight trainer.

1.3.6.3.1.1.1 The applicant shall have completed in aeroplanes not less than:

- a) 500 hours as pilot-in-command under supervision or 250 hours, either as pilot-in-command, or made up by not less than 70 hours as pilot-in-command and the necessary additional flight time as pilot-in-command under supervision;
- b) 200 hours of cross-country flight time, of which not less than 100 hours shall be as pilot-in-command or as pilot-in-command under



- supervision;
 - c) 75 hours of instrument time, of which not more than 30 hours may be instrument ground time; and
 - d) 100 hours of night flight as pilot-in-command or as co-pilot.
- 1.3.6.3.1.2 When the applicant has flight time as a pilot of aircraft in other categories, the Personnel Licensing Directorate shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 1.3.6.3.1.1 can be reduced accordingly.

1.3.6.3.2 *Flight instruction*

The applicant shall have received the dual flight instruction required at 1.3.4.3.2 for the issue of the commercial pilot license and at 1.3.7.4 for the issue of the instrument rating or at 1.3.5.4 for the issue of the multi-crew pilot license.

1.3.6.4 ***Specific requirements for the issue of the helicopter category rating***

1.3.6.4.1 *Experience*

1.3.6.4.1.1 The applicant shall have completed not less than 1 000 hours of flight time as a pilot of helicopters. The Personnel Licensing Directorate shall determine whether experience as a pilot under instruction in a flight simulation training device is acceptable as part of the total flight time of 1000hours. Credit for such experience shall be limited to a maximum of 100 hours, of which not more than 25 hours shall have been acquired in a flight procedure trainer or a basic instrument flight trainer.

1.3.6.4.1.1.1 The applicant shall have completed in helicopters not less than:

- a) 250 hours, either as pilot-in-command, or made up of not less than 70 hours as pilot-in-command and the necessary additional flight time as pilot-in-command under supervision;
- b) 200 hours of cross-country flight time, of which not less than 100 hours shall be as pilot-in-command or as pilot-in-command under supervision;
- c) 30 hours of instrument time, of which not more than 10 hours may be instrument ground time; and
- d) 50 hours of night flight as pilot-in-command or as co-pilot.

1.3.6.4.1.2 When the applicant has flight time as a pilot of aircraft in other categories, the Personnel Licensing Directorate shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 1.3.6.4.1.1 can be reduced accordingly.

1.3.6.4.2 *Flight instruction*

The applicant shall have received the flight instruction required for the issue of the commercial pilot license (1.3.4.4.2).

Note.— *The instrument time specified in 1.3.6.4.1.1.1 c) and the night flying time specified in 1.3.6.4.1.1.1 d) do not entitle the holder of the airline transport pilot license — helicopter to pilot helicopters under IFR.*

1.3.6.5 ***Specific requirements for the issue of the powered-lift category rating***

1.3.6.5.1 *Experience*



- 1.3.6.5.1.1 The applicant shall have completed not less than 1 500 hours of flight time as a pilot of powered-lifts. The Personnel Licensing Directorate may accept experience as a pilot under instruction in a flight simulation training device as part of the total flight time of 1 500 hours.
- 1.3.6.5.1.2 The applicant shall have completed in powered-lifts not less than:
- a) 250 hours, either as pilot-in-command, or made up of not less than 70 hours as pilot-in-command and the necessary additional flight time as pilot-in-command under supervision;
 - b) 100 hours of cross-country flight time, of which not less than 50 hours shall be as pilot-in-command or as pilot-in-command under supervision;
 - c) 75 hours of instrument time, of which not more than 30 hours may be instrument ground time; and
 - d) 25 hours of night flight as pilot-in-command or as co-pilot.
- 1.3.6.5.1.3 When the applicant has flight time as a pilot of aircraft in other categories, the Personnel Licensing Directorate may accept such experience and reduce the flight time requirements of 1.3.6.5.1.1 accordingly.

1.3.6.5.2 *Flight instruction*

The applicant shall have received the dual flight instruction required at 1.3.4.5.2 for the issue of the commercial pilot license and at 1.3.7.4 for the issue of the instrument rating.

1.3.7 **Instrument rating**

1.3.7.1 ***Requirements for the issue of the rating for aeroplane, helicopter and powered-lift categories***

1.3.7.1.1 *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of an instrument rating, in at least the following subjects:

Air law

- a) rules and regulations relevant to flight under IFR; related air traffic services practices and procedures;

Aircraft general knowledge for the aircraft category being sought

- b) use, limitation and serviceability of avionics, electronic devices and instruments necessary for the control and navigation of aircraft under IFR and in instrument meteorological conditions; use and limitations of autopilot;
- c) compasses, turning and acceleration errors; gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments;

Flight performance and planning for the aircraft category being sought

- d) pre-flight preparations and checks appropriate to flight under IFR;
- e) operational flight planning; preparation and filing of air traffic services flight plans under IFR; altimeter setting procedures;



Human performance for the aircraft category being sought

- f) human performance relevant to instrument flight in aircraft including principles of threat and error management;

Note.— *Guidance material to design training programmes on human performance, including threat and error management, can be found in the Human Factors Training Manual (Doc 9683).*

Meteorology for the aircraft category being sought

- g) application of aeronautical meteorology; interpretation and use of reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information; altimetry;
- h) causes, recognition and effects of icing; frontal zone penetration procedures; hazardous weather avoidance;
- i) in the case of helicopters and powered-lifts, effects of rotor icing;

Navigation for the aircraft category being sought

- j) practical air navigation using radio navigation aids;
- k) use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids;

Operational procedures for the aircraft category being sought

- l) application of threat and error management to operational performance;
- m) interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations, and instrument procedure charts for departure, en-route, descent and approach;
- n) precautionary and emergency procedures; safety practices associated with flight under IFR; obstacle clearance criteria;

Note.— *Information for pilots and flight operations personnel on flight procedure parameters and operational procedures is contained in the Procedures for Air Navigation Services (PANS-OPS, Doc 8168), Volume I — Flight Procedures. Procedures used in certain States may differ from PANS-OPS, and knowledge of these differences is important for safety reasons.*

Radiotelephony

- o) communication procedures and phraseology as applied to aircraft operations under IFR; action to be taken in case of communication failure.

1.3.7.1.2 *Skill*

1.3.7.1.2.1 The applicant shall have demonstrated in an aircraft of the category for which the instrument rating is being sought the ability to perform the procedures and manoeuvres described in 1.3.7.4.1 with a degree of competency appropriate to the privileges granted to the holder of an instrument rating, and to:

- a) recognize and manage threats and errors;



Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

- b) operate the aircraft for the category being sought, within its limitations;
 - c) complete all manoeuvres with smoothness and accuracy;
 - d) exercise good judgment and airmanship;
 - e) apply aeronautical knowledge; and
 - f) maintain control of the aircraft at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.
- 1.3.7.1.2.1.1 The applicant shall have demonstrated the ability to operate multi-engined aircraft within the appropriate category by reference solely to instruments with one engine inoperative, or simulated inoperative, if the privileges of the instrument rating are to be exercised on such aircraft.

Note.— *Attention is called to 1.3.1.6 on the use of flight simulation training devices for demonstrations of skill.*

1.3.7.1.3 *Medical fitness*

- 1.3.7.1.3.1 Applicants who hold a private pilot license shall have established their hearing acuity on the basis of compliance with the hearing requirements for the issue of a Class 1 Medical Assessment.
- 1.3.7.1.3.2 Holders of a private pilot license are required to comply with the physical and mental, and visual requirements for the issue of a Class 1 Medical Assessment.

1.3.7.2 ***Privileges of the holder of the rating and the conditions to be observed***

- 1.3.7.2.1 Subject to compliance with the requirements specified in 1.2.11, 1.2.13 and 2.1, the privileges of the holder of an instrument rating with a specific aircraft category shall be to pilot that category of aircraft under IFR.
- 1.3.7.2.2 Before exercising the privileges on multi-engined aircraft, the holder of the rating shall have complied with the requirements of 1.3.7.1.2.1.1.

Note.— *Pilots may exercise joint category privileges of the instrument rating on more than one category of aircraft if they have completed the requirements in each category.*

1.3.7.3 *Experience*

- 1.3.7.3.1 The applicant shall hold a pilot license for the aircraft category being sought.
- 1.3.7.3.2 The applicant shall have completed not less than:
 - a) 50 hours of cross-country flight time as pilot-in-command of aircraft in categories acceptable to the Personnel Licensing Directorate, of which not less than 10 hours shall be in the aircraft category being sought; and
 - b) 40 hours of instrument time in aircraft of which not more than 20 hours, or 30 hours where a flight simulator is used, may be



instrument ground time. The ground time shall be under the supervision of an authorized instructor.

1.3.7.4 *Flight instruction*

1.3.7.4.1 The applicant shall have gained not less than 10 hours of the instrument flight time required in 1.3.7.3.2 b) while receiving dual instrument flight instruction in the aircraft category being sought, from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in at least the following areas to the level of performance required for the holder of an instrument rating:

- a) pre-flight procedures, including the use of the flight manual or equivalent document, and appropriate air traffic services documents in the preparation of an IFR flight plan;
- b) pre-flight inspection, use of checklists, taxiing and pre- takeoff checks;
- c) procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least:
 - transition to instrument flight on takeoff;
 - standard instrument departures and arrivals;
 - en-route IFR procedures;
 - holding procedures;
 - instrument approaches to specified minima;
 - missed approach procedures;
 - landings from instrument approaches; in-flight manoeuvres and particular flight characteristics.

1.3.7.4.2 If the privileges of the instrument rating are to be exercised on multi-engined aircraft, the applicant shall have received dual instrument flight instruction in a multi-engined aircraft within the appropriate category from an authorized flight instructor. The instructor shall ensure that the applicant has operational experience in the operation of the aircraft within the appropriate category by reference solely to instruments with one engine inoperative or simulated inoperative.

1.3.8 Flight instructor rating appropriate to aeroplanes, helicopters and powered-lifts

1.3.8.1 *Applicability*

This chapter prescribes the requirements for the issuance of authorized flight instructors/examiners certificates and ratings for selected & maintained personnel by approved training organizations or Air Operators subject to compliance with the requirements specified in this chapter.

1.3.8.2 *Grades of authorized flight instructors/examiners.*

1.3.8.2.1 Pilots

- a) Category “Route” (Grade ‘C’) - Route training/Check
- b) Category “Simulator” (Grade ‘B’) – In addition to (a) Simulator training /Proficiency check
- c) Category “Aircraft” (Grade ‘A’) - In addition to (b) Aircraft Training/check



- d) Category Instructor – In addition to (c)
- 1.3.8.2.2 Flight Engineer
- a) Category “Route” (Grade ‘C’) - Route training/Check
 - b) Category “Simulator” (Grade ‘B’) – In addition to (a) Simulator training /Proficiency check
 - c) Category “Aircraft” (Grade ‘A’) - In additions (b) Aircraft Training/check
 - d) Category Instructor

Note1: Authorized flight instructors/examiners are progressively up-graded from grade ‘C’ to ‘B’ to ‘A’ then to Grade Instructor, subject to the operator’s requirements and acceptance of the Licensing authority.

Note2: The authority granted covers training and check for initial and renewal or renewal only subject to the qualification and experience.

1.3.8.3 Eligibility Requirements

- 1.3.8.3.1 Personal suitability in respect of attitude, aptitude, discipline, dedication, devotion professionalism, airmanship, impartiality.

1.3.8.4 Requirements for the issue of the rating

1.3.8.4.1 Knowledge

The applicant shall have met the knowledge requirements for the issue of a commercial pilot license as appropriate to the category of aircraft included in the license. In addition, the applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight instructor rating, in at least the following areas:

- a) techniques of applied instruction;
- b) assessment of student performance in those subjects in which ground instruction is given;
- c) the learning process;
- d) elements of effective teaching;
- e) student evaluation and testing, training philosophies;
- f) training programme development;
- g) lesson planning;
- h) classroom instructional techniques;
- i) use of training aids, including flight simulation training devices as appropriate;
- j) analysis and correction of student errors;
- k) human performance relevant to flight instruction including principles of threat and error management;

Note.— Guidance material to design training programmes on human performance, including threat and error management, can be found in the Human Factors Training Manual (Doc 9683).

- l) hazards involved in simulating system failures and malfunctions in the aircraft.

1.3.8.4.2 Skill

The applicant shall have demonstrated, in the category and class of aircraft for which flight instructor privileges are sought, the ability to instruct in



those areas in which flight instruction is to be given, including pre-flight, post-flight and ground instruction as appropriate.

1.3.8.4.3 *Experience*

The applicant shall have met the experience requirements for the issue of a commercial pilot license as specified in 1.3.4.3.1, 1.3.4.4.1, 1.3.4.5.1 and 1.3.4.6.1 for each aircraft category, as appropriate.

1.3.8.4.4 *Flight instruction*

The applicant shall, under the supervision of a flight instructor accepted by the Personnel Licensing Directorate for that purpose:

- a) have received instruction in flight instructional techniques including demonstration, student practices, recognition and correction of common student errors; and
- b) have practised instructional techniques in those flight manoeuvres and procedures in which it is intended to provide flight instruction.

1.3.8.5 *Privileges of the holder of the rating and the conditions to be observed*

1.3.8.5.1 Subject to compliance with the requirements specified in 1.2.11 and 1.3.1, the privileges of the holder of a flight instructor rating shall be:

- a) to supervise solo flights by student pilots; and
- b) to carry out flight instruction for the issue of a private pilot license, a commercial pilot license, an instrument rating, and a flight instructor rating provided that the flight instructor:
 - i. holds at least the license and rating for which instruction is being given, in the appropriate aircraft category;
 - ii. holds the license and rating necessary to act as the pilot-in-command of the aircraft on which the instruction is given; and
 - iii. has the flight instructor privileges granted entered on the license.

1.3.8.5.2 The applicant, in order to carry out instruction for the multi-crew pilot license, shall have also met all the instructor qualification requirements.

Note.— *Specific provisions for flight instructors carrying out instruction for the multi-crew pilot license exist in Chapter 4 of the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868).*

1.3.9 **Glider pilot license** (currently not issued)

1.3.9.1 ***Requirements for the issue of the license***

1.3.9.1.1 *Age*

The applicant shall be not less than 16 years of age.

1.3.9.1.2 *Knowledge*

1.3.9.1.2.1 The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a glider pilot license, in at least the following subjects:

Air law

- a) rules and regulations relevant to the holder of a glider pilot license; rules of the air; appropriate air traffic services practices and



procedures;

Aircraft general knowledge

- b) principles of operation of glider systems and instruments;
- c) operating limitations of gliders; relevant operational information from the flight manual or other appropriate document;

Flight performance, planning and loading

- d) effects of loading and mass distribution on flight characteristics; mass and balance considerations;
- e) use and practical application of launching, landing and other performance data;
- f) pre-flight and en-route flight planning appropriate to operations under VFR; appropriate air traffic services procedures; altimeter setting procedures; operations in areas of high-density traffic;

Human performance

- g) human performance relevant to the glider pilot including principles of threat and error management;

Note.— *Guidance material to design training programmes on human performance, including threat and error management, can be found in the Human Factors Training Manual (Doc 9683).*

Meteorology

- h) application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry;

Navigation

- i) practical aspects of air navigation and dead-reckoning techniques; use of aeronautical charts;

Operational procedures

- j) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
- k) different launch methods and associated procedures;
- l) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards;

Principles of flight

- m) principles of flight relating to gliders.

1.3.9.1.2.2 The applicant shall demonstrated a level of knowledge appropriate to the privileges to be granted to the holder of a glider pilot license, in communication procedures and phraseology as appropriate to VFR operations and on action to be taken in case of communication failure.

1.3.9.1.3 *Experience*

1.3.9.1.3.1 The applicant shall have completed not less than six hours of flight time



as a pilot of gliders including two hours of solo flight time during which not less than 20 launches and landings have been performed.

1.3.9.1.3.1.1 When the applicant has flight time as a pilot of aeroplanes, the Personnel Licensing Directorate shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 1.3.9.1.3.1 can be reduced accordingly.

1.3.9.1.3.2 The applicant shall have gained, under appropriate supervision, operational experience in gliders in at least the following areas:

- a) pre-flight operations, including glider assembly and inspection;
- b) techniques and procedures for the launching method used, including appropriate airspeed limitations, emergency procedures and signals used;
- c) traffic pattern operations, collision avoidance pre-cautions and procedures;
- d) control of the glider by external visual reference;
- e) flight throughout the flight envelope;
- f) recognition of, and recovery from, incipient and full stalls and spiral dives;
- g) normal and crosswind launches, approaches and landings;
- h) cross-country flying using visual reference and dead reckoning;
- i) emergency procedures.

1.3.9.1.4 *Skill*

The applicant shall have demonstrated the ability to perform as pilot-in-command of a glider, the procedures and manoeuvres described in 1.3.9.1.3.2 with a degree of competency appropriate to the privileges granted to the holder of a glider pilot license, and to:

- a) recognize and manage threats and errors;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

- b) operate the glider within its limitations;
- c) complete all manoeuvres with smoothness and accuracy;
- d) exercise good judgment and airmanship;
- e) apply aeronautical knowledge; and
- f) maintain control of the glider at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

1.3.9.1.5 *Medical fitness*

The applicant shall hold a current Class 2 Medical Assessment.

1.3.9.2 ***Privileges of the holder of the license and the conditions to be observed***

1.3.9.2.1 Subject to compliance with the requirements specified in 1.2.11, 1.2.13, 1.2.14.1 and 1.3.1, the privileges of the holder of a glider pilot license shall be to act as pilot-in-command of any glider provided the license holder has operational experience in the launching method used.

1.3.9.2.2 If passengers are to be carried, the license holder should have completed not less than 10 hours of flight time as a pilot of gliders.



1.3.10 Free balloon pilot license (currently not issued)

Note.— The provisions of the free balloon pilot license apply to free balloons using hot air or gas.

1.3.10.1 Requirements for the issue of the license

1.3.10.1.1 Age

The applicant shall be not less than 16 years of age.

1.3.10.1.2 Knowledge

1.3.10.1.2.1 The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a free balloon pilot license, in at least the following subjects:

Air law

- a) rules and regulations relevant to the holder of a free balloon pilot license; rules of the air; appropriate air traffic services practices and procedures;

Aircraft general knowledge

- b) principles of operation of free balloon systems and instruments;
- c) operating limitations of free balloons; relevant operational information from the flight manual or other appropriate document;
- d) physical properties and practical application of gases used in free balloons;

Flight performance, planning and loading

- e) effects of loading on flight characteristics; mass calculations;
- f) use and practical application of launching, landing and other performance data, including the effect of temperature;
- g) pre-flight and en-route flight planning appropriate to operations under VFR; appropriate air traffic services procedures; altimeter setting procedures; operations in areas of high-density traffic;

Human performance

- h) human performance relevant to the free balloon pilot including principles of threat and error management;

Note.— Guidance material to design training programmes on human performance, including threat and error management, can be found in the Human Factors Training Manual (Doc 9683).

Meteorology

- i) application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry;

Navigation

- j) practical aspects of air navigation and dead-reckoning techniques; use of aeronautical charts;



Operational procedures

- k) use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
- l) appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards;

Principles of flight

- m) principles of flight relating to free balloons.

1.3.10.1.2.2 The applicant shall demonstrate a level of knowledge appropriate to the privileges to be granted to the holder of a free balloon pilot license, in communication procedures and phraseology as appropriate to VFR operations and on action to be taken in case of communication failure.

1.3.10.1.3 *Experience*

1.3.10.1.3.1 The applicant shall have completed not less than 16 hours of flight time as a pilot of free balloons including at least eight launches and ascents of which one must be solo.

1.3.10.1.3.2 The applicant shall have gained, under appropriate supervision, operational experience in free balloons in at least the following areas:

- a) pre-flight operations, including balloon assembly, rigging, inflation, mooring and inspection;
- b) techniques and procedures for the launching and ascent, including appropriate limitations, emergency procedures and signals used;
- c) collision avoidance precautions;
- d) control of the free balloon by external visual reference;
- e) recognition of, and recovery from, rapid descents;
- f) cross-country flying using visual reference and dead reckoning;
- g) approaches and landings, including ground handling;
- h) emergency procedures.

1.3.10.1.3.3 If the privileges of the license are to be exercised at night, the applicant shall have gained, under appropriate supervision, operational experience in free balloons in night flying.

1.3.10.1.3.4 If passengers are to be carried for remuneration or hire, the license holder shall complete not less than 35 hours of flight time including 20 hours as a pilot of a free balloon.

1.3.10.1.4 *Skill*

The applicant shall have demonstrated the ability to perform as pilot-in-command of a free balloon, the procedures and manoeuvres described in 1.3.10.1.3.2 with a degree of competency appropriate to the privileges granted to the holder of a free balloon pilot license, and to:

- a) recognize and manage threats and errors;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*



- b) operate the free balloon within its limitations;
- c) complete all manoeuvres with smoothness and accuracy;
- d) exercise good judgment and airmanship;
- e) apply aeronautical knowledge; and
- f) maintain control of the free balloon at all times in a manner such that the successful outcome of a procedure or manoeuvre is assured.

1.3.10.1.5 *Medical fitness*

The applicant shall hold a current Class 2 Medical Assessment.

1.3.10.2 ***Privileges of the holder of the license and the conditions to be observed***

1.3.10.2.1 Subject to compliance with the requirements specified in 1.2.11, 1.2.13, 1.2.14.1, 1.3.1 and 1.3.10.1.3.4, the privileges of the holder of a free balloon pilot license shall be to act as pilot-in-command of any free balloon provided that the license holder has operational experience in hot air or gas balloons as appropriate.

1.3.10.2.2 Before exercising the privileges at night, the license holder shall have complied with the requirements specified in 1.3.10.1.3.3.



CHAPTER 4 LICENSES FOR FLIGHT CREWMEMBERS OTHER THAN PILOTS

1.4.1 General rules concerning flight engineer Licenses

- 1) An applicant shall, before being issued with a flight engineer License, meet such requirements in respect of age, knowledge, experience, skill and medical fitness as are specified for those Licenses.
- 2) An applicant for a flight engineer License shall demonstrate such requirements for knowledge and skill as are specified for those Licenses, in a manner determined by the Licensing Authority.

1.4.2 Flight Engineer License

- 1) Requirements for the issue of the License.

Age

The applicant shall be not less than 18 years of age.

Knowledge

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight Engineer License, in at least the following subjects:-

Air Law

- a) Rules and regulations relevant to the holder of a Flight Engineer License; rules and regulations governing the operation of civil aircraft pertinent to the duties of a flight engineer.

Aircraft General Knowledge.

- b) Basic principles of power-plants, gas turbines and/or piston engines; characteristics of fuels, fuel systems including fuel control; lubricants and lubrication systems, function and operation of engine ignition and started systems;
- c) Principles of operation, handling procedures and operating limitations of aircraft power-plants; effects of atmospheric conditions on engine performance;
- d) Airframes, flight control, structures, wheel assemblies, brakes and anti-skid units, corrosion and fatigue life, identification structural damage and defect;
- e) Ice and rain protection system;
- f) Pressurization and air-conditioning systems, oxygen systems;
- g) Hydraulic and pneumatic systems;
- h) Basic electrical theory, electrical systems (AC and DC), aircraft wiring systems, bonding and screening;
- i) Principles of operation of instruments, compasses, autopilots, radio communication equipment, radio and radar navigation aids, flight management systems, display and avionics;
- j) Limitations of appropriate aircraft;
- k) Fire protection, detection, suppression and extinguishing systems;
- l) Use and serviceability checks of equipment and systems appropriate aircraft;



Flight Performance and Planning

- m) Effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;
- n) Use of practical application of performance data, including procedures for cruise control;

Human Performance

- o) Human performance relevant to the Flight Engineer.

Operational Performance

- p) Principles of maintenance, procedures for the maintenance of airworthiness, defect reporting, pre-flight inspections, precautionary procedures for fueling and use of external power; installed equipment and cabin system;
- q) Normal, abnormal and emergency procedures;
- r) Operational procedures for carriage of freight and dangerous goods;

Principles of Flight

- s) Fundamentals of aerodynamics;

Radiotelephony

- t) Radiotelephony procedures and phraseology;

- 2) The applicant should have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight engineer License in at least the following subjects:

- a) fundamentals of navigation; principles and operation of self-contained systems; and
- b) operational aspects of meteorology.

- 3) Experience

- a) The applicant shall have completed, under the supervision of a person accepted by the Licensing authority for that purpose, not less than 100 hours of flight time in the performance of the duties of a flight engineer. The Licensing authority shall determine whether experience as a flight engineer in a flight simulator, which it has approved, is acceptable as part of the total flight time of 100 hours. Credit for such experience shall be limited to a maximum of 50 hours.
- b) When the applicant has flight time as a pilot, the Licensing authority shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of (a) can be reduced accordingly.
- c) The applicant shall have operational experience in the performance of the duties of a flight engineer, under the supervision of a flight engineer accepted by the Licensing authority for that purpose, in at least the following areas:
 - i. Normal procedures
 - pre-flight inspections
 - fueling procedures, fuel management
 - inspection of maintenance documents



normal flight deck procedures during all phases of flight
crew coordination and procedures in case of crew incapacitation
defect reporting.

- ii. Abnormal and alternate (standby) procedures
recognition of abnormal functioning of aircraft systems
use of abnormal and alternate (standby) procedures
- iii. Emergency procedures
recognition of emergency conditions
use of appropriate emergency procedures

4) Skill

- a) The applicant shall have demonstrated the ability to perform as flight engineer of an aircraft, the duties and procedures described in 1.4.2 (3) with a degree of competency appropriate to the privileges granted to the holder of a flight engineer License, and to:
 - i. Use aircraft systems within the aircraft's capabilities and limitations;
 - ii. Exercise good judgment and airmanship;
 - iii. Apply aeronautical knowledge;
 - iv. Perform all the duties as part of an integrated crew with the successful outcome never in doubt; and
 - v. Communicate effectively with the other flight crewmembers.
- b) The use of a synthetic flight trainer for performing any of the procedures required during the demonstration of skill described in 1.4.2(4) shall be approved by the Licensing authority, which shall ensure that the synthetic flight trainer is appropriate to the task.

5) Medical Fitness

The applicant shall hold a current class 1 Medical Assessment.

6) Privileges of the holder of the License and the conditions to be observed in exercising such privileges.

- a) Subject to compliance with the requirements specified in Chapter 2 of this part, the privileges of the holder of a flight engineer License shall be to act as flight engineer of any type of aircraft on which the holder has demonstrated a level of knowledge and skill, as determined by the Licensing authority on the basis of those requirements specified in 1.4.2(2) and 1.4.2(4) which are applicable to the safe operation of that type of aircraft.
- b) The types of aircraft on which the holder of a flight engineer License is authorized to exercise the privileges of that License, shall be entered on the License.

1.4.3 ***Flight navigator license***

An applicant for a flight navigator license shall demonstrate such requirements for knowledge and skill as are specified for those licenses, in a manner determined by the Licensing Authority.

1. Requirements for the issue of the license



Age

The applicant shall be not less than 18 years of age.

Knowledge

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight navigator license, in at least the following subjects:

Air law

- a) rules and regulations relevant to the holder of a flight navigator license; appropriate air traffic services practices and procedures; Flight performance, planning and loading;
- b) effects of loading and mass distribution on aircraft performance;
- c) use of takeoff, landing and other performance data including procedures for cruise control;
- d) pre-flight and en-route operational flight planning; preparation and filing of air traffic services flight plans; appropriate air traffic service procedures and altimeter setting

Human performance

- e) human performance relevant to the flight navigator including principles of threat and error management;

Note.— *Guidance material to design training programmes on human performance, including threat and error management, can be found in the Human Factors Training Manual (Doc 9683).*

Meteorology

- f) interpretation and practical application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;
- g) aeronautical meteorology; climatology of relevant areas in respect of the elements having an effect upon aviation; the movement of pressure systems; the structure of fronts, and the origin and characteristics of significant weather phenomena which affect takeoff, en-route and landing conditions;

Navigation

- h) dead-reckoning, pressure-pattern and celestial navigation procedures; the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for long-range flights;
- i) use, limitation and serviceability of avionics and instruments necessary for the navigation of the aircraft;
- j) use, accuracy and reliability of navigation systems used in departure, en-route and approach phases of flight; identification of radio navigation aids;
- k) principles, characteristics and use of self-contained and external-referenced navigation systems; operation of airborne equipment;



- l) the celestial sphere including the movement of heavenly bodies and their selection and identification for the purpose of observation and reduction of sights; calibration of sextants; the completion of navigation documentation;
- m) definitions, units and formulae used in air navigation; Operational procedures;
- n) interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes, abbreviations, and instrument procedure charts for departure, en-route, descent and approach; Principles of flight;
- o) principles of flight;

Radiotelephony

- p) communication procedures and phraseology.

2. Experience

The applicant shall have completed in the performance of the duties of a flight navigator, not less than 200 hours of flight time acceptable to the Licensing Authority, in aircraft engaged in cross-country flights, including not less than 30 hours by night.

When the applicant has flight time as a pilot, the Licensing Authority shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements can be reduced accordingly. The applicant shall produce evidence of having satisfactorily determined the aircraft's position in flight, and used that information to navigate the aircraft, as follows:

- a) by night — not less than 25 times by celestial observations; and
- b) by day — not less than 25 times by celestial observations in conjunction with self-contained or external-referenced navigation systems.

3. Skill

The applicant shall have demonstrated the ability to perform as flight navigator of an aircraft with a degree of competency appropriate to the privileges granted to the holder of a flight navigator licence, and to:

- a) recognize and manage threats and errors;

Note.— *Guidance material on the application of threat and error management is found in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868), Chapter 3, Attachment C, and in Part II, Chapter 2, of the Human Factors Training Manual (Doc 9683).*

- b) exercise good judgment and airmanship.

4) Medical Fitness

The applicant shall hold a current class 1 Medical Assessment.

- 5) Privileges of the holder of the License and the conditions to be observed in exercising such privileges.



-
- a) Subject to compliance with the requirements specified in Chapter 2 of this part, the privileges of the holder of a flight navigator license shall be to act as flight navigator of any type of aircraft on which the holder has demonstrated a level of knowledge and skill, as determined by the Licensing authority on the basis of those requirements specified in 1.4.3 (1, 2 and 3) which are applicable to the safe operation of that type of aircraft.
 - b) The types of aircraft on which the holder of a flight navigator license is authorized to exercise the privileges of that License, shall be entered on the License.



CHAPTER 5

LICENSES AND RATINGS FOR PERSONNEL OTHER THAN FLIGHT CREWMEMBERS

1.5.1 *General Rules for license and ratings for personnel other than flight crewmembers*

- 1) An applicant shall, before being issued with any License or rating for personnel other than flight crewmembers, meet such requirements in respect of age, knowledge, experience and where appropriate, medical fitness and skill, as are specified for that License or rating.
- 2) An applicant, for any License or rating for personnel other than flight crewmembers, shall demonstrate, in a manner determined by the Licensing Authority, such requirements in respect of knowledge and skill as are specified for that License or rating.

Note.— *The terms in brackets are given as acceptable additions to the title of the License.*

Requirements for the issue of the License

- 1) Age: The applicant shall be not less than 18 years of age.
- 2) Knowledge: The applicant shall have demonstrated a level of knowledge relevant to the privileges to be granted and appropriate to the responsibilities of an aircraft maintenance License holder, in at least the following subjects:

Air law and airworthiness requirements

- a) rules and regulations relevant to an aircraft maintenance License holder including applicable airworthiness requirements governing certification and continuing airworthiness of aircraft and approved aircraft maintenance organization and procedures;

Natural science and aircraft general knowledge

- b) basic mathematics; units of measurement; fundamental principles and theory of physics and chemistry applicable to aircraft maintenance;

Aircraft engineering

- c) characteristics and applications of the materials of aircraft construction including principles of construction and functioning of aircraft structures, fastening techniques; power-plants and their associated systems; mechanical, fluid, electrical and electronic power sources; aircraft instrument and display systems; aircraft control systems; and airborne navigation and communication systems;

1.5.2 *Aircraft maintenance (technician/engineer/mechanic)*

- a) tasks required to ensure the continuing airworthiness of an aircraft including methods and procedures for the overhaul, repair, inspection, replacement, modification or defect rectification of aircraft structures, components and systems in accordance with the methods prescribed in the relevant Maintenance Manuals and the applicable Standards of airworthiness; and



Human performance

f) human performance relevant to aircraft maintenance.

3) Experience

The applicant shall have had the following experience in the inspection, servicing and maintenance of aircraft or its components:

a) for the issue of a License with privileges for the aircraft in its entirety, at least:

i) four years; or

ii) two years if the applicant has satisfactorily completed an approved training course; and

b) for the issue of a License with privileges restricted in accordance with 1.5.2 (6) (b) or (c), a period of time that will enable a level of competency equivalent to that required in a) to be attained, provided that this is not less than:

i) two years; or

ii) such a period as the Licensing Authority considers necessary to provide an equivalent level of practical experience to applicants who have satisfactorily completed an approved training course.

c) Experience requirements.

Each applicant for an AME License must present either an appropriate graduation certificate from a recognized aircraft maintenance engineering institute, a certificate of completion from a certified aviation maintenance school, or documentary evidence satisfactory to the CAA with the equivalent number of years of experience from an airline or maintenance organization after high school.

4) Training

The applicant should have completed a course of training appropriate to the privileges to be granted.

Note.— ICAO Doc 7192 - *The Training Manual, Part D-1*, contains guidance material on a training course for applicants for an aircraft maintenance License.

5) Skill

The applicant shall have demonstrated the ability to perform those functions applicable to the privileges to be granted.

6) Privileges of the holder of the License and the conditions to be observed in exercising such privileges

a) Subject to compliance with the requirements specified in 1.5.2(6) (b) and 1.5.2(6) (c), the privileges of the holder of an aircraft maintenance License shall be to certify the aircraft or parts of the aircraft as airworthy after an authorized repair, modification or installation of a power-plant, accessory, instrument, and/or item of equipment, and to sign a maintenance release following inspection, maintenance operations and/or routine servicing.



- b) The privileges of the holder of an aircraft maintenance License specified in 1.5.2(6)(a) shall be exercised only:
- i. in respect of such:
 - A) aircraft as are entered on the License in their entirety either specifically or under broad categories; or
 - B) airframes and power-plants and aircraft systems or components as are entered on the License either specifically or under broad categories; and/or
 - C) aircraft avionic systems or components as are entered on the License either specifically or under broad categories;
 - ii. provided that the License holder is familiar with all the relevant information relating to the maintenance and airworthiness of the particular aircraft for which the License holder is signing a Maintenance Release, or such airframe, power-plant, aircraft system or component and aircraft avionic system or component which the License holder is certifying as being airworthy; and
 - iii. on condition that, within the preceding 24 months, the License holder has either had experience in the inspection, servicing or maintenance of an aircraft or components in accordance with the privileges granted by the License held for not less than six months, or has met the provision for the issue of a License with the appropriate privileges, to the satisfaction of the Licensing Authority.
- c) The Licensing authority shall prescribe the scope of the privileges of the License holder in terms of the complexity of the tasks to which the certification relates. Details of the certification privileges should be endorsed on or attached to the License, either directly or by reference to another document issued by the Licensing authority.
- d) When Sudan CAA authorizes an approved maintenance organization to appoint non-licensed personnel to exercise the privileges of 1.5.2(6), the person appointed shall meet the requirements specified in 1.5.2 (7) – *Types of Licenses issued*.

7) Types of licenses issued

The CAA issues the following Licenses under this Part for applicants meeting the theoretical and practical requirements defined for each License:

“A” - Pressurized Metal Aeroplanes

“C” - Jet Turbine Engines

“X” - Avionics:

- (1) Electrical
- (2) Instruments
- (3) Integrated Flight Control
- (4) Control Compass Compensation “R” - Radio:
- (5) Communicated Navigation
- (6) Radar Systems



8) Additional privileges and ratings

A Licensed AME may perform alteration, repair (excluding major repairs and major alteration), inspection and return-to-service of any aviation product only if his License is endorsed with the proper type-rating relevant to the product.

9) Recent experience requirements

A Licensed AME may not exercise the privileges of his License and type-rating unless, within the preceding 24 months—

- a) The CAA Administrator has found that he is able to do that work, or
- b) He has, for at least 6 months:
 - i. Served as an Aircraft Maintenance Engineer under his License and type rating.
 - ii. Technically supervised other AMEs.
 - iii. Supervised, in an executive capacity, the maintenance or alteration of aviation products.
 - iv. Been engaged in any combination of b) i, ii or iii of this section.

10) General privileges and limitations.

An Aircraft Maintenance Engineer's License shall authorize the holder, subject to such conditions as may be specified in the License, to issue—

- a) Certificates of Maintenance Review with respect to such aircraft as may be so specified.
- b) Certificates of Release-to-Service with respect to such overhauls, repairs, replacements, modifications, maintenance and inspections of such aircraft, engines and other aeronautical products as may be so specified, or
- c) Certificates of Fitness to be issued for aircraft for the purpose of test flight.

1.5.3 Student air traffic controller License

- 1) A student air traffic controller shall not act in a way which constitute a hazard to air navigation and shall always practice his duties under the direct control of an air traffic control instructor and supervisor.
- 2) A student air traffic controller shall not perform in an operational environment unless he holds at least a Class 3 medical fitness certificate.

1.5.4 Air traffic controller License

- 1) Requirements for the issue of the License
The applicant shall meet the requirements of 1.5.4.1 and the requirements of at least one of the ratings set out in 1.5.5. Unlicensed State employees may operate as air traffic controllers on condition that they meet the same requirements.

Age

The applicant shall be not less than 21 years of age.



Knowledge

The applicant shall have demonstrated a level of knowledge appropriate to the holder of an air traffic controller License, in at least the following subjects:

Air law

- a) rules and regulations relevant to the air traffic controller;

Air traffic control equipment

- b) principles, use and limitations of equipment used in air traffic control;

General knowledge

- c) principles of flight; principles of operation and functioning of aircraft, power-plants and systems; aircraft performances relevant to air traffic control operations;

Human performance

- d) human performance relevant to air traffic control;

Note.— Guidance material to design training programmes on human performance can be found in the Human Factors Training Manual (Doc 9683).

Meteorology

- e) aeronautical meteorology; use and appreciation of meteorological documentation and information; origin and characteristics of weather phenomena affecting flight operations and safety; altimetry;

Navigation

- b) principles of air navigation; principle, limitation and accuracy of navigation systems and visual aids; and

Operational procedures

- g) air traffic control, communication, radiotelephony and phraseology procedures (routine, non-routine and emergency); use of the relevant aeronautical documentation; safety practices associated with flight.

2) Experience

The applicant shall have completed an approved training course and not less than three months' satisfactory service engaged in the actual control of air traffic under the supervision of an appropriately rated air traffic controller. The experience requirements specified for air traffic controller ratings in 1.5.5 may be credited as part of the experience specified in this paragraph.

3) Medical fitness

The applicant shall hold a current Class 3 Medical Assessment.



1.5.5 *Air traffic controller ratings*

1) Categories of air traffic controller ratings

Air traffic controller ratings shall comprise the following categories:

- a) aerodrome control rating;
- b) approach control rating;
- c) approach radar control rating;
- d) approach precision radar control rating;
- e) area control rating; and
- f) area radar control rating.

Note.— The World Meteorological Organization has specified requirements for personnel making meteorological observations which apply to air traffic controllers providing such a service.

2) Requirements for air traffic controller ratings

a) *Knowledge*

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted, in at least the following subjects in so far as they affect the area of responsibility:

- i. aerodrome control rating:
 - 1) aerodrome layout; physical characteristics and visual aids;
 - 2) airspace structure;
 - 3) applicable rules, procedures and source of information;
 - 4) air navigation facilities;
 - 5) air traffic control equipment and its use;
 - 6) terrain and prominent landmarks;
 - 7) characteristics of air traffic;
 - 8) weather phenomena; and
 - 9) emergency and search and rescue plans;
- ii. approach control and area control ratings:
 - 1) airspace structure;
 - 2) applicable rules, procedures and source of information;
 - 3) air navigation facilities;
 - 4) air traffic control equipment and its use;
 - 5) terrain and prominent landmarks;
 - 6) characteristics of air traffic and traffic flow;
 - 7) weather phenomena; and
 - 8) emergency and search and rescue plans; and

b) *approach radar, approach precision radar and area radar control ratings:* The applicant shall meet the requirements specified in b) in so far as they affect the area of responsibility, and shall have demonstrated a level of knowledge appropriate to the privileges granted, in at least the following additional subjects:

- i. principles, use and limitations of radar, other surveillance systems and associated equipment; and
- ii. procedures for the provision of approach, precision approach or area radar control services, as appropriate, including procedures to ensure appropriate terrain clearance.



- iii. Experience The applicant shall have:
- A) satisfactorily completed an approved training course;
 - B) provided, satisfactorily, under the supervision of an appropriately rated air traffic controller:
 - 1) *aerodrome control rating*: an aerodrome control service, for a period of not less than 90 hours or one month, whichever is greater, at the unit for which the rating is sought;
 - 2) *approach, approach radar, area or area radar control rating*: the control service for which the rating is sought, for a period of not less than 180 hours or three months, whichever is greater, at the unit for which the rating is sought; and
 - 3) *approach precision radar control rating*: not less than 200 precision approaches of which not more than 100 shall have been carried out on a radar simulator approved for that purpose by the Licensing Authority. Not less than 50 of those precision approaches shall have been carried out at the unit and on the equipment for which the rating is sought; and
 - c) if the privileges of the approach radar control rating include surveillance radar approach duties, the experience shall include not less than 25 plan position indicator (PPI) approaches on the surveillance equipment of the type in use at the unit for which the rating is sought and under the supervision of an appropriately rated approach radar controller.
- 3) The experience specified in 2 b) shall have been completed within the 6-month period immediately preceding application.
- 4) When the applicant already holds an air traffic controller rating in another category, or the same rating for another unit, the Licensing Authority shall determine whether the experience requirement of 1.5.4 can be reduced, and if so, to what extent.
- 5) Skill
The applicant shall have demonstrated, at a level appropriate to the privileges being granted, the skill, judgment and performance required to provide a safe, orderly and expeditious control service.
- 6) Concurrent issuance of two air traffic controller ratings
When two air traffic controller ratings are sought concurrently, the Licensing Authority shall determine the applicable requirements on the basis of the requirements for each rating. These requirements shall not be less than those of the more demanding rating.
- 7) Privileges of the holder of the air traffic controller rating(s) and the conditions to be observed in exercising such privileges



- 8) Subject to compliance with the requirements specified in 1.2.11, 1.2.12 and 1.2.18, the privileges of the holder of an air traffic controller License endorsed with one or more of the undermentioned ratings shall be:
 - a) *aerodrome control rating*: to provide or to supervise the provision of aerodrome control service for the aerodrome for which the License holder is rated;
 - b) *approach control rating*: to provide or to supervise the provision of approach control service for the aerodrome or aerodromes for which the License holder is rated, within the airspace or portion thereof, under the jurisdiction of the unit providing approach control service;
 - c) *approach radar control rating*: to provide and/or supervise the provision of approach control service with the use of radar or other surveillance systems for the aerodrome or aerodromes for which the License holder is rated, within the airspace or portion thereof, under the jurisdiction of the unit providing approach control service

- 9) subject to compliance with the provisions of 1 c), the privileges shall include the provision of surveillance radar approaches;
 - d) *approach precision radar control rating*: to provide and/or supervise the provision of precision approach radar service at the aerodrome for which the License holder is rated;
 - e) *area control rating*: to provide and/or supervise the provision of area control service within the control area or portion thereof, for which the License holder is rated; and
 - f) *area radar control rating*: to provide and/or supervise the provision of area control service with the use of radar, within the control area or portion thereof, for which the License holder is rated.

- 10) Before exercising the privileges indicated in 1), the License holder shall be familiar with all pertinent and current information.

- 11) Holder of an air traffic controller License shall not carry out instruction in an operational environment unless the holder has received proper authorization from such Sudan CAA.

- 12) Validity of ratings

A rating shall become invalid when an air traffic controller has ceased to exercise the privileges of the rating for a period determined by the Licensing Authority. That period shall not exceed six months. A rating shall remain invalid until the controller's ability to exercise the privileges of the rating has been re-established.

1.5.6 ***Flight radiotelephone operator***

Note.— Where the knowledge and skill of an applicant have been established as satisfactory in respect of the certification requirements for the radiotelephone operator's restricted certificate specified in the general radio regulations annexed to the International Telecommunication Convention and the applicant has met the requirements that are pertinent to the operation of the radiotelephone on



board an aircraft, The Republic of Sudan endorses a License already held by the applicant and issue a separate License as appropriate.

Note.— *Skill and knowledge requirements on radiotelephony procedures and phraseology have been developed as an integral part of all pilot aeroplanes and helicopter Licenses*



CHAPTER 6

CERTIFICATION FOR PERSONNEL FLIGHT OPERATIONS OFFICERS AND CABIN CREWMEMBERS

1.6.1 *General*

- 1) No Air Operator shall permit a person to act and no person shall act as a Flight Operation Officer/Dispatcher or Cabin Crewmember unless he/she holds a Certificate issued by the CAA.
- 2) A Flight Operation Officer /Dispatcher or Cabin Crewmember, when employed in conjunction with an approved method of flight supervision shall be trained and certified in accordance with SUCASR.
- 3) Each person who holds a Flight Operation Officer /Dispatcher or Cabin Crewmember Certificate issued by the CAA shall present it for inspection upon the request of the CAA.
- 4) Holders of certificates issued in accordance with this Part shall strictly adhere to the general regulatory requirements for personnel Licensing and certification detailed in this Part.
- 5) An applicant shall, before being issued with any License, certificate or rating for personnel other than flight crewmembers, meet such requirements in respect of age, knowledge, experience and where appropriate, medical fitness and skill, as are specified for that License or rating.
- 6) An applicant, for any License or rating for personnel other than flight crewmembers, shall demonstrate, in a manner determined by the Licensing Authority, such requirements in respect of knowledge and skill as are specified for that License or rating.

1.6.2 *Flight Operations Officer / Dispatcher*

- 1) Requirements for the issue of Certificates

Age

The applicant shall be not less than 21 years of age.

Knowledge

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight operations officer License, in at least the following subjects:

Air law

- a) rules and regulations relevant to the holder of a flight operations officer License; appropriate air traffic services practices and procedures;

Aircraft general knowledge

- b) principles of operation of airplane power-plants, systems and instruments;



- c) operating limitations of aeroplanes and power-plants;
- d) minimum equipment list;

Flight performance calculation and planning procedures

- e) effects of loading and mass distribution on aircraft performance and flight characteristics; mass and balance calculations;
- f) operational flight planning; fuel consumption and endurance calculations; alternate airport selection procedures; en-route cruise control; extended range operation;
- g) preparation and filing of air traffic services flight plans;
- h) basic principles of computer-assisted planning systems;

Human performance

- i) human performance relevant to dispatch duties;

Note.— *Guidance material to design training programmes on human performance can be found in the Human Factors Training Manual (Doc 9683).*

Meteorology

- j) aeronautical meteorology; the movement of pressure systems; the structure of fronts, and the origin and characteristics of significant weather phenomena which affect takeoff, en-route and landing conditions;
- k) interpretation and application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information;

Navigation

- l) principles of air navigation with particular reference to instrument flight;

Operational procedures

- m) use of aeronautical documentation;
- n) operational procedures for the carriage of freight and dangerous goods;
- o) procedures relating to aircraft accidents and incidents; emergency flight procedures;
- p) procedures relating to unlawful interference and sabotage of aircraft;

Principles of flight

- q) principles of flight relating to the appropriate category of aircraft; and

Radio communication

- r) procedures for communicating with aircraft and relevant ground stations.

2) Experience

The applicant shall have gained the following experience:

- a) a total of two years' service in any one or in any combination of the capacities specified in i) to iii) inclusive, provided that in any



combination of experience the period serviced in any capacity shall be at least one year:

- i. a flight crewmember in air transportation; or
 - ii. a meteorologist in an organization dispatching aircraft in air transportation; or
 - iii. an air traffic controller; or a technical supervisor of flight operations officers or air transportation flight operations systems;
- or*

- b) at least one year as an assistant in the dispatching of air transport; *or*
- c) have satisfactorily completed an approved training course.
- d) The applicant shall have served under the supervision of a flight operations officer for at least 90 working days within the six months immediately preceding the application.

3) Skill

The applicant shall have demonstrated the ability to:

- a) make an accurate and operationally acceptable weather analysis from a series of daily weather maps and weather reports; provide an operationally valid briefing on weather conditions prevailing in the general neighborhood of a specific air route; forecast weather trends pertinent to air transportation with particular reference to destination and alternates;
- b) determine the optimum flight path for a given segment, and create accurate manual and/or computer generated flight plans; and
- c) provide operating supervision and all other assistance to a flight in actual or simulated adverse weather conditions, as appropriate to the duties of the holder of a flight operations officer License.

4) Privileges of the holder of the License and conditions to be observed in exercising such privileges

Subject to compliance with requirements specified in this Part, the privileges of the holder of a flight operations officer License shall be to serve in that capacity with responsibility for each area for which the applicant meet the requirements specified in SUCAR Part 6.

5) Flight Operation Officer / Dispatcher Training

The Air Operator shall provide training in those subjects that apply specifically to the individual Air Operator's Flight Operations and Operational Control System. The Air Operator's Flight Dispatcher Training Program shall be approved by the CAA. Flight Dispatcher training includes the course itself, on-the-job training, cockpit familiarization, and a competency check. Recurrent training shall be given to each Flight Dispatcher once every 24 months.

6) Flight Operation Officer / Dispatcher Instructors

- a) Flight Dispatcher training instructors shall be knowledgeable and able to present their subject in an effective manner.
- b) Where the instructors used to teach course material are not themselves qualified Flight Operation Officer/Dispatcher, a



qualified Flight Dispatcher shall be available for coordinating and answering questions relating to the practical application of the course material.

7) On-the-Job Training

On-the-job training shall consist of a specified period of time during which the Flight Dispatcher candidate will perform the duties of a Flight Dispatcher under the direct supervision of a fully qualified Flight Dispatcher who is employed by the Air Operator. Each Air Operator shall specify the minimum duration of on-the-job training in its Company Operations Manual or Approved Training Manual, and the conditions of this training shall be arranged so that effective operational control is maintained.

8) Cockpit Familiarization Training

In order to provide Flight Operation Officer / Dispatcher and Flight Dispatcher candidates with practical experience of Flight Operations and the operational control system exercised by the Air Operator, the Air Operator shall provide cockpit familiarization training as part of both initial and recurrent training. The duration of this familiarization Training shall be specified in the Air Operator's Flight Dispatcher training program, which must be submitted to the CAA for approval.

9) Competency Checks

- a) After completion of on-the-job training, each Flight Dispatcher shall undergo a competency check administered by a CAA approved Flight Dispatcher Instructor employed by the Air Operator. In addition, each Flight Dispatcher must pass an annual competency check to be conducted after successful completion of recurrent training.
- b) The competency check shall take place during an operating shift and shall consist of an evaluation by direct observation of the Flight Dispatcher's competency, as applicable, in the following:
 - i. Basic job skills and knowledge;
 - ii. Sudan Civil Aviation Regulations and Sudan Civil Aviation Notices and Instructions relevant to a Flight Dispatcher and the Air Operator's Flight Operations and Operational Control System;
 - iii. Flight Duty Time Limitations (FDTL);
 - iv. Air Operator's operational control policies and procedures;
 - v. Air Operator's Operations Manuals;
 - vi. Aircraft performance analysis;
 - vii. Flight planning procedures and overflight clearances;
 - viii. Air Operator emergency and abnormal procedures through actual observation or simulated through questioning;
 - ix. Knowledge of the latest recurrent training and interim operating directives;
 - x. The Air Operator's administrative procedures relating to flight operations;



- xi. Knowledge relating to the interface between operations co-ordination and operational control functions;
- xii. Ability to prioritize and organize workload;
- xiii. Communications skills and procedures;
- xiv. Accuracy and thoroughness of work, in particular that relating to flight planning;
- xv. Assessment of alternates and their suitability;
- xvi. Ability to anticipate changes;
- xvii. Liaison ability with deck crewmembers and other Air Operator departments;
- xviii. Ability to analyze weather, perform weather watch, and understand the effects of weather changes;
- xix. Ability to brief deck crew and other Flight Operation Officer / Dispatcher on operational matters;
- xx. Ability to use and understand Notices to Airmen (NOTAMs);
- xxi. Ability to contact aircraft(s) during the Flight Watch stage and quickly and accurately forward information to flight crewmembers;
- xxii. Ability to plan for abnormal operations, such as landing gear malfunctions, surface contamination, and anti-skid inoperative, etc;
- xxiii. Knowledge of ATC procedures, such as flow control, delay programs, and re-routings, etc.;
- xxiv. Knowledge of Extended Range Twin-Engine Operations (ETOPS);
- xxv. Minimum Navigation Performance Specifications (MNPS);
- xxvi. Reduced Vertical Separation Minimum (RVSM); and
- xxviii. Human Factors relevant to dispatch duties.

11) The duration and results of the competency check, together with certification of the Flight Dispatcher's competency to perform operational duties shall be recorded on a competency check form, which once completed, shall be included on the Flight Dispatcher's training record.

12) Recurrent Training

Recurrent training shall cover those subjects specified in this standard for recurrent training at least once every two years, and it shall include cockpit familiarization.

13) Recency Training

- a) Where a previously qualified Flight Dispatcher has been absent from his duties with an Air Operator for a period in excess of 90 days, that Flight Dispatcher shall be given a briefing on all of the changes to the Air Operator's policies and procedures that occurred during his absence. The briefings shall be followed by a successful competency check by a CAA approved Flight Dispatcher Instructor.
- b) Where a previously qualified Flight Dispatcher has not actively dispatched with an Air Operator for a period in excess of 12 months, that Flight Dispatcher shall undergo a course of refresher training



that will include recurrent training and cockpit familiarization training. Requalification training shall be followed by a successful competency check by a CAA approved Flight Dispatcher Instructor.

14) New Route Training

When a Flight Dispatcher is introduced a new route that requires different procedures, that person shall undergo training to acquire the knowledge required for the new area of responsibility. This training shall include at least the following:

- a) a period of familiarization training on the facilities and aircraft types being dispatched;
- b) monitoring during an operating shift by a qualified Flight Dispatcher on that route for each new area of Flight Dispatch responsibility; and
- c) a certification of competency on the Flight Dispatcher's training record by the person who conducted the monitor.

15) Aircraft Type Transition Training

- a) When applying to add a new aircraft type to its Air Operator Certificate, an Air Operator shall submit a syllabus for Flight Dispatcher Aircraft Type Transition Training to the CAA for approval.
- b) The Flight Dispatcher shall successfully complete a Flight Operation Officer / Dispatcher Course with the aircraft manufacturer or by the Air Operator's Training Organization.

16) Validity

The certificate is valid for 24 Months plus the remainder of the month of the issue.

1.6.3 *Cabin Crewmember*

1) Minimum Qualifications

- a) The major function of cabin crewmember's responsibility for the safety and well-being of passengers in the aircraft cabin make it essential that a minimum standard of medical standard, knowledge, age and other qualifications are met.
- b) Specification of minimum standards helps ensure that individuals selected will be capable of mastering the training programme and will be able to perform the required safety and emergency duties. Without such minimum standards, cabin crew may not be able to develop the authority or self-confidence to lead an evacuation or manage other cabin emergencies. Cabin crew must be able to read and understand written instructions, exercise good judgment and communicate effectively to flight crewmembers, fellow cabin crewmembers and passengers in an emergency.
- c) The following requirements, applicable to cabin crew, are indicative of the minimum qualifications recommended:



- 2) **Education:** High school (11 years of schooling or more) or an equivalent degree;
- 3) **Age:** Minimum of 17 years;
- 4) **Height:** Able to reach safety equipment and open and close overhead bins in the aircraft from standing position;
- 5) **Weight:** Able to:
Move comfortably down the aisle, single file, facing forward;
Pass quickly through the smallest secondary cabin emergency exit window;
- 6) **Medical:** Shall meet Class 2 Medical Standards
- 7) Types of Training
 - a) Basically, regulatory provisions require that cabin crew annually complete the training programme established by the operator. They also require cabin crew to be knowledgeable about the location and operation of safety and emergency equipment for each type of aircraft on which they operate and to be trained to deal with both normal and emergency safety situations including relevant communication and crew co-ordination procedures.
 - b) *Initial Training* is required for persons who have not been previously employed by the airline as cabin crewmember. To be effective, initial training should be rapidly complemented by line indoctrination. Initial training shall ensure that each trainee acquires the knowledge necessary to fulfill the responsibilities and duties assigned to cabin crewmembers in the interest of safety. This will be primarily accomplished through classroom instruction complemented by a series of drills, exercises and hands-on training on safety and emergency procedures designed to provide the trainees with the skills necessary to perform their duties. The operator must establish minimum time of line indoctrination, approved by the Sudan CAA, for each aircraft type in its fleet. Each trainee must complete at least one check ride of sufficient duration to permit the trainee to perform, and be checked on, all pre-flight, pre-landing and post-landing duties. Additional training and checking may be performed on simulators, depending on the technical capabilities of the device; for example, exercises involving emergency lights, operable galley equipment, smoke or other technical capabilities may be performed on a simulator capable of producing the appropriate environment.
 - c) Line indoctrination shall be accomplished with an acceptable student-to instructor ratio; ideally one student to one instructor up to maximum of four to one, if there is more than one student per instructor. Safeguards must be in place to assure proper supervision, training and evaluation by the instructor. Indoctrination must have taken place before a cabin crewmember performs duties as a required cabin crewmember. Cabin crewmembers on line indoctrination are on board the aircraft for training purposes and must not be considered as part of the required minimum number of cabin



- crewmembers for flight. Line indoctrination must be initiated within 15 days of fulfilling the requirements of the ground-training portion of the operator's approved training programme.
- d) *Recurrent Training* is required to be performed each twelve-month period following initial of previous recurrent training. It is primarily provided to ensure the maintenance of knowledge and skills through a series of drills, exercise, quizzes, etc. and to familiarize crewmembers with new procedures and/or equivalent equipment introduced since their last training. Cabin crewmembers rarely get the opportunity to practice most of the skills, which have been learned during initial training and are needed in an emergency. Like many skills, which require periodic exercise, these skills are perishable. And since high stress levels or panic will degrade previously learned skills, rehearsal and continuing training is essential. Recurrent ensures the maintenance of such skills and their effective application as required.
 - e) *Aircraft Type Training* is required in order to qualify and maintain qualification on each type of aircraft to which the cabin crewmember will be assigned to duty.
 - f) *Human Performance* relevant to cabin crew duties and responsibilities.
- 8) Cabin Crew Leader
- The operator shall establish selection criteria for leader post in terms of minimum knowledge, experience, technical abilities, and personnel qualification of tact, initiative, and effective communication.
- 9) Operation of more than one type
- Subject to the detailed requirements and restrictions specified in SUCAR, Part 6 and specific documented arrangement with the Air Operator, cabin crewmember are allowed to operate more than one type. However, this number shall not be more than four type of aircraft.
- 10) Approval of Training Courses
- Training syllabus shall be in line with CAA document for "Cabin Crew Training Standards" and shall be included in the company operation manual.
- 11) Revision of Course Syllabus
- Requests for revising a training course syllabus shall be submitted in writing to the CAA for approval. These revisions shall be submitted in such form that the entire page or pages of the existing syllabus can be removed and replaced.
- 12) Training Records
- A training record shall be kept for each Cabin Crewmember who is employed by the Air Operator. This record shall contain information on all the training completed by the Cabin Crewmember, including results of all recent examination, copies of all other examinations taken in the



previous three years, records of on-the-job training, and all certifications of competency.

13) Validity

The certificate is valid for 10 Years plus the reminder of the month of the issue, subject to the validity of certain documents specified in the Licensing and Certification Requirements Procedure Manual.



CHAPTER 7

SPECIFICATIONS FOR PERSONNEL LICENSES

1.7.1 *General*

Personnel Licenses issued by the Licensing authority in accordance with the relevant provisions of this part shall conform to the following specification:

1.7.2 *Detail*

The following details shall appear on the License:

- 1) Authority and, where necessary, conditions under which the License is issued;
- 2) Name of the State (in bold type);
- 3) Title of License (in very bold type);
- 4) Date of issue;
- 5) Serial number of the License, in Arabic numerals;
- 6) Name of the holder in full (in Roman alphabet);
- 7) Date of birth;
- 8) Address of holder;
- 9) Nationality of holder;
- 10) Signature of holder;
- 11) Authorized Signature and issuing date;
- 12) Certification concerning validity and authorization for holder to exercise privileges appropriate to License;
- 13) Seal or stamp of Sudan CAA;
- 14) Ratings, e.g. category, class, type aircraft, airframe etc.;
- 15) Remarks, ie. Special endorsements relating to limitations and endorsements for privileges;
- 16) Any other details desired by the Licensing authority;

1.7.3 *Material*

First quality paper or other suitable material shall be used and the items mentioned in 1.5.2 shown clearly.

1.7.4 *Color*

- 1) Private Pilot - Aeroplane - Light Brown
 - 2) Commercial Pilot - Aeroplane - Light Gray *
 - 3) Airline Transport Pilot - Aeroplane - Dark Green
 - 4) Private Pilot - Helicopter - Light Blue *
 - 5) Commercial Pilot - Helicopter - Dark Gray
 - 6) Airline Transport Pilot - Helicopter - Light Green *
 - 7) Glider Pilot - Pink
 - 8) Free Balloon Pilot – Violet
 - 9) Flight Engineer - Dark Gray *
 - 10) Aircraft Maintenance Engineer - Dark Blue *
 - 11) Air Traffic Controller License - Yellow
- * Denotes variation from ICAO Annex 1 color specifications



1.7.5 *Language*

Licenses shall be issued in English Language.

1.7.6 *Arrangements of items*

Item headings are uniformly numbered in roman numerals as indicated in 1.9.2, so that on any License the number will, under any arrangement, refer to the same item heading.



CHAPTER 8

MEDICAL STANDARDS AND CERTIFICATION

1.8.1 *Applicability*

This Part prescribes the regulations governing the standards and requirements for issuing, revalidation and renewal of personnel Medical Certificates and the standards and requirements for the authorization of Medical Examiners.

Note1: Guidance material to assist Licensing Authorities and medical examiners is published separately in the current edition of the Manual of Civil Aviation Medicine (Doc 8984).

Note2: The requirements established in this Part cannot, on their own, be sufficiently detailed to cover all possible individual situations. Of necessity many decisions relating to the evaluation of medical fitness must be left to the judgment and discretion of the individual designated medical examiner. The evaluation must, therefore, be based on a medical examination conducted throughout in accordance with the high standards of medical practice. Due regard must be given to the privileges granted by the License applied for or held by the applicant for the Medical Assessment, and the conditions under which the License holder is going to exercise those privileges in carrying out assigned duties.

Note3: Attention is called to the administrative clause in 1.2.10(10) dealing with accredited medical conclusion.

1.8.2 *Medical Assessments — General*

- 1) Classes of Medical Assessment Three classes of Medical Assessment shall be established as follows:
 - a) Class 1 Medical Assessment; applies to applicants for, and holders of:
 - commercial pilot Licenses — aeroplane and helicopter
 - airline transport pilot Licenses — aeroplane and helicopter
 - flight engineer Licenses
 - b) Class 2 Medical Assessment; applies to applicants for, and holders of:
 - private pilot Licenses — aeroplane and helicopter
 - glider pilot Licenses
 - free balloon pilot Licenses
 - cabin crewmembers
 - c) Class 3 Medical Assessment; applies to applicants for, and holders of:
 - air traffic controller Licenses.
- 4) The applicant for a Medical Assessment shall provide the medical examiner with a personally certified statement of medical facts concerning personal, familial and hereditary history. The applicant shall be made aware of the necessity for giving a statement that is as complete



and accurate as the applicant's knowledge permits, and any false statement shall be dealt with in accordance with 1.2.10(6).

- 4) The medical examiner shall report to the Licensing Authority any individual case where, in the examiner's judgment, an applicant's failure to meet any requirement, whether numerical or otherwise, is such that exercise of the privileges of the License being applied for, or held, is likely to jeopardize flight safety (1.2.10(10)).
- 5) The requirements to be met for the renewal of a Medical Assessment are the same as those for the initial assessment except where otherwise specifically stated.

Note: The intervals between routine medical examinations for the purpose of renewing Medical Assessments are specified in 1.2.11(3).

1.8.3 Requirements for Medical Assessments

- 1) General An applicant for a Medical Assessment issued in accordance with the terms of 1.2.10(1) shall undergo a medical examination based on the following requirements:
 - a) physical and mental;
 - b) visual and colour perception; and
 - c) hearing.
- 2) Physical and mental requirements An applicant for any class of Medical Assessment shall be required to be free from:
 - a) any abnormality, congenital or acquired; or
 - b) any active, latent, acute or chronic disability; or
 - c) any wound, injury or sequel from operation; or
 - d) any effect or side-effect of any prescribed or non-prescribed therapeutic 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.
- 3) Visual acuity test requirements

The methods in use for the measurement of visual acuity are likely to lead to differing evaluations. To achieve uniformity, therefore, Medical Examiner shall ensure that equivalence in the methods of evaluation be obtained.
- 4) The following shall be adopted for tests of visual acuity:
 - a) Visual acuity tests shall be conducted in an environment with a level of illumination that corresponds to ordinary office illumination (30-60 cd/m²).
 - b) 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.
- 5) Color perception requirements
 - a) The applicant shall be required to demonstrate the ability to perceive readily those colors the perception of which is necessary for the safe performance of duties.
 - b) 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 color temperature such as that provided by CIE standard illuminates C or D65 as specified by the International Commission on Illumination (CIE).
- c) 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 colors used in air navigation and correctly identify aviation colored 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.
 - d) Sunglasses worn during the exercise of the privileges of the License or rating held should be non-polarizing and of a neutral grey tint.
- 6) Hearing requirements Hearing requirements are established in addition to the ear examinations conducted during the medical examination for the physical and mental requirements. The applicant shall be required to be free from any hearing defect which would interfere with the safe performance of duties in exercising the privileges of the License.

Note1.— The reference zero for calibration of pure-tone audiometers used for applying 1.8.6.22 for Class 1 and 1.8.8.4 for Class 3 is that of the International Organization for Standardization (ISO) Recommendation R389, 1964.

Note2.— The frequency composition of the background noise referred to in 1.8.6.22(a) and 1.8.8.4 (a) is defined only to the extent that the frequency ranges 600 to 4 800 Hz is adequately represented.

Note3.— In the choice of speech material, aviation-type material is not to be used exclusively for the above tests. Lists of phonetically balanced words in use by a number of Contracting States have given satisfactory results.

Note4.— A quiet room for the purposes of testing the hearing requirements is a room in which the intensity of the background noise is less than 50 dB when measured on “slow” response of an “A”-weighted sound level meter.

Note5.— For the purposes of hearing requirements, the sound level of an average conversational voice at point of output ranges from 85 to 95 dB.

1.8.4 Medical Standards - General

1.8.4.1 Medical fitness

- a) Fitness.
The holder of a medical certificate shall be mentally and physically fit to exercise safely the privileges of the applicable License.
- b) *Requirement for medical certificate.* In order to apply for or to exercise the privileges of a License, the applicant or the holder shall hold a medical certificate issued in accordance with the provisions of Chapter 10 of this Part and appropriate to the privileges of the License.



- c) Aeromedical disposition.
After completion of the examination the applicant shall be advised whether fit, unfit or referred to the Licensing Authority. The Authorised Medical Examiner (AME) shall inform the applicant of any condition(s) (medical, operational or otherwise) that may restrict flying training and/or the privileges of any License issued.

1.8.4.2 Decrease in medical fitness

- a) *Holders of medical certificates* shall not exercise the privileges of their Licenses, related ratings or authorisations at any time when they are aware of any decrease in their medical fitness, which might render them unable to safely exercise those privileges.
- b) Holders of medical certificates shall not take any prescription or non-prescription medication or drug, or undergo any other treatment, unless they are completely sure that the medication, drug or treatment will not have any adverse effect on their ability to perform safely their duties. If there is any doubt, advice shall be sought from an AME.
- c) Holders of medical certificates shall, without undue delay, seek the advice of an AME when becoming aware of:
 - 1) hospital or clinic admission for more than 12 hours; or
 - 2) surgical operation or invasive procedure; or
 - 3) the regular use of medication; or
 - 4) the need for regular use of correcting lenses.
- d) Holders of medical certificates who are aware of:
 - 1) any significant personal injury involving incapacity to function as a member of a flight crew; or
 - 2) any illness involving incapacity to function as a member of a flight crew throughout a period of 21 days or more; or
 - 3) being pregnant, shall inform the Authority in writing of such injury or pregnancy, and as soon as the period of 21 days has elapsed in the case of illness. The medical certificate shall be deemed to be suspended upon the occurrence of such injury or the elapse of such period of illness or the confirmation of the pregnancy;
 - 4) in the case of injury or illness the suspension shall be lifted upon the holder being medically being examined by an AME and being pronounced fit to function as a member of the flight crew, or upon the AME exempting, subject to such conditions as he thinks fit, the holder from the requirement of a medical examination; and
 - 5) in the case of pregnancy, the suspension may be lifted by the AME for such period and subject to such conditions as it thinks fit and shall cease upon the holder being medically examined under arrangements made by the AME after the pregnancy has ended and being pronounced fit to resume her functions as a member of the flight crew.

1.8.4.3 Special circumstances

- a) It is recognized that the provisions of all requirements of personnel Licensing will not cover every possible situation. Where the application would have anomalous consequences, or where the



development of new training or testing concepts would not comply with the requirements, an applicant may apply to the Licensing Authority for an exemption. An exemption may be granted only if it can be shown that the exemption will ensure or lead to at least an equivalent level of safety.

- b) Exemptions are divided into short term exemptions and long term exemptions (more than 6 months). The granting of a long term exemption may only be undertaken in agreement with the established requirements.

1.8.4.4 Curtailment of privileges of License holders aged 60 years or more
The holder of a pilot License who has attained the age of 60 years shall not act as a pilot of an aircraft engaged in commercial air transport operations.

1.8.4.5 Medical Confidentiality.

- (a) Medical Confidentiality shall be respected at all times. The Licensing Authority will ensure that all oral or written reports and electronically stored information on medical matters of License holders/applicants are made available to an AME, in order to be used for completion of a medical assessment. The applicant or his physician shall have access to all such documentation in accordance with national law.
- (b) The CAA authority has full right at all time to access any License holder's file in the interest of public safety.

1.8.4.6 Aeromedical Centres (AMCs)

Aeromedical centres (AMCs) will be designated and authorised, or reauthorized, at the discretion of the Licensing Authority for a period not exceeding 3 years.

An AMC shall be:

- a) engaged in clinical aviation medicine and related activities;
- b) headed by an Authorised Medical Examiner (AME), responsible for coordinating assessment results and signing reports and certificates, and shall have on staff physicians with advanced training and experience in aviation medicine;
- c) equipped with medico-technical facilities for extensive aero medical examinations.

1.8.4.7 Aeromedical examinations

- a) For Class 1 medical certificate.
Initial examinations for a Class 1 medical certificate shall be carried out at an AMC. Revalidation and renewal examinations may be delegated to an AME.
- b) For Class 2 and Class 3 medical certificates.
Initial, revalidation and renewal examinations for a Class 2 medical certificate shall be carried out at an AMC or by an AME.



- c) The applicant shall complete the appropriate application form. On completing a medical examination the AME shall submit without delay a signed full report to the CAA for all classes Class 1, 2 and 3 examinations, except that, in the case of an AMC, the Head of the AMC may sign the reports and certificates on the basis of assessments made by staff physicians of the AMC.
- d) Periodic Requirements.
For a summary of special investigations required at initial, routine revalidation or renewal, and extended revalidation and renewal examination see JAR IEM 3.095(a) & (b).

1.8.4.8 Medical certificates

- a) Content of certificate.
The medical certificate shall contain the following information:
 - 1) Reference number (as designated by the Authority)
 - 2) Class of certificate
 - 3) Full name
 - 4) Date of birth
 - 5) Nationality
 - 6) Date and place of initial medical examination
 - 7) Date of next electrocardiography
 - 8) Date of next eudiometry
 - 9) Limitations, conditions and/or variations
 - 10) AME name, number and signature
 - 11) Date of general examination
- b) Initial issue of medical certificates.
Initial Class 1 medical certificates shall be issued by the AMS. The issue of initial Class 2 and Class 3 certificates shall be by the AME or may be delegated to an AMC or AME.
- c) Revalidation and renewal of medical certificates.
Class 1, 2 or 3 medical certificates may be re-issued by an AMS, or may be delegated to an AMC.
- d) Disposition of certificate
 - 1) A medical certificate shall be issued to the person examined once the examination is completed and a fit assessment made.
 - 2) The holder of a medical certificate shall submit it to the AMS for further action if required.
 - 3) The holder of a medical certificate shall present it to the AME at the time of the revalidation or renewal of that certificate.
- e) Certificate annotation, variation, limitation or suspension
 - 1) When a review has been performed and a variation granted in accordance with Paragraph 1.8.4.11 this fact shall be stated on the medical certificate in addition to any conditions that may be required, and may be entered on the License at the discretion of the Authority.
 - 2) Following a medical certificate renewal examination, the AMS may, for medical reasons duly justified and notified to the applicant and the AMC or AME, limit or suspend a medical certificate issued by the AMC or by the AME.



- (f) Denial of Certificate
 - 1) An applicant who has been denied a medical certificate will be informed of this in writing in accordance with IEM 3.100 and of his right of review by the Authority.
 - 2) Information concerning such denial will be collated by the Authority within 5 working days and be made available to other Authorities. Medical information supporting this denial will not be released without prior consent of the applicant.

1.8.4.9 Period of validity of medical certificates

- a) Period of validity.

A medical certificate shall be valid from the date of the initial general medical examination and for:

 - 1) Class 1 medical certificates, 12 months except that for holders who have passed their 40th birthday the interval is reduced to six months plus the remainder of the month of issue.
 - 2) Class 2 medical certificates, 60 months until age 30, then 24 months until age 50, 12 months until age 65 and six months thereafter plus the remainder of the month of issue.
 - 3) The expiry date of the medical certificate is calculated on the basis of the information contained in (1) and (2). The validity period of a medical certificate (including any associated extended examination or special investigation) shall be determined by the age at which the medical examination of the applicant takes place.
 - 4) Despite (2) above, a medical certificate issued prior to the holder's 30th birthday will not be valid for Class 2 privileges after his 32nd birthday.
- b) Revalidation

The medical revalidation shall be taken prior to the expiry date calculated in accordance with paragraph (a) above.
- b) Renewal.

If the medical examination is not taken within the validity date of the medical certificate then, the Licensing authority written permission is required before the medical certificate is renewed.
- d) Requirements for revalidation or renewal.

The requirements to be met for the revalidation or renewal of medical certificates are the same as those for the initial issue of the certificate, except where specifically stated otherwise.
- e) Reduction in the period of validity.

The period of validity of a medical certificate may be reduced by an AME in consultation with the AMS when clinically indicated.
- f) Additional examination.

Where the Authority has reasonable doubt about the continuing fitness of the holder of a medical certificate, the AMS may require the holder to submit to further examination, investigation or tests. The reports shall be forwarded to the AMS.



1.8.4.10 Use of Medication, drugs or other treatments

- a) A medical certificate holder who is taking any prescription or non-prescription medication or drug or who is receiving any medical, surgical, or other treatment shall comply with the requirements of 1.8.4.2. Further advice is given in IEM 3.040.
- b) All procedures requiring the use of a general or spinal anaesthetic shall be disqualifying for at least 48 hours.
- c) All procedures requiring local or regional anaesthetic shall be disqualifying for at least 12 hours.

1.8.4.11 Variation and review policy

a) AMS Review.

If the medical requirements prescribed in Chapter 10 of this Part for a particular License are not fully met by an applicant the appropriate medical certificate shall not be issued, revalidated or renewed by the AMC or AME but the decision shall be referred to the Authority. If there are provisions in Chapter 10 of this Part that the individual under certain conditions (as indicated by the use of should or may) can be considered fit, a variation may be granted by the Authority. The AMS may issue, revalidate or renew a medical certificate after due consideration has been given to the requirements, acceptable means of compliance and guidance material and to:

- 1) the medical deficiency in relation to the operating environment;
- 2) the ability, skill and experience of the applicant in the relevant operating environment;
- 3) a medical flight test, if appropriate; and
- 4) the requirement for application of any limitations, conditions or variations to the medical certificate and License. Where the issue of a certificate will require more than one limitation, condition or variation, the additive and interactive effects upon flight safety must be considered by the AMS before a certificate can be issued.

b) Secondary review.

The Licensing authority may call for a secondary review procedure, with independent medical advisers, experienced in the practice of aviation medicine, to consider and evaluate contentious cases.

1.8.5 *Validity of medical certificates*

1.8.5.1 Class 1

- a) Subject to any other conditions specified in Chapter 10 of this Part a Class 1 Medical Certificate shall remain valid as long as:
 - i. the preceding aero medical examination has been performed within the last 12 months.
 - ii. the preceding extended aero medical examination (or initial examination) has been performed within the last 60 months. From the age of 40 years and to the age of 60 years, inclusive:
 - iii. the preceding aero medical examination has been performed within the last 6 months;
 - iv. the preceding extended aero medical examination has been performed within the last 24 months.



- b) If a License holder allows his Medical Certificate to expire by more than five years, renewal shall require an initial or extended, at AMS discretion, aero medical examination, performed at an AMC or by an AME which has obtained his medical records. (EEG may be omitted unless clinically indicated.)
- c) If a License holder allows his Medical Certificate to expire by more than two years but less than five years, renewal shall require the prescribed standard or extended examination to be performed at an AMC which has obtained his medical file, or by an AME at the discretion of the AMS, subject to the records of medical examinations for flight crew Licenses being made available to the medical examiners.
- d) If a License holder allows his certificate to expire by more than 90 days but less than two years, renewal shall require the prescribed standard or extended examination to be performed at an AMC, or by an AME at the discretion of the AMS.
- e) If a License holder allows his certificate to expire by less than 90 days, renewal shall be possible by standard or extended examination as prescribed.

1.8.5.2 Class 2

- a) Subject to any other conditions in SUCAR a Class 2 Medical Certificate shall remain valid as long as:
 - i. the preceding aero medical examination has been performed within the last 60 months; before the 30th birthday.
 - ii. the preceding aero medical examination has been performed within the last 24 months; from the age of 30 years and to the age of 49 years, inclusive:
 - iii. the preceding aero medical examination has been performed within the last 12 months; from the age of 50 years to the age of 60 years, inclusive.
- b) If an Instrument Rating is added to the License, pure tone audiometry must have been performed within the last 60 months if the License holder is 39 years of age or younger, and within the last 24 months if the License holder is 40 years of age or older.
- c) If a License holder allows his Medical Certificate to expire by more than five years, renewal shall require an initial aero medical examination. Prior to the examination the medical file shall be obtained by the AME.
- d) If a License holder allows his Medical Certificate to expire by more than one year but less than five years, renewal shall require the prescribed examination to be performed. Prior to the examination the medical file shall be obtained by the AME.
- e) If a License holder allows his certificate to expire by less than one year, renewal shall require the prescribed examination to be performed. Wherever the term month is used, it means calendar month. An extended aero medical examination shall always be considered to contain a standard aero medical examination and thus count both as a standard and an extended examination.



1.8.5.3 Class 3

A class 3 medical certificate is valid for Air Traffic Controller - 24 Months

1.8.6 *Class 1 Medical Requirements*

1.8.6.1 Cardiovascular system – Examination

- a) An applicant for or holder of a Class 1 medical certificate shall not possess any abnormality of the cardiovascular system, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) A standard 12-lead resting electrocardiogram (ECG) and report are required at the examination for first issue of a medical certificate, then every 5 years until age 30, every 2 years until age 40, annually until age 50, and every 6 months thereafter and on clinical indication.
- c) Exercise electrocardiography is required only when clinically indicated in compliance with paragraph 1 Appendix 1 to Subpart B.
- d) Reporting of resting and exercise electrocardiograms shall be by specialists acceptable to the AMS.
- e) Estimation of serum/plasma lipids, including cholesterol, is required to facilitate risk assessment at the examination for first issue of a medical certificate, and at the first examination after age 40 (see paragraph 2, Appendix 1 to Subpart B).

1.8.6.2 Cardiovascular system – Blood pressure

- a) The blood pressure shall be recorded with the technique given in paragraph 3 Appendix 1 to Subpart B.
- b) When the blood pressure at examination consistently exceeds 160 mmHg systolic and/or 95 mmHg diastolic, with or without treatment, the applicant shall be assessed as unfit.
- c) Treatment for the control of blood pressure shall be compatible with the safe exercise of the privileges of the applicable License(s) and be compliant with paragraph 4 Appendix 1 to Subpart B. The initiation of drug therapy shall require a period of temporary suspension of the medical certificate to establish the absence of significant side effects.
- d) Applicants with symptomatic hypotension shall be assessed as unfit.

1.8.6.3 Cardiovascular system – Coronary artery disease

- a) Applicants with suspected coronary artery disease shall be investigated. Applicants with asymptomatic minor coronary artery disease, requiring no treatment may only be considered fit by the AMS subject to compliance with paragraph 5 Appendix 1 to Subpart B.
- b) Applicants with symptomatic coronary artery disease shall be assessed as unfit.
- c) Applicants following myocardial infarction shall be assessed as unfit at the initial examination. A fit assessment may be considered



by the AMS at renewal and revalidation examinations subject to compliance with paragraph 6 Appendix 1 to Subpart B.

- d) Applicants following coronary by-pass surgery or coronary angioplasty/scenting shall be assessed as unfit at the initial examination. A fit assessment may be considered by the AMS at renewal and revalidation examinations subject to compliance with paragraph 7 Appendix 1 to Subpart B.

1.8.6.4 Cardiovascular system – Rhythm/conduction disturbances

- a) Applicants with significant disturbance of supraventricular rhythm, including senatorial dysfunction, whether intermittent or established, shall be assessed as unfit. A fit assessment may be considered by the AMS in compliance with paragraph 8 Appendix 1 to Subpart B.
- b) Applicants with asymptomatic sinus bradycardia or sinus tachycardia may be assessed as fit in the absence of underlying abnormality.
- c) Applicants with asymptomatic isolated uniform arterial or ventricular entopic complexes need not be assessed as unfit. Frequent or complex forms require full cardio logical evaluation in compliance wit paragraph 8 Appendix 1 to Subpart B.
- d) In the absence of any other abnormality, applicants with incomplete bundle branch block or stable left axis deviation may be assessed as fit.
- e) Applicants with complete right or left bundle branch block require craniological evaluation on first presentation and subsequently in compliance with paragraph 8 Appendix 1 to Subpart B.
- f) Applicants with broad and/or narrow complex tachycardias shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 8 Appendix 1 to Subpart B.
- g) Applicants with an endocardial pacemaker shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 8 Appendix 1 to Subpart B.

1.8.6.5 Cardiovascular system – General

- a) Applicants with peripheral arterial disease before or after surgery shall be assessed as unfit. Provided there is no significant functional impairment, a fit assessment may be considered by the AMS subject to compliance with paragraphs 5 and 6, Appendix 1 to Subpart B.
- b) Applicants with aneurysm of the thoracic or abdominal aorta, before or after surgery, shall be assessed as unfit. Applicants with aneurysm of the infra-renal abdominal aorta may be considered by the AMS at renewal or revalidation examinations, subject to compliance with paragraph 9 Appendix 1 to Subpart B.
- c) Applicants with significant abnormality of any of the heart valves shall be assessed as unfit.
 - 1) Applicants with minor cardiac valvular abnormalities may be assessed as fit by the AMS subject to compliance with paragraph 10 (a) and (b) Appendix 1 to Subpart B.



- 2) Applicants with cardiac valve replacement/repair shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 10© of Appendix 1 to Subpart B.
- d) Systemic anticoagulant therapy is disqualifying. Applicants who have received treatment of limited duration may be considered for a fit assessment by the AMS subject to compliance with paragraph 11 Appendix 1 to Subpart B.
- e) Applicants with any abnormality of the pericardium, myocardium or endocardium not covered above shall be assessed as unfit. A fit assessment may be considered by the AMS following complete resolution and satisfactory cardiological evaluation in compliance with paragraph 12 Appendix 1 to Subpart B.
- f) Applicants with congenital abnormality of the heart, before or after corrective surgery, shall be assessed as unfit. Applicants with minor abnormalities may be assessed as fit by the AMS following cardiological investigation in compliance with paragraph 13 Appendix 1 to Subpart B.
- g) Heart or heart/lung transplantation is disqualifying.
- h) Applicants with a history of recurrent vasovagal syncope shall be assessed as unfit. A fit assessment may be considered by the AMS in applicants with a suggestive history subject to compliance with paragraph 14 Appendix 1 to Subpart B.

1.8.6.6 Respiratory system – General

- a) An applicant for or the holder of a Class 1 medical certificate shall not possess any abnormality of the respiratory system, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) Posterior/anterior chest radiography is required at the initial examination. It may be required at revalidation/renewal examinations when indicated on clinical or epidemiological grounds.
- c) Pulmonary function tests (see paragraph 1 Appendix 2 to Subpart B) are required at the initial examination. A peak flow test shall be performed at first revalidation or renewal examination after age 30, every 5 years until age 40, and every 4 years thereafter and on clinical indication. Applicants with significant impairment of pulmonary function (see paragraph 1 Appendix 2 to Subpart B) shall be assessed as unfit.

1.8.6.7 Respiratory system – Disorders

- a) Applicants with chronic obstructive airway disease shall be assessed as unfit.
- b) Applicants with reactive airway disease (bronchial asthma) requiring medication shall be assessed in compliance with paragraph 2 Appendix 2 to Subpart B.
- c) Applicants with active inflammatory disease of the respiratory system shall be assessed as temporarily unfit.



- d) Applicants with active sarcoidosis shall be assessed as unfit (see paragraph 3 Appendix 2 to Subpart B).
- e) Applicants with spontaneous pneumothorax shall be assessed as unfit pending full evaluation in compliance with paragraph 4 Appendix 2 to Subpart B.
- f) Applicants requiring major chest surgery shall be assessed as unfit for a minimum of three months following operation and until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable License(s) (see paragraph 5 Appendix 2 to Subpart B).
- g) Applicants with unsatisfactorily treated sleep apnoea syndrome shall be assessed as unfit.

1.8.6.8 Digestive system – General

An applicant for or the holder of a Class 1 medical certificate shall not possess any functional or structural disease of the gastro-intestinal tract or its adnexa which is likely to interfere with the safe exercise of the privileges of the applicable License(s).

1.8.6.9 Digestive system – Disorders

- a) Applicants with recurrent dyspeptic disorders requiring medication or with pancreatitis shall be assessed as unfit pending assessment in compliance with paragraph 1 Appendix 3 to Subpart B.
- b) Applicants with asymptomatic gallstones discovered incidentally shall be assessed in compliance with paragraph 2 Appendix 3 to Subpart B.
- c) Applicants with an established diagnosis or history of chronic inflammatory bowel disease shall normally be assessed as unfit (see paragraph 3 Appendix 3 to Subpart B).
- d) Applicants shall be required to be completely free from those herniae that might give rise to incapacitating symptoms.
- e) Applicants with any sequela of disease or surgical intervention in any part of the digestive tract or its adnexa likely to cause incapacitation in flight, in particular any obstruction due to stricture or compression shall be assessed as unfit.
- f) Applicants who have undergone a surgical operation on the digestive tract or its adnexa, involving a total or partial excision or a diversion of any of these organs, shall be assessed as unfit for a minimum period of three months or until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable License(s) (see paragraph 4 Appendix 3 to Subpart B).

1.8.6.10 Metabolic, nutritional and endocrine diseases

- a) An applicant for or the holder of a Class 1 medical certificate shall not possess any functional or structural metabolic, nutritional or endocrine disorder which is likely to interfere with the safe exercise of the privileges of the applicable License(s).



- b) Applicants with metabolic, nutritional or endocrine dysfunctions may be assessed as fit in accordance with paragraph 1 Appendix 4 to Subpart B.
- c) Applicants with diabetes mellitus may be assessed as fit only in accordance with paragraphs 2 and 3 Appendix 4 to Subpart B.
- d) Applicants with diabetes requiring insulin shall be assessed as unfit.
- e) Applicants with a Body Mass Index ≥ 35 may be assessed as fit only if the excess weight is not likely to interfere with the safe exercise of the applicable License(s) and a satisfactory cardiovascular risk review has been undertaken (see paragraph 1 Appendix 9 to Subpart C).

1.8.6.11 Haematology

- a) An applicant for or the holder of a Class 1 medical certificate shall not possess any haematological disease which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) Haemoglobin shall be tested at every medical examination and cases of significant anaemia with a haematocrit below 32% shall be assessed as unfit (see paragraph 1 Appendix 5 to Subpart B).
- c) Applicants with sickle cell disease shall be assessed as unfit (see paragraph 1 Appendix 5 to Subpart B).
- d) Applicants with significant localised and generalised enlargement of the lymphatic glands and diseases of the blood shall be assessed as unfit (see paragraph 2 Appendix 5 to Subpart B).
- e) Applicants with acute leukaemia shall be assessed as unfit. After established remission, certification may be considered by the AMS. Initial applicants with chronic leukaemias shall be assessed as unfit. (For certification see paragraph 3 Appendix 5 to Subpart B).
- f) Applicants with significant enlargement of the spleen shall be assessed as unfit (see paragraph 4 Appendix 5 to Subpart B).
- g) Applicants with significant polycythaemia shall be assessed as unfit (see paragraph 5 Appendix 5 to Subpart B).
- h) Applicants with a coagulation defect shall be assessed as unfit (see paragraph 6 Appendix 5 to Subpart B).

1.8.6.12 Urinary system

- a) An applicant for or the holder of a Class 1 medical certificate shall not possess any functional or structural disease of the urinary system or its adnexa which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) Applicants presenting any signs of organic disease of the kidney shall be assessed as unfit. Urinalysis shall form part of every medical examination. The urine shall contain no abnormal element considered to be of pathological significance. Particular attention shall be paid to disease affecting the urinary passages and the genital organs. (see paragraph 1 Appendix 6 to Subpart B).
- c) Applicants presenting with urinary calculi shall be assessed as unfit (see paragraph 2 Appendix 6 to Subpart B).
- d) Applicants with any sequela of disease or surgical procedures on the kidneys and the urinary tract likely to cause incapacitation, in



particular any obstruction due to stricture or compression shall be assessed as unfit. An applicant with compensated nephrectomy without hypertension or uraemia may be considered fit (see paragraph 3 Appendix 6 to Subpart B).

- e) Applicants who have undergone a major surgical operation in the urinary tract or the urinary apparatus involving a total or partial excision or a diversion of any of its organs shall be assessed as unfit for a minimum period of three months and until such time as the effects of the operation are no longer likely to cause incapacity in flight (see paragraphs 3 and 4 Appendix 6 to Subpart B).

1.8.6.13 Sexually transmitted diseases and other infections

- a) An applicant for or holder of a Class 1 medical certificate shall have no established medical history or clinical diagnosis of any sexually transmitted disease or other infection which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) Particular attention (see Appendix 7 to this Subpart) shall be paid to a history of or clinical signs indicating:
 - 1) HIV positivity,
 - 2) immune system impairment,
 - 3) infectious hepatitis,
 - 4) syphilis.

1.8.6.14 Gynaecology and obstetrics

- a) An applicant for or the holder of a Class 1 medical certificate shall not possess any functional or structural obstetric or gynaecological condition which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) An applicant with a history of severe menstrual disturbances unamenable to treatment shall be assessed as unfit.
- c) Pregnancy entails unfitness. If obstetric evaluation indicates a completely normal pregnancy, the applicant may be assessed as fit until the end of the 26th week of gestation, in accordance with paragraph 1 Appendix 8 to Subpart B. License privileges may be resumed upon satisfactory confirmation of full recovery following confinement or termination of pregnancy.
- d) An applicant who has undergone a major gynaecological operation shall be assessed as unfit for a minimum period of three months and until such time as the effects of the operation are not likely to interfere with the safe exercise of the privileges of the License(s) (see paragraph 2 Appendix 8 to Subpart B).

1.8.6.15 Musculoskeletal requirements

- a) An applicant for or holder of a Class 1 medical certificate shall not possess any abnormality of the bones, joints, muscles and tendons, congenital or acquired which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) An applicant shall have sufficient sitting height, arm and leg length and muscular strength for the safe exercise of the privileges of the applicable License (see paragraph 1 Appendix 9 to Subpart B).



- c) An applicant shall have satisfactory functional use of the musculoskeletal system. An applicant with any significant sequela from disease, injury or congenital abnormality of the bones, joints, muscles or tendons with or without surgery shall be assessed in accordance with paragraphs 1, 2 and 3 Appendix 9 to Subpart B.

1.8.6.16 Psychiatric requirements

- a) An applicant for or holder of a Class 1 medical certificate shall have no established medical history or clinical diagnosis of any psychiatric disease or disability, condition or disorder, acute or chronic, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable License(s),
- b) Particular attention shall be paid to the following (see Appendix 10 to Subpart B):
 - 1) Schizophrenia, schizotypal and delusional disorders,
 - 2) psychotic symptoms,
 - 3) mood disorders,
 - 4) neurotic, stress-related and somatoform disorders,
 - 5) organic mental disorders,
 - 6) mental and behavioural disorders due to alcohol,
 - 7) use or abuse of psychotropic drugs or other substances.

1.8.6.17 Neurological requirements

- a) An applicant for or holder of a Class 1 medical certificate shall have no established medical history or clinical diagnosis of any neurological condition, which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) Particular attention shall be paid to the following (see Appendix 11 to Subpart B):
 - 1) progressive disease of the nervous system,
 - 2) epilepsy and other causes of disturbance of consciousness,
 - 3) conditions with a high propensity for cerebral dysfunction,
 - 4) head injury,
 - 5) spinal or peripheral nerve injury.
- c) Electroencephalography is required at the initial examination (see Appendix 11 to Subpart B) and when indicated by the applicant's history or on clinical grounds.

1.8.6.18 Ophthalmological requirements

- a) An applicant for or holder of a Class 1 medical certificate shall not possess any abnormality of the function of the eyes or their adnexa or any active pathological condition, congenital or acquired, acute or chronic, or any sequela of eye surgery or trauma, which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) An ophthalmological examination is required at the initial examination (see Paragraph 1(a) Appendix 12 to Subpart B) and shall include:
 - 1) History;



- 2) Visual acuity, near, intermediate and distant vision: uncorrected ; with best optical correction if needed;
 - 3) Objective refraction. Hyperopic applicants under age 25 in cycloplegia;
 - 4) Ocular motility and binocular vision;
 - 5) Color vision;
 - 6) Visual fields;
 - 7) Tonometry on clinical indication and over age 40;
 - 8) Examination of the external eye, anatomy, media and funduscopy. Slit lamp examination;
- c) A routine eye examination shall form part of all revalidation and renewal examinations (see paragraph 2 Appendix 12 to Subpart B) and shall include:
- 1) History;
 - 2) Visual acuity, near, intermediate and distant vision: uncorrected; with best optical correction if needed;
 - 3) Morphology by ophthalmoscopy;
 - 4) Further examination on clinical indication.
- (d) Where, in certificate holders the functional performance standards (6/9, 6/9, 6/6, N14, N5) can only be reached with corrective lenses, the applicant shall supply to the AME an examination report from an ophthalmologist or vision care specialist acceptable to the AMS (see paragraph 3 Appendix 12 to Subpart B). The report must refer to an examination, which was carried out at the time of the general medical examination and in any case not more than 24 months before the general medical examination. The examination shall include:
- 1) History;
 - 2) Visual acuity, near, intermediate and distant vision: uncorrected; with best optical correction if needed;
 - 3) Refraction;
 - 4) Ocular motility and binocular vision;
 - 5) Color vision;
 - 6) Visual fields;
 - 7) Tonometry over age 40;
 - 8) Examination of the external eye, anatomy, media and funduscopy. Slit lamp examination;

The report shall be forwarded to the AMS. If any abnormality is detected, such that the applicant's ocular health is in doubt, further ophthalmological examination will be required (see paragraph 4 Appendix 12 to Subpart B)

- e) Where specialists' ophthalmological examinations are required for any reason, the medical certificate is to be marked with the limitation "Requires specialist ophthalmological examination – RXO". Such limitation may be applied by an AME but may only be removed by the AMS.

1.8.6.19 Visual requirements

- (a) *Distant visual acuity*. Distant visual acuity, with or without correction, shall be 6/9 (0, 7) or better in each eye separately and



- visual acuity with both eyes shall be 6/6 (1, 0) or better (see Paragraph (g) below). No limits apply to uncorrected visual acuity.
- (b) *Refractive errors.* Refractive error is defined as the deviation from emmetropia measured in dioptres in the most ametropic meridian. Refraction shall be measured by standard methods (see paragraph 1 Appendix 13 to Subpart B). Applicants shall be considered fit with respect to refractive errors if they meet the following requirements:
- 1) Refractive error
 - i. At the initial examination the refractive error shall not exceed ± 3 diopters (see paragraph 2(a) Appendix 13 to Subpart B)
 - ii. At revalidation or renewal examinations, an applicant experienced to the satisfaction of the Authority with refractive errors up to $+5/-8$ diopters may be considered fit by the AMS (see paragraph 2 (b) Appendix 13 to Subpart B)
 - 2) Astigmatism
 - i. In an initial applicant with a refractive error with an astigmatic component, the astigmatism shall not exceed 2.0 diopters.
 - ii. At recertification or renewal examinations, an applicant experienced to the satisfaction of the Authority with a refractive error with an astigmatic component not exceeding 3.0 diopters may be considered fit by the AMS
 - 3) Keratoconus is disqualifying. The AMS may consider recertification if the applicant meets the visual requirements (see paragraph 3 Appendix 13 to Subpart B)
 - 4) Anisometropia
 - i. In initial applicants the difference in refractive error between the two eyes (anisometropia) shall not exceed 2.0 diopters.
 - ii. At recertification or renewal examination, an applicant experienced to the satisfaction of the Authority with a difference in refractive error between the two eyes of up to 3.0 diopters may be considered fit by the AMS.
 - 5) The development of presbyopia shall be followed at all aeromedical renewal examinations.
 - 6) An applicant shall be able to read N5 chart (or equivalent) at 30-50 cms and N14 chart (or equivalent) at 100 cms, with correction if prescribed (see Paragraph (g) below)
 - c) An applicant with significant defects of binocular vision shall be assessed unfit. There is no stereoscopic test requirement (see paragraph 4 Appendix 13 to Subpart.
 - d) An applicant with diplopia shall be assessed unfit.
 - e) An applicant with imbalance of the ocular muscle (heterophorias) exceeding (when measured with usual correction, if prescribed):
 - 2.0 prism diopters in hyperphoria at 6 meters,
 - 1.0 prism diopters in esophoria at 6 meters,
 - 8.0 prism diopters in exophoria at 6 meters, and



- 1.0 prism diopters in hyperphoria at 33 cms, 6.0 prism diopters in esophoria at 33 cms, 12.0 prism diopters in exophoria at 33 cms shall be assessed as unfit. If the fusional reserves are sufficient to prevent asthenopia and diplopia the AMS may consider a fit assessment (see paragraph 5 Appendix 13 to Subpart B)
- f) An applicant with visual fields which are not normal shall be assessed unfit (see paragraph 4 Appendix 13 to Subpart B)
- g) 1) If a visual requirement is met only with the use of correction, the spectacles or contact lenses must provide optimal visual function and be suitable for aviation purposes.
- 2) Correcting lenses, when worn for aviation purposes, shall permit the License holder to meet the visual requirements at all distances. No more than one pair of spectacles shall be used to meet the requirements.
- 3) A spare set of similarly correcting spectacles shall be readily available when exercising the privileges of the License.
- h) Eye surgery
- 1) Refractive surgery entails unfitness. Certification may be considered by the AMS (see paragraph 6 Appendix 13 to Subpart B)
- 2) Cataract surgery, retinal surgery and glaucoma surgery entails unfitness. Recertification may be considered by the AMS (see paragraph 7 Appendix 13 to Subpart B)

1.8.6.20 Color perception

- a) Normal color perception is defined as the ability to pass the Ishihara test or to pass Nagel's anomaloscope as a normal trichromate (see paragraph 1 Appendix 14 to Subpart B).
- b) An applicant shall have normal perception of colors or be color safe. Applicants who fail Ishihara's test shall be assessed as color safe if they pass extensive testing with methods acceptable to the AMS (anomaloscopy or color lanterns – see paragraph 2 Appendix 14 to Subpart B).
- c) An applicant who fails the acceptable color perception tests is to be considered colour unsafe and shall be assessed as unfit.

1.8.6.21 Otorhinolaryngological requirements

- a) An applicant for or holder of a Class 1 medical certificate shall not possess any abnormality of the function of the ears, nose, sinuses or throat (including oral cavity, teeth and larynx), or any active pathological condition, congenital or acquired, acute or chronic, or any sequela of surgery and trauma which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) A comprehensive otorhinolaryngological examination is required at the initial examination and subsequently once every five years up to



- the 40th birthday and every two years thereafter (extended examination – see paragraph 1 and 2 Appendix 15 to Subpart B).
- c) A routine Ear-Nose-Throat examination shall form part of all revalidation and renewal examinations (see Appendix 15 to Subpart B).
 - d) Presence of any of the following disorders in an applicant shall result in an unfit assessment.
 - 1) Active pathological process, acute or chronic, of the internal or middle ear.
 - 2) Unhealed perforation or dysfunction of the tympanic membranes (see paragraph 3 Appendix 15 to Subpart B).
 - 3) Disturbances of vestibular function (see paragraph 4 Appendix 15 to Subpart B).
 - 4) Significant restriction of the nasal air passage on either side, or any dysfunction of the sinuses.
 - 5) Significant malformation or significant, acute or chronic infection of the oral cavity or upper respiratory tract.
 - 6) Significant disorder of speech or voice.

1.8.6.22 Hearing requirements

- a) Hearing shall be tested at all examinations. The applicant shall understand correctly conversational speech when tested with each ear at a distance of 2 metres from and with his back turned towards the AME.
- b) Hearing shall be tested with pure tone audiometry at the initial examination and at subsequent revalidation or renewal examinations every five years up to the 40th birthday and every two years thereafter (see paragraph 1 Appendix 16 to Subpart B).
- c) At the initial examination for a Class 1 medical certificate there shall be no hearing loss in either ear, when tested separately, of more than 20 dB(HL) at any of the frequencies 500, 1 000 and 2 000 Hz, or of more than 35 dB(HL) at 3 000 Hz. An applicant whose hearing loss is within 5 dB(HL) of these limits in two or more of the frequencies tested, shall undergo pure tone audiometry at least annually.
- d) At revalidation or renewal examinations, there shall be no hearing loss in either ear, when tested separately, of more than 35dB(HL) at any of the frequencies 500, 1 000, and 2 000 Hz, or of more than 50 dB(HL) at 3 000 Hz. An applicant whose hearing loss is within 5 dB(HL) of these limits in two or more of the frequencies tested, shall undergo pure tone audiometry at least annually.
- e) At revalidation or renewal, applicants with hypoacusis may be assessed as fit by the AMS if a speech discrimination test demonstrates a satisfactory hearing ability (see paragraph 2 Appendix 16 to Subpart B).

1.8.6.23 Psychological requirements

- a) An applicant for or holder of a Class 1 medical certificate shall have no established psychological deficiencies (see paragraph 1 Appendix 17 to Subpart B), which are likely to interfere with the



safe exercise of the privileges of the applicable License(s). A psychological evaluation may be required by the AMS where it is indicated as part of, or complementary to, a specialist psychiatric or neurological examination (see paragraph 2 Appendix 17 to Subpart B).

- b) When a psychological evaluation is indicated a psychologist acceptable to the AMS shall be utilised.
- c) The psychologist shall submit to the AMS a written report detailing his opinion and recommendation.

1.8.6.24 Dermatological requirements

- a) An applicant for, or holder of a Class 1 Medical Certificate shall have no established dermatological condition, likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) Particular attention should be paid to the following disorders (see Appendix 18 to Subpart B):
 - 1) Eczema (Exogenous and Endogenous),
 - 2) Severe Psoriasis,
 - 3) Bacterial Infections,
 - 4) Drug Induced Eruptions,
 - 5) Bullous Eruptions,
 - 6) Malignant Conditions of the skin,
 - 7) Urticaria.

Referral to the AMS shall be made if doubt exists about any condition.

1.8.6.25 Oncology

- a) An applicant for or holder of a Class 1 medical certificate shall have no established primary or secondary malignant disease likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) After treatment for malignant disease applicants may be assessed as fit in accordance with Appendix 19 to Subpart B.

1.8.7 *Class 2 Medical Requirements*

1.8.7.1 Cardiovascular system – Examination

- a) An applicant for or holder of a Class 2 medical certificate shall not possess any abnormality of the cardiovascular system, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) A standard 12-lead resting electrocardiogram (ECG) and report are required at the examination for first issue of a medical certificate, at the first examination after the 40th birthday and at each aeromedical examination thereafter.
- c) Exercise electrocardiography is required only when clinically indicated in compliance with paragraph 1 Appendix 1 to Subpart C.
- d) Reporting of resting and exercise electrocardiograms shall be by specialists acceptable to the AMS.
- e) If two or more major risk factors (smoking, hypertension, diabetes mellitus, obesity, etc) are present in an applicant, estimation of



plasma lipids and serum cholesterol is required at the examination for first issue of a medical certificate and at the first examination after age 40.

1.8.7.2 Cardiovascular system – Blood pressure

- a) The blood pressure shall be recorded with the technique given in paragraph 3 Appendix 1 to Subpart C.
- b) When the blood pressure at examination consistently exceeds 160 mmHg systolic and/or 95 mmHg diastolic with or without treatment the applicant shall be assessed as unfit.
- c) Treatment for the control of blood pressure shall be compatible with the safe exercise of the privileges of the applicable License(s) and be in compliance with paragraph 4 Appendix 1 to Subpart C. The initiation of drug therapy shall require a period of temporary suspension of the medical certificate establish the absence of significant side effects.
- d) Applicants with symptomatic hypotension shall be assessed as unfit.

1.8.7.3 Cardiovascular system – Coronary artery disease

- a) Applicants with asymptomatic, minor, coronary artery disease may be considered fit by the AMS subject to compliance with paragraph 5 Appendix 1 to Subpart C.
- b) Applicants with symptomatic coronary artery disease shall be assessed as unfit.
- c) Applicants following myocardial infarction shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 6, Appendix 1 to Subpart C.
- d) Applicants following coronary bypass surgery or coronary angioplasty/stenting shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 7 Appendix 1 to Subpart C.

1.8.7.4 Cardiovascular system – Rhythm/conduction disturbances

- a) Applicants with disturbance of supraventricular rhythm, including sinoatrial dysfunction, whether intermittent or established shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 8 Appendix 1 to Subpart C.
- b) Applicants with asymptomatic sinus bradycardia or sinus tachycardia may be assessed as fit in the absence of underlying abnormality.
- c) Applicants with asymptomatic isolated uniform atrial or ventricular ectopic complexes need not be assessed as unfit. Frequent or complex forms require full cardiological evaluation in compliance with paragraph 8 Appendix 1 to Subpart C.
- d) In the absence of any other abnormality, applicants with incomplete bundle branch block or stable left axis deviation may be assessed as fit.
- e) Applicants with complete right or left bundle branch block require cardiological evaluation on first presentation and subsequently in compliance with paragraph 8 Appendix 1 to Subpart C.



- f) Applicants with broad and/or narrow complex tachycardias shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 8 Appendix 1 to Subpart C.
- g) Applicant with an endocardial pace maker shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 8 Appendix 1 to Subpart C.

1.8.7.5 Cardiovascular system – General

- a) Applicants with peripheral arterial disease before or after surgery shall be assessed as unfit. Provided there is no significant functional impairment a fit assessment may be considered by the AMS subject to compliance with paragraphs 5 and 6, Appendix 1 to Subpart C.
- b) Applicants with aneurysm of the thoracic or abdominal aorta, before or after surgery, shall be assessed as unfit. Applicants with infrarenal abdominal aortic aneurysm may be considered fit by the AMS subject to compliance with paragraph 9 Appendix 1 to Subpart C.
- c) Applicants with significant abnormality of any of the heart valves shall be assessed as unfit.
 - 1) Applicants with minor cardiac valvular abnormalities may be assessed as fit by the AMS subject to compliance with paragraph 10(a) and (b) Appendix 1 to Subpart C.
 - 2) Applicants with cardiac valve replacement/repair shall be assessed as unfit. A fit assessment may be considered by the AMS subject to compliance with paragraph 10© Appendix 1 to Subpart C.
- d) Systemic anticoagulant therapy is disqualifying. Applicants who have received treatment of limited duration, may be considered for a fit assessment by the AMS subject to compliance with paragraph 11 Appendix 1 to Subpart C.
- e) Applicants with any abnormality of the pericardium, myocardium or endocardium not covered above shall be assessed as unfit. A fit assessment may be considered by the AMS following complete resolution and satisfactory cardiological evaluation in compliance with paragraph 12 Appendix 1 to Subpart C.
- f) Applicants with congenital abnormality of the heart, before or after corrective surgery, shall be assessed as unfit. A fit assessment may be considered by the AMS in compliance with paragraph 13 Appendix 1 to Subpart C.
- g) Heart or heart/lung transplantation is disqualifying.
- h) Applicants with a history of recurrent vasovagal syncope shall be assessed as unfit. A fit assessment may be considered by the AMS in an applicant with a suggestive history subject to compliance with paragraph 14 Appendix 1 to Subpart C.

1.8.7.6 Respiratory system – General

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



- b) Posterior/anterior chest radiography is required only when indicated on clinical or epidemiological grounds.
- c) A pulmonary peak flow test in accordance with paragraph 1 Appendix 2 to Subpart C, is required at the initial examination, at the first examination after the 40th birthday, every four years thereafter and when clinically indicated. Applicants with significant impairment of pulmonary function shall be assessed as unfit (see paragraph 1 Appendix 2 to subpart C).

1.8.7.7 Respiratory system – Disorders

- a) Applicants with chronic obstructive airway disease shall be assessed as unfit.
- b) Applicants with reactive airway disease (bronchial asthma) requiring medication shall be assessed in compliance with paragraph 2 Appendix 2 to Subpart C.
- c) Applicants with active inflammatory disease of the respiratory system shall be assessed as temporarily unfit.
- d) Applicants with active sarcoidosis shall be assessed as unfit (see paragraph 3 Appendix 2 to Subpart C).
- e) Applicants with spontaneous pneumothorax shall be assessed as unfit pending full evaluation in compliance with paragraph 4 Appendix 2 to Subpart C.
- f) Applicants requiring major chest surgery shall be assessed as unfit for a minimum of three months following operation and until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable License(s) (see paragraph 5 Appendix 2 to Subpart C).
- g) Applicants with unsatisfactorily treated sleep apnoea syndrome shall be assessed as unfit.

1.8.7.8 Digestive system – General

An applicant for or holder of a Class 2 medical certificate shall not possess any functional or structural disease of the gastro-intestinal tract or its adnexa which is likely to interfere with the safe exercise of the privileges of the applicable License(s).

1.8.7.9 Digestive system – Disorders

- a) Applicants with dyspeptic disorders requiring medication or with pancreatitis shall be assessed as unfit pending examination in compliance with paragraph 1 Appendix 3 to Subpart C.
- b) Applicants with asymptomatic gallstones discovered incidentally shall be assessed in compliance with paragraph 2 Appendix 3 to subpart B and C.
- c) Applicants with an established diagnosis or history of chronic inflammatory bowel disease shall normally be assessed as unfit (see paragraph 3 Appendix 3 to Subpart C).
- d) Applicants shall be required to be completely free from those hernias that might give rise to incapacitating symptoms.
- e) Applicants with any sequela of disease or surgical intervention on any part of the digestive tract or its adnexae likely to cause



incapacitation in flight, in particular any obstruction due to stricture or compression, shall be assessed as unfit.

- f) Applicants who have undergone a surgical operation on the digestive tract or its adnexa, involving a total or partial excision or a diversion of any of these organs, shall be assessed as unfit for a minimum period of three months or until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable License(s) (see paragraph 4 Appendix 3 to Subpart C).

1.8.7.10 Metabolic, nutritional and endocrine diseases

- a) An applicant for or holder of a Class 2 medical certificate shall not possess any functional or structural metabolic, nutritional or endocrine disorder which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) Applicants with metabolic, nutritional or endocrine dysfunctions may be assessed as fit in accordance with paragraph 1 Appendix 4 to Subpart C.
- c) Applicants with diabetes mellitus may be assessed as fit only in accordance with paragraphs 2 and 3 Appendix 4 Subpart C.
- d) Applicants with diabetes requiring insulin shall be assessed as unfit.
- e) Applicants with a Body Mass Index > 35 may be assessed as fit only if the excess weight is not likely to interfere with the safe exercise of the applicable License(s) and a satisfactory cardiovascular risk review has been undertaken (See paragraph 1 Appendix 9 to Subpart C).

1.8.7.11 Haematology

- a) An applicant for or the holder of a Class 2 medical certificate shall not possess any haematologic disease which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) Haemoglobin shall be tested at the initial examination for a medical certificate and when indicated on clinical grounds. Cases of significant anaemia with a haematocrit below 32% shall be assessed as unfit (see paragraph 1 Appendix 5 Subpart C).
- c) Applicants with sickle cell disease shall be assessed as unfit (see paragraph 1 Appendix 5 to Subpart C).
- d) Applicants with significant localised and generalised enlargement of the lymphatic glands and diseases of the blood shall be assessed as unfit (see paragraph 2 Appendix 5 to Subpart C).
- e) Applicants with acute leukaemia shall be assessed as unfit. After established remission certification may be considered by the AMS. Initial applicants with chronic leukaemia shall be assessed as unfit. For certification see paragraph 3 Appendix 5 to Subpart C.
- f) Applicants with significant enlargement of the spleen shall be assessed as unfit (see paragraph 4 Appendix 5 to Subpart C).
- g) Applicants with significant polycythaemia shall be assessed as unfit see paragraph 5 Appendix 5 to Subpart C.
- h) Applicants with a coagulation defect shall be assessed as unfit (see paragraph 6 Appendix 5 to Subpart C).



1.8.7.12 Urinary system

- a) An applicant for or the holder of a Class 2 medical certificate shall not possess any functional or structural disease of the urinary system or its adnexa which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) Applicants presenting any signs of organic disease of the kidney shall be assessed as unfit. Urinalysis shall form part of every medical examination. The urine shall contain no abnormal element considered to be of pathological significance. Particular attention shall be paid to disease affecting the urinary passages and the genital organs. (see paragraph 1 Appendix 6 to Subpart C).
- c) Applicants presenting with urinary calculi shall be assessed as unfit (see paragraph 2 Appendix 6 to Subpart C).
- d) Applicants with any sequela of disease or surgical procedures on the kidneys and the urinary tract likely to cause incapacitation, in particular any obstruction due to stricture or compression, shall be assessed as unfit. Applicants with compensated nephrectomy without hypertension or uraemia may be considered fit by the AMS subject to compliance with paragraph 3 Appendix 6 to Subpart C.
- e) Applicants who have undergone a major surgical operation in the urinary tract or the urinary apparatus involving a total or partial excision or a diversion of any of its organs shall be assessed as unfit for a minimum period of three months and until such time as the effects of the operation are no longer likely to interfere with the safe exercise of the privileges of the applicable License(s) (see paragraphs 3 and 4 Appendix 6 to Subpart C).

1.8.7.13 Sexually transmitted diseases and other infections

- a) An applicant for or holder of a Class 2 medical certificate shall have no established medical history or clinical diagnosis of any sexually transmitted disease or other infection which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) Particular attention, in accordance with Appendix 7 to Subpart C, shall be paid to a history of or clinical signs indicating:
 - 1) HIV positivity,
 - 2) immune system impairment,
 - 3) infectious hepatitis,
 - 4) syphilis.

1.8.7.14 Gynaecology and obstetrics

- a) An applicant for or the holder of a Class 2 medical certificate shall not possess any functional or structural obstetric or gynaecological condition which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) An applicant with a history of severe menstrual disturbances unamenable to treatment shall be assessed as unfit.
- c) Pregnancy entails unfitness. If obstetric evaluation indicates a completely normal pregnancy, the applicant may be assessed as fit until the end of the 26th week of gestation, in accordance with paragraph 1 Appendix 8 to Subpart C. License privileges may be



resumed upon satisfactory confirmation of full recovery following confinement or termination of pregnancy.

- d) An applicant who has undergone a major gynaecological operation shall be assessed as unfit for a minimum period of three months and until such time as the effects of the operation are not likely to interfere with the safe exercise of the privileges of the License(s) (see paragraph 2 Appendix 8 to Subpart C).

1.8.7.15 Musculoskeletal requirements

- a) An applicant for or holder of a Class 2 medical certificate shall not possess any abnormality of the bones, joints, muscles and tendons, congenital or acquired which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) An applicant shall have sufficient sitting height, arm and leg length and muscular strength for the safe exercise of the privileges of the applicable License (see paragraph 1 Appendix 9 to Subpart C).
- c) An applicant shall have satisfactory functional use of the musculoskeletal system. An applicant with any significant sequela from disease, injury or congenital abnormality of the bones, joints, muscles or tendons with or without surgery shall be assessed in accordance with paragraphs 1, 2 and 3 Appendix 9 to Subpart C.

1.8.7.16 Psychiatric requirements

- a) An applicant for or holder of a Class 2 medical certificate shall have no established medical history or clinical diagnosis of any psychiatric disease or disability, condition or disorder, acute or chronic, congenital or acquired, which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) Particular attention shall be paid to the following (see Appendix 10 to Subpart C):
 - 1) psychotic symptoms,
 - 2) mood disorders,
 - 3) personality disorders, especially if severe enough to have resulted in overt acts,
 - 4) mental abnormality and neurosis,
 - 5) alcoholism,
 - 6) use or abuse of psychotropic drugs or other substances with or without dependency.

1.8.7.17 Neurological requirements

- a) An applicant for or holder of a Class 2 medical certificate shall have no established medical history or clinical diagnosis of any neurological condition which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) Particular attention shall be paid to the following (see Appendix 11 to Subpart C):
 - 1) progressive disease of the nervous system,
 - 2) epilepsy and other causes of disturbance of consciousness,
 - 3) conditions with a high propensity for cerebral dysfunction,
 - 4) head injury,



- 5) spinal or peripheral nerve injury.

1.8.7.18 Ophthalmological requirements

- a) An applicant for or holder of a Class 2 medical certificate shall not possess any abnormality of the function of the eyes or their adnexa or any active pathological condition, congenital or acquired, acute or chronic, or any sequela of eye surgery or trauma, which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) An ophthalmological examination is required at the initial examination (see paragraph 1(b) Appendix 12 to Subpart C) and shall include:
 - 1) History;
 - 2) Visual acuity, near, intermediate and distant vision: uncorrected ; with best optical correction if needed;
 - 3) Ocular motility and binocular vision;
 - 4) Colour vision;
 - 5) Visual fields;
 - 6) Examination of the external eye, anatomy, media and funduscopy. Slit lamp examination;
- c) A routine eye examination shall form part of all revalidation and renewal examinations (see paragraph 2 Appendix 12 to Subpart B) and shall include:
 - 1) History;
 - 2) Visual acuity, near, intermediate and distant vision: uncorrected; with best optical correction if needed;
 - 3) examination of the external eye, anatomy, media and funduscopy;
 - 4) Further examination on clinical indication (see paragraph 4 Appendix 12 to Subpart C)

1.8.7.19 Visual requirements

- a) *Distant visual acuity.* Distant visual acuity, with or without correction, shall be 6/12 (0, 5) or better in each eye separately and visual acuity with both eyes shall be 6/6 (1, 0) or better (see 1.8.17.19(f) below). No limits apply to uncorrected visual acuity.
- b) *Refractive errors.* Refractive error is defined as the deviation from emmetropia measured in dioptres in the most ametropic meridian and refraction shall be measured by standard methods (see paragraph 1 Appendix 13 to Subpart C). Applicants shall be assessed as fit with respect to refractive errors if they meet the following requirements.
 - 1) Refractive error
 - i. At the initial examination the refractive error shall not exceed ± 5 diopters (see paragraph 2© Appendix 13 to Subpart B)
 - ii. At recertification or renewal examinations, an applicant experienced to the satisfaction of the Authority with refractive errors up to $+5/-8$ diopters may be considered fit by the AMS (see paragraph 2 © Appendix 13 to Subpart B)



- 2) Astigmatism
 - i. In an initial applicant with a refractive error with an astigmatic component, the astigmatism shall not exceed 3.0 diopters.
 - ii. At recertification or renewal examinations, an applicant experienced to the satisfaction of the Authority with a refractive error with an astigmatic component not exceeding 3.0 diopters may be considered fit by the AMS
- 3) Keratoconus is disqualifying. The AMS may consider recertification if the applicant meets the visual requirements (see paragraph 3 Appendix 13 to Subpart B)
- 4) In a applicant with amblyopia, the visual acuity of the amblyopic eye shall be 6/18 (0/32) or better. The applicant may be accepted as fit provided the visual acuity in the other eye is 6/6 or better and no pathology (including refractive error) can be demonstrated.
- 5) Anisometropia
 - i. In an initial applicant the difference in refractive error between the two eyes (anisometropia) shall not exceed 3.0 diopters.
 - ii. At recertification or renewal examination, an applicant experienced to the satisfaction of the Authority with a difference in refractive error between the two eyes (anisometropia) of more than 3.0 diopters may be considered fit by the AMS. Contact lenses shall be worn if the anisometropia exceeds 3.0 diopters.
- 6) The development of presbyopia shall be followed at all aeromedical renewal examinations.
- 7) An applicant shall be able to read N5 chart (or equivalent) at 30-50 cms and N14 chart (or equivalent) at 100 cms, with correction if prescribed (see 1.8.17.19(f) below).
- c) An applicant with significant defects of binocular vision shall be assessed as unfit. There is no stereoscopic test requirement (see paragraph 4 Appendix 13 to Subpart C).
- d) An applicant with diplopia shall be assessed as unfit.
- e) An applicant with visual fields which are not normal shall be assessed as unfit (see paragraph 4 Appendix 13 to Subpart C).
- f)1) If a visual requirement is met only with the use of correction, the spectacles or contact lenses must provide optimal visual function and be suitable for aviation purposes.
 - 2) Correcting lenses, when worn for aviation purposes, shall permit the License holder to meet the visual requirements at all distances. No more than one pair of spectacles shall be used to meet the requirements.
 - 3) A spare set of similarly correcting spectacles shall be readily available when exercising the privileges of the License.
- g) Eye Surgery
 - 1) Refractive surgery entails unfitness. Certification may be considered by the AMS (see Paragraph 6 Appendix 13 to Subpart C)



- 2) Cataract surgery, retinal surgery and glaucoma surgery entail unfitness. Re-certification may be considered by the AMS (see Paragraph 7 Appendix 13 to Subpart C)

1.8.7.20 Colour perception (See Appendix 14 to Subpart C)

- a) Normal colour perception is defined as the ability to pass Ishihara's test or to pass Nagel's anomaloscope as a normal trichromate (see paragraph 1 Appendix 14 to Subpart C).
- b) An applicant shall have normal perception of colours or be colour safe. Applicants who fail Ishihara's test may be assessed as colour safe if they pass extensive testing with methods acceptable to the AMS (anomaloscopy or colour lanterns) (see paragraph 2 Appendix 14 to Subpart C).
- c) An applicant who fails the acceptable colour perception tests is to be considered colour unsafe and shall be assessed as unfit.
- d) A colour unsafe applicant may be assessed by the AMS as fit to fly by day only.

1.8.7.21 Otorhinolaryngological requirements

- a) An applicant for or holder of a Class 2 medical certificate shall not possess any abnormality of the function of the ears, nose, sinuses, or throat (including oral cavity, teeth and larynx), or any active pathological condition, congenital or acquired, acute or chronic, or any sequela of surgery and trauma which is likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) A comprehensive otorhinolaryngological examination by an AME is required at the initial examination.
- c) A routine Ear-Nose-Throat examination shall form part of all revalidation and renewal examinations (see paragraph 2 Appendix 15 to Subpart C).
- d) Presence of any of the following disorders in an applicant shall result in an unfit assessment.
 - 1) Active pathological process, acute or chronic, of the internal or middle ear.
 - 2) Unhealed perforation or dysfunction of the tympanic membranes (see paragraph 3 Appendix 15 to Subpart C).
 - 3) Disturbances of vestibular function (see paragraph 4 Appendix 15 to Subpart C).
 - 4) Significant restriction of the nasal air passage on either side, or any dysfunction of the sinuses.
 - 5) Significant malformation or significant, acute or chronic infection of the oral cavity or upper respiratory tract.
 - 6) Significant disorder of speech or voice.

1.8.7.22 Hearing requirements

- a) Hearing shall be tested at all examinations. The applicant shall be able to understand correctly ordinary conversational speech when at a distance of 2 metres from and with his back turned towards the AME.



- b) If an instrument rating is to be added to the applicable License(s), a hearing test with pure tone audiometry (see paragraph 1 Appendix 16 to Subpart C) is required at the first examination for the rating and shall be repeated every 5 years up to the 40th birthday and every 2 years thereafter.
 - 1) At the initial examination for a Class 2 medical certificate with instrument ratings there shall be no hearing loss in either ear, when tested separately, of more than 20 dB (HL) at any of the frequencies 500, 1000 and 2000 Hz, or of more than 35dB(HL) at 3000 Hz. An applicant whose hearing loss is within 5 dB(HL) of these limits in two or more of the frequencies tested shall undergo pure tone audiometry at least annually.
 - 2) At recertification or renewal examinations there shall be no hearing loss in either ear, when tested separately, of more than 35 dB (HL) at any of the frequencies 500, 1000 and 2000 Hz, or more than 50dB (HL) at 3000 Hz. An applicant whose hearing loss is within 5 dB (HL) of these limits in two or more of the frequencies tested shall undergo pure tone audiometry at least annually.
 - 3) At recertification or renewal examinations applicant with hypoacusis may be assessed as fit by the AMS if a speech discrimination test demonstrates a satisfactory hearing ability (see Paragraph 2 Appendix 16 to Subpart C)

1.8.7.23 Psychological requirements

- a) An applicant for or holder of a Class 2 medical certificate shall have no established psychological deficiencies, particularly in operational aptitudes or any relevant personality factor, which are likely to interfere with the safe exercise of the privileges of the applicable License(s). A psychological evaluation (see paragraph 1 Appendix 17 to Subpart C) may be required by the AMS where it is indicated as part of, or complementary to, a specialist psychiatric or neurological examination (see paragraph 2 Appendix 17 to Subpart C).
- b) When a psychological evaluation is indicated a psychologist acceptable to the Authority shall be utilised.
- c) The psychologist shall submit to the AMS a written report detailing his opinion and recommendation.

1.8.7.24 Dermatological requirements

- a) An applicant for or holder of a Class 2 Medical Certificate shall have no established dermatological condition, likely to interfere with the safe exercise of the privileges of the applicable License(s).
- b) Particular attention should be paid to the following disorders (see Appendix 18 to Subpart B).
 - 1) Eczema (Exogenous and Endogenous),
 - 2) Severe Psoriasis,
 - 3) Bacterial Infections,
 - 4) Drug Induced Eruptions,



- 5) Bullous Eruptions,
- 6) Malignant Conditions of the skin,
- 7) Urticaria.

Referral to the AMS shall be made if doubt exists about any condition.

1.8.7.25 Oncology

- (a) An applicant for or holder of a Class 2 medical certificate shall have no established primary or secondary malignant disease likely to interfere with the safe exercise of the privileges of the applicable License(s).
- (b) After treatment for malignant disease applicants may be assessed as fit in accordance with Appendix 19 to Subpart C.

1.8.8 Class 3 Medical Assessments

1.8.8.1 Assessment issue and renewal

- a) An applicant for an air traffic controller License shall undergo an initial medical examination for the issue of a Class 3 Medical Assessment.
- b) Except where otherwise stated in this section, holders of air traffic controller Licenses shall have their Class 3 Medical Assessments renewed at intervals not exceeding those specified in 1.2.11 (c).
- c) When the Licensing Authority is satisfied that the requirements of this section and the general provisions of 1.8.2 and 1.8.3 have been met, a Class 3 Medical Assessment shall be issued to the applicant.

1.8.8.2 Physical and mental requirements

The medical examination shall be based on the following requirements.

- a) The applicant shall not suffer from any disease or disability which could render that applicant likely to become suddenly unable to perform duties safely.
- b) The applicant shall have no established medical history or clinical diagnosis of:
 - i. a psychosis;
 - ii. alcoholism;
 - iii. drug dependence;
 - iv. any personality disorder, particularly if severe enough to have repeatedly resulted in overt acts;
 - v. a mental abnormality, or neurosis of a significant degree; such as might render the applicant unable to safely exercise the privileges of the License applied for or held, unless accredited medical conclusion indicates that in special circumstances, the applicant's failure to meet the requirement is such that exercise of the privileges of the License applied for is not likely to jeopardize flight safety.
- c) The applicant should have no established medical history or clinical diagnosis of any mental abnormality, personality disorder or neurosis which, according to accredited medical conclusion, makes it likely that within two years of the examination the applicant will



be unable to safely exercise the privileges of the License or rating applied for or held.

Note: A history of acute toxic psychosis need not be regarded as disqualifying, provided that the applicant has suffered no permanent impairment.

- d) The applicant shall have no established medical history or clinical diagnosis of any of the following:
 - i. a progressive or non-progressive disease of the nervous system, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe exercise of the applicant's License and rating privileges;
 - ii. epilepsy;
 - iii. any disturbance of consciousness without satisfactory medical explanation of cause.
- e) Cases of head injury, the effects of which, according to accredited medical conclusion, are likely to interfere with the safe exercise of the applicant's License privileges shall be assessed as unfit.
- f) The applicant shall not possess any abnormality of the heart, congenital or acquired, which is likely to interfere with the safe exercise of the applicant's License privileges. An applicant indicated by accredited medical conclusion to have made a satisfactory recovery from myocardial infarction may be assessed as fit.

Note: Such commonly occurring conditions as respiratory arrhythmia, occasional extrasystoles which disappear on exercise, increase of pulse rate from excitement or exercise, or a slow pulse not associated with auriculoventricular dissociation may be regarded as being within "normal" limits.

- g) Electrocardiography should form part of the heart examination for the first issue of a License, at the first re-examination after the age of 40 and thereafter no less frequently than every five years, and in re-examinations in all doubtful cases.

Note1: The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify disqualification without further thorough cardiovascular investigation.

Note2: Guidance on resting and exercise electrocardiography is published in the Manual of Civil Aviation Medicine (Doc 8984).

- h) The systolic and diastolic blood pressures shall be within normal limits.

Note1: The use of drugs for control of high blood pressure is disqualifying except for those drugs, the use of which, according to accredited medical conclusion, is compatible with the safe exercise of the applicant's License privileges.

Note2: Extensive guidance on the subject is published in the Manual of Civil Aviation Medicine (Doc 8984).



- i) There shall be no significant functional nor structural abnormality of the circulatory tree. The presence of varicosities does not necessarily entail unfitness.
- j) There shall be neither acute disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleura. Radiography shall form a part of the medical examination in all doubtful clinical cases.
 - i) Radiography should form a part of the initial chest examination and should be repeated periodically thereafter.
 - ii) Cases of pulmonary emphysema should be assessed as unfit only if the condition is causing symptoms.
- k) Cases of active pulmonary tuberculosis, duly diagnosed, shall be assessed as unfit. Cases of quiescent or healed lesions which are known to be tuberculous, or are presumably tuberculous in origin, may be assessed as fit.

Note1: Guidance material on assessment of respiratory diseases is published in the Manual of Civil Aviation Medicine (Doc 8984).

Note2- Guidance material on hazards of medications is published in the Manual of Civil Aviation Medicine (Doc 8984).

- l) Cases of disabling disease with important impairment of function of the gastrointestinal tract or its adnexae shall be assessed as unfit.
- m) The applicant shall be required to be completely free from those hernias that might give rise to incapacitating symptoms.
- n) Any sequelae of disease or surgical intervention on any part of the digestive tract or its adnexae, liable to cause incapacity, in particular any obstructions due to stricture or compression shall be assessed as unfit.
- o) Cases of metabolic, nutritional or endocrine disorders likely to interfere with the safe exercise of the applicant's License privileges shall be assessed as unfit.
- p) Proven cases of diabetes mellitus shown to be satisfactorily controlled without the use of any anti-diabetic drug may be assessed as fit. The use of anti-diabetic drugs for the control of diabetes mellitus is disqualifying except for those oral drugs administered under conditions permitting appropriate medical supervision and control and which, according to accredited medical conclusion, are compatible with the safe exercise of the applicant's License privileges.
- q) Cases of significant localized and generalized enlargement of the lymphatic glands and of diseases of the blood shall be assessed as unfit, except in cases where accredited medical conclusion indicates that the condition is not likely to affect the safe exercise of the applicant's License privileges.
- r) Cases in 1.8.8.2 above due to a transient condition should be assessed as only temporarily unfit.
- s) Cases presenting any signs of organic disease of the kidney shall be assessed as unfit; those due to a transient condition may be assessed as temporarily unfit. The urine shall contain no abnormal element



considered by the medical examiner to be of pathological significance. Cases of affections of the urinary passages and of the genital organs shall be assessed as unfit; those due to a transient condition may be assessed as temporarily unfit.

- t) Any sequelae of disease or surgical procedures on the kidneys and the urinary tract liable to cause incapacity, in particular any obstructions due to stricture or compression, shall be assessed as unfit. Compensated nephrectomy without hypertension or uraemia may be assessed as fit.
- u) An applicant for the first issue of a License who has a personal history of syphilis shall be required to furnish evidence, satisfactory to the medical examiner, that the applicant has undergone adequate treatment.
- v) Applicants who have a history of severe menstrual disturbances that have proved unamenable to treatment and that are likely to interfere with the safe exercise of the applicant's License privileges shall be assessed as unfit.
- w) Any active disease of the bones, joints, muscles or tendons and all serious functional sequelae of congenital or assessed as unfit. Acquired disease shall be assessed as unfit. Functional aftereffects of lesion affecting the bones, joints, muscles or tendons and certain anatomical defects compatible with the safe exercise of the applicant's License privileges may be assessed as fit.
- x) There shall be:
 - i. no active pathological process, acute or chronic, of the internal ear or of the middle ear;
 - ii. no permanent disturbances of the vestibular apparatus. Transient conditions may be assessed as temporarily unfit.

Note.— The details of the hearing requirements are set out in 1.8.8.4

(y) There shall be no serious malformation nor serious, acute or chronic affection of the buccal cavity or upper respiratory tract. Cases of speech defects and stuttering shall be assessed as unfit.

1.8.8.3 Visual requirements

The medical examination shall be based on the following requirements.

- a) The function of the eyes and their adnexa shall be normal. There shall be neither active pathological condition, acute or chronic, nor 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 License and rating privileges.
- b) Distant visual acuity with or without correction shall be 6/9 or better in each eye separately, and binocular visual acuity shall 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:
 - i. such correcting lenses are worn during the exercise of the privileges of the License or rating applied for or held; and



- ii. in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's License.

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 an ophthalmic report is required at the discretion of the Licensing Authority. 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.*

- iii. 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 License privileges.

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

- D) Applicants with a large refractive error shall use contact lenses or high-index spectacle lenses.

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

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

Note1.— *The purpose of the required ophthalmic examination is (1) to ascertain normal vision performance, and (2) to identify any significant pathology.*

Note2.— *Guidance on the assessment of monocular applicants is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

- iv. Applicants who have undergone surgery affecting the refractive status of the eye shall be assessed as unfit unless they are free from those sequelae which are likely to interfere with the safe exercise of their License and rating privileges.
- c) The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by 1.8.8.3 (b) 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 1.8.8.3 (b); if no such correction is prescribed, a pair of spectacles for near use shall be kept readily available during the exercise of the privileges of the License. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

Note1.— *N5 and N14 refer to the size of typeface used. For further details, see the Manual of Civil Aviation Medicine (Doc 8984).*

Note2.— *An applicant who needs near correction to meet the requirement will require “look-over”, bifocal or perhaps multi-focal lenses in order to read radar screens, visual displays and written or printed material and also to make use of distant vision, through the windows, without removing the lenses. Singlevision near correction (full lenses of one power only, appropriate for reading) may be acceptable for certain air traffic control duties. However, it should be realized that single-vision near correction significantly reduces distant visual acuity.*

Note3.— *Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the air traffic control duties the applicant is likely to perform*

When near correction is required in accordance with this paragraph, a second pair of near-correction spectacles shall be kept available for immediate use.

- d) The applicant shall be required to have normal fields of vision.
- e) The applicant shall be required to have normal binocular function.

Note.— *Defective stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia may not be disqualifying.*

1.8.8.4 Hearing Requirements

The applicant, tested on a pure-tone audiometer at first issue of License, not less than once every five years up to the age of 40 years, and thereafter not less than once every three years, shall not have a hearing loss, in either ear separately, of more than 35 dB at any of the frequencies 500, 1000 or 2000 Hz, or more than 50 dB at 3 000 Hz. However, an applicant with a hearing loss greater than the above may be declared fit provided that:

- a) the applicant has a hearing performance in each ear separately equivalent to that of a normal person, against a background noise that will simulate that experienced in a typical air traffic control working environment; and
- b) the applicant has the ability to hear an average conversational voice in a quiet room, using both ears, at a distance of 2 m from the examiner, with the back turned to the examiner. (27) The medical examination shall be based on the following requirements. The



applicant, tested on a pure-tone audiometer at first issue of License, not less than once every five years up to the age of 40 years, and thereafter not less than once every three years, shall 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. However, an applicant with a hearing loss greater than the above may be declared fit provided that:

- i. the applicant has a hearing performance in each ear separately equivalent to that of a normal person, against a background noise that will simulate that experienced in a typical air traffic control working environment; and
- ii. the applicant has the ability to hear an average conversational voice in a quiet room, using both ears, at a distance of 2 m from the examiner, with the back turned to the examiner.
- iii. alternatively, other methods providing equivalent results to those specified in 1.8.8.4(a) shall be used.

1.8.9 *Authorized Medical Examiner (AME)*

- 1) Sudan CAA shall designate and authorize medical examiners (AMEs), who are qualified and licensed to practice medicine in Sudan as authorized medical examiner (AMEs) subject to the following qualification and experience:
 - a) Experience:
 - i. Had at least 8 years experience in the practice of medicine.
 - ii. Have acquired practical knowledge and experience of the conditions in which the holder of License and certificates carry out their duties.
 - b) Training:
 - i. Basic Training of a minimum of 60 hours of lecture including practical work for physicians responsible for the medical assessment, surveillance and certification of Class 2 medical certificate.
 - ii. Advanced training for at least 60 (in addition to the 60 hours basic training) hours of lectures including practical work for physicians responsible for the medical examination and assessment and surveillance of Class 1 flying personnel.
 - c) Should have JAR Designation
 - d) Refresher Training:
- 2) Medical examiners shall have and continue to receive training in aviation medicine and shall acquire practical knowledge and experience of the conditions in which the holder of License and certificates, carry out their duties. During the period of authorization an AME is required to attend a minimum of 20 hours approved refresher training in every three years.

1.8.10 *Aviation Medical Center.*

Sudan CAA recognize any authorized / approved aviation medical center in any state of ICAO contracting members, for intensive medical check or consultation when needed by CAA Authorized Medical Examiner, once the



medical standards of that ICAO contracting State is reviewed and accepted by Sudan CAA – Licensing authority.



APPENDIX APPROVED TRAINING ORGANIZATION

(See Chapter 2, 1.2.15)

1. Issue of Approval

- 1.1 The issuance of an approval for Training organization and the continued validity of the approval shall be depend upon the training organization being in compliance with the requirements of this Appendix.
- 1.2 The approval document contents:
 - a) organization's name and location
 - b) date of issue and period of validity (where appropriate)
 - c) terms of approval.

2. Training and procedures manual

- 2.1 The training organization shall provide training and procedures manual for the use and guidance of personnel concerned. This manual may be issued in separate parts and shall contain at least the following information:
 - a) a general description of the scope of training authorized under the organization's terms of approval;
 - b) the content of the training programmes offered including the courseware and equipment to be used;
 - c) a description of the organization's quality assurance system in accordance with Paragraph 3;
 - d) a description of the organization facilities;
 - e) the name, duties and qualification of the person designated as responsible for compliance with the requirements of the approval in Paragraph 5.1;
 - f) a description of the duties and qualification of the personnel designated as responsible for planning, performing and supervising the training in Paragraph 5.2;
 - g) a description of the procedures used to establish and maintain the competence of instructional personnel as required by Paragraph 5.3;
 - h) a description of the method used for completion and retention of the training records required by Paragraph 6;
 - i) a description, when applicable, of additional training needed to comply with an operator's procedures and requirements; and
 - j) when Sudan CAA has authorized an approved training organization to conduct the testing required for the issuance of a licence or rating in accordance with Paragraph 8, a description of the selection, role and duties of the authorized personnel, as well as the applicable requirements established by the Licensing Authority.
- 2.2 The training organization shall ensure that the training and procedures manual is amended as necessary to keep the information contained therein up to date.
- 2.3 Copies of all amendments to the training and procedures manual shall be furnished promptly to all organization's persons to whom the manual has been issued.



3. Quality Assurance System

The training organization shall establish a quality assurance system, acceptable to the Licensing Authority granting the approval, which ensures Appendix A –SUCASR Part 1 that training and instructional practices comply with all relevant requirements.

4. Facilities

- 4.1 The facilities and working environment shall be appropriate for the task to be performed and be acceptable to the Licensing Authority.
- 4.2 The training organization shall have, or have access to, the necessary information, equipment, training devices and material to conduct the courses for which it is approved.
- 4.3 Synthetic training devices shall be qualified according to requirements established by the Sudan CAA and their use shall be approved by the Licensing Authority to ensure that they are appropriate to the task.

Note.— The ICAO Manual of Criteria for the Qualification of Flight Simulators (Doc. 9625) provides guidance on the approval of flight simulators.

5. Personnel

- 5.1 The training organization shall nominate a person responsible for ensuring that it is in compliance with the requirements for an approved organization.
- 5.2 The organization shall employ the necessary personnel to plan, perform and supervise the training to be conducted.
- 5.3 The competence of instructional personnel shall be in accordance with procedures and to a level acceptable to the Licensing Authority.
- 5.4 The training organization shall ensure that all instructional personnel receive initial and continuation training appropriate to their assigned tasks and responsibilities. The training programme established by the training organization shall include training in knowledge and skills related to human performance.

Note: Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the Human Factors Training Manual (ICAO Doc 9683)

6. Records

- 6.1 The training organization shall retain detailed student records to show that all requirements of the training courses have been met as agreed by the Licensing Authority.
- 6.2 The training organization shall maintain a system for recording the qualifications and training of instructional and examining staff where appropriate.
- 6.3 The records required by 6.1 shall be kept for a minimum period of two years after completion of the training. The records required by 6.2 shall be retained for a minimum period of two years after the instructor or examiner ceases to perform a function for the training organization.



7. Oversight

Sudan CAA, with an effective oversight programme, shall ensure the training organization's continued compliance with the approval requirements.

8. Evaluation and checking

When Sudan CAA has authorized an approved training organization to conduct the testing required for the issuance of a licence, certificate, or rating, the testing shall be conducted by the personnel authorized by the Licensing authority or designated by the Training organization in accordance with criteria approved by the Licensing Authority.



ATTACHMENT A

TESTS: GENERAL PROCEDURES

Tests prescribed under this part are given at times, places and by persons designated by the CAA.

1) **Written test.**

An applicant for Type Rating written tests must:-

- a) Show that he holds a Commercial Pilot Licence acceptable to the CAA;
- b) Satisfactorily complete the ground instruction course required by this part for the type rating sought;
- c) Present an official document showing that he is legally employed by a Sudanese organization, holds a valid identification, and that he meets the age requirements;
- d) Attain the minimum passing mark as specified in Paragraph 2 below.

2) **Test Policy**

- a) The test paper consists of questions grouped to cover the main aircraft systems and limitations (modules);
- b) The minimum passing mark for each module is 70%;
- c) The overall minimum passing mark is 85%;
- d) There is no negative marking;
- e) Failure in one module an oral test may be taken at the discretion of the Licencing authority.
- f) Failure in two modules or less constitutes the requirement for retest in the failed modules only;
- g) Failure in only one module constitutes the requirement for oral retest, subject to the examiner assessment;
- h) Failure in more than two modules constitutes the requirement for a full retest.

3) **Prerequisites for flight tests.**

To be eligible for a flight test the applicant must:-

- a) Have passed the required written test within 60 days of the date of the flight test;
- b) Have the applicable instruction and aeronautical experience prescribed in this part;
- c) Hold a current Medical Certificate appropriate to the certificate he seeks;
- d) Meet the age requirement for the issuance of the licence or rating he seeks;
- e) Show evidence that he has been given simulator and/or flight instruction in preparation for the flight test by an appropriate Authorized Examiner, within 60 days preceding the date of flight test, which finds him competent to satisfactorily complete the test.

4) **Flight test: Required aircraft and equipment.**

- a) **General:** An applicant for a licence or rating under this part must furnish, for each flight test that he is required to take, an appropriate



aircraft of Sudanese registry that has a current Standard Airworthiness Certificate.

- b) **Required equipment:** Aircraft furnished for a flight test must have:-
 - i) The equipment for each pilot operation required for the flight test.
 - ii) No prescribed operating limitation that will prohibit its use by any pilot operation required for the test.
 - iii) Pilot seats with adequate visibility such that each Pilot may operate the aircraft safely, except as provided in © of this section; and
 - iv) Cockpit and outside visibility adequate to evaluate the performance of the applicant, where an additional jump seat is provided for the examiner.
- c) **Simulated instrument flight equipment:** An applicant for any flight test involving flight manoeuvres solely by reference to instruments must furnish equipment, satisfactory to the examiner, that excludes the visual reference of the applicant outside of the aircraft.

5) Flight tests: Status of CAA Inspectors or Authorized Examiners.

When a CAA Inspector or Authorized Examiner conducts the flight test of an applicant for a Pilot or Flight Engineer Licence or Rating for the purpose of observing the applicant's ability to perform satisfactorily the procedures and manoeuvres on the flight test, the Inspector or Examiner is not the Pilot-in-command of the aircraft during the flight test unless he acts in that capacity for the flight, or portion of the flight, by prior arrangement with the applicant or other person who would otherwise act as Pilot-in-command of the flight, or portion of the flight. There shall be no flight test on scheduled or non-scheduled revenue flight.

6) Re-testing after failure.

An applicant for a written or flight test who fails that test may not apply for re-testing until 30 days after the date he failed the test. However, in the case of his first failure, he may apply for retesting before the 30 days have expired upon presenting a written statement from an Authorized Examiner certifying that he has given flight or ground instruction as appropriate to the applicant and finds him competent to take the test.



ATTACHMENT B LOG BOOKS

- 1) General
The aeronautical training and experience used to meet the requirements for a certificate or rating, or the recent flight experience requirements of this Part, must be shown by a reliable record.
- 2) Logbook entries
Each Crewmember shall enter the following information for each flight or lesson logged-:
 - a) General.
 - i) Date;
 - ii) Total time of flight;
 - iii) Place or points of departure and arrival;
 - iv) Type and identification of aircraft.
 - b) Type of Pilot experience or training.
 - i) Pilot-in-command or Solo;
 - ii) Second-in-command;
 - iii) Flight instruction received from an Authorized Examiner;
 - iv) Instrument flight instruction from an Authorized Examiner;
 - v) Pilot ground trainer instructor;
 - vi) Other Pilot time.
 - c) Conditions of flight.
 - (i) Day or night;
 - (ii) Actual instrument;
 - (iii) Simulated instrument conditions;
- 3) Logging of Pilot time
 - a) Solo flight time. A Pilot may log as Solo flight time only that flight time when he is the sole occupant of the aircraft. However, a Student Pilot may also log as Solo flight time that time during which he acts as the Pilot-in-command of an aircraft requiring more than one commander.
 - b) Pilot-in-command flight time.
 - i. A Private or Commercial Pilot may log as Pilot-in command time only that flight time during which that Pilot is the sole manipulator of the controls of an aircraft;
 - ii. An Airline Transport Pilot may log as Pilot-in command time all of the flight time during which he acts as Pilot-in-command;
 - iii. An Authorized Examiner may log as Pilot-in command time any flight time during which he acts as a Flight Instructor.
 - c) Second-in-Command flight time. A Pilot may log as Second-in-command time all flight time during which he acts as Second-in-command of an aircraft on which more than one Pilot is required under the type certification of the aircraft or the regulations under which the flight is conducted.
 - d) Instrument flight time. A Pilot may log as instrument flight time only that time during which he operates the aircraft solely by reference to instruments, under actual or simulated instrument flight conditions. Each entry must include the place and type of each instrument approach



completed, and the name of the Safety Pilot for each simulated instrument flight. An Instrument Flight Instructor may log as instrument time that time during which he acts as Instrument Flight Instructor in actual instrument weather conditions.

- e) Instruction time. All time logged as flight instruction, instrument flight instruction, Pilot ground trainer instruction, or ground instruction time must be certified by the appropriately- rated and certified Instructor from whom it was received.
- 4) Presentation of logbook
A Pilot must present his logbook (or other record required by this section) for inspection upon request by the CAA Inspector within 7 days.



ATTACHMENT C TRAINING PROGRAMME

- 1) **General.**
 - a) Each Operator shall:
 - i. Establish and obtain the appropriate initial and final approval from CAA of a training programme that meets the requirements of this Attachment, and that ensures that each Crewmember, Authorized Examiner, Flight Instructor are trained accordingly to perform his assigned duties;
 - ii. Provide adequate ground and flight-training facilities and properly-qualified Ground Instructors for the training required by this Part;
 - iii. Provide and keep current with respect to each aircraft type and, if applicable, the particular variations within that aircraft type, appropriate training material, examinations, forms, instructions, and procedures for use in conducting the training and checks required by this Part; and
 - iv. Provide an adequate number of Flight Instructors, Simulator Instructors, Technical Instructors and Safety Instructors to conduct the necessary training.
 - b) Each Instructor who is responsible for a particular ground training subject, segment of flight training, course of training, proficiency check under this Part shall certify as to the proficiency and knowledge of the Crewmember or Instructor concerned upon completion of that training or check. That certification shall be made a part of the Crewmember's record;
 - c) Training subjects that are applicable to more than one aircraft or Crewmember position and that have been satisfactorily completed in connection with prior training for another aircraft or another Crewmember position, need not be repeated during subsequent training other than recurrent training;
- 2) **Training programme and revision: Initial and final approval.**
 - a) To obtain initial and final approval of a training programme or a revision to an approved training programme, each Operator must submit to the CAA:
 - i. An outline of the proposed programme or revision, including an outline of the proposed or revised curriculum, that provides enough information about the proposed training programme;
 - ii. Additional relevant information as may be requested by the CAA.
 - b) If the proposed training programme or revision complies with this Attachment, the CAA grants initial approval in writing after which the Operator may conduct the training in accordance with that programme. The CAA then evaluates the effectiveness of the training programme and advises the Operator of deficiencies, if any, that must be corrected;
 - c) The CAA grants final approval of the training programme or revision if the Operator shows that the training conducted under the initial approval set forth in (b) of this Attachment ensures that each person that



- successfully completes the training is adequately trained to perform his assigned duties;
- d) Whenever the CAA finds that revisions are necessary for the continued adequacy of a training programme that has been granted final approval, the Operator shall, after notification by the CAA, make any changes in the programme that are found necessary by the CAA within 30 days after receiving such notice.
- 3) **Training programme: Approval of aircraft simulators and other training devices.**
- a) Each aircraft simulator and other training devices that are used in a training course must:
- i. Be specifically approved for:
 - A) The Operator;
 - B) The type of aircraft and, if applicable, the particular variation within a type, for which the training or check is being conducted; and
 - C) The particular maneuver, procedure, or Crewmember function involved.
 - ii. Maintain the performance, function, and other characteristics that are required for approval;
 - iii. Be modified to conform with any modification to the aircraft being simulated that results in changes to performance, function, or other characteristics required for approval;
 - iv. Be given a daily functional pre-flight check before being used;
 - v. Have a daily discrepancy log kept with each discrepancy entered in that log by the appropriate Instructor or CAA Inspector at the end of each training or check flight.
- b) A particular aircraft simulator or other training device may be approved for use by more than one Operator.
- c) An aircraft simulator may be used instead of the aircraft to satisfy the in-flight requirements, if the simulator—
- i. Is approved under this section and meets the appropriate simulator requirements.
 - ii. Is used as part of an approved programme that meets the training requirements.
- d) An aircraft simulator approved under this Part must be used instead of the aircraft to satisfy the flight crew specific training requirements such as:
- Low level wind shear, and in-flight turbulence;
- Low Visibility Operations (LVOPS);
Controlled Flight Into Terrain (CFIT);
Traffic Collision and Avoidance System or Airborne Collision Avoidance System (TCAS / ACAS)
Extended Twin Engine Operations (ETOPS).



4) Training courses using aircraft simulators and other training devices.

A course of training in aircraft simulators and other training devices shall be included in the Operator's approved training programme for use as provided in this Attachment if that course:-

- a) Provides sufficient hours of training at the pilot controls of an aircraft simulator as well as a proper briefing before and after the training.
- b) Provides training in at least the procedures and manoeuvres set forth in Attachment A to this Part, or
- c) Provides line-oriented flight training (LOFT) that:
 - i. Utilizes a normal flight crew complement;
 - ii. Includes at least the manoeuvres and procedures (abnormal and emergency) that may be expected in line operations;
 - iii. Is representative of the flight segment appropriate to the operations being conducted by the Operator; and
 - iv. Is given by a qualified Instructor.



ATTACHMENT D SYNTHETIC TRAINING DEVICE

1) **General.**

This Attachment provides guidelines for and a means of achieving Flight Crew training in advanced aircraft simulators. This plan for achieving the goal of advanced simulation consists of three major phases to facilitate the plan's implementation. The three-phase plan is to provide standards for a progressive upgrade of aircraft simulators so that the total scope of Flight Crew training can be enhanced. Each phase builds on the preceding phase so that the final advanced simulator phase includes all the requirements of the preceding phases. This Attachment describes the simulator and visual system requirements, which must be achieved to obtain approval of certain types of training in the simulator. Each simulator, which is used under this Attachment must be approved as a Phase I, II or III simulator, as appropriate.

To obtain CAA approval of the simulator for a specific phase, the following must be demonstrated to the satisfaction of the CAA Inspector:

- a) Documented proof of compliance with the appropriate simulator, visual system, and additional training requirements of this Appendix for the phase for which approval is requested and preceding phases, if appropriate.
- b) An evaluation of the simulator to ensure that its ground, flight, and landing performance duplicate the type of aircraft simulated (Phase I Approval tests).
- c) An evaluation of the appropriate simulator and visual system requirements of the phase for which approval is requested and preceding phases, if appropriate.

2) **Changes to Simulator Programming.**

While a need exists for some flexibility in making changes in the software programme, strict scrutiny of these changes is essential to ensure that the simulator retains its ability to duplicate the aircraft's flight and ground characteristics. Therefore, the following procedure must be followed to allow these changes without affecting the approval of the simulator:

- a) 60 Days before making changes to the software programme which might have an impact on the flight or ground dynamics of the simulator, a complete list of these planned changes, including dynamics related to the motion and visual systems, must be provided, in writing, to the CAA.
- b) If the CAA does not object to the planned programming changes, the Operator should make the changes.
- c) Changes which might affect the approved simulator Phase I test guide must be tested by the Operator in the simulator to determine the impact of the change before submission to the CAA.
- d) Software changes actually installed must be summarized and provided to the CAA. When the Operator's test shows a difference in simulator performance due to a change, an amended copy of the test guide page,



which includes the new simulator test results will also be provided to update the CAA copy of the test guide.

- e) The CAA may examine supporting data or flight-check the simulator, or both, to ensure that the performance of the simulator has not been degraded by any change in software programming.
- f) All requests for changes are evaluated on the basis of the same criteria as used in the initial approval of the simulator for Phase I, II, or III.

3) **Simulator Minimum Equipment List (MEL)**

Because of the strict tolerances and other approval requirements of the simulators, the simulator can provide realistic training with certain nonessential items inoperative. Therefore, an Operator may operate its simulator under a MEL, which has been approved by the CAA for that simulator. The MEL includes simulator components and indicates the type of training or checking that is authorized if the component becomes inoperative. To accomplish this, the component is placed in one of the following categories along with any remarks applicable to the component's use in the training programme:

- a) No training or checking.
- b) Training in specific manoeuvres.
- c) Certification and checking.
- d) Line-Oriented Flight Training (LOFT).

4) **Advanced Simulation Training Programme.**

For an Operator to conduct Phase II or III training under this Attachment, all required simulator instruction and checks must be conducted under an advanced simulation training programme which is approved by the CAA for the Operator. This programme must also ensure that all Instructors and Authorized Examiners used in this training are appropriately qualified to provide the training required. The Advanced Simulation Training Programme shall include the following:

- a) The Operator's initial, transition, upgrade and recurrent simulator training programmes and the procedures for re-establishing recentness of experience in the simulator.
- b) How the training programme will integrate Phase I, II, and III simulators with other simulators and training devices to maximize the total training, checking, and certification functions.
- c) Documentation and experience of each Instructor employed by the Operator for the operation of the simulator.
- d) A procedure to ensure that each Instructor and Authorized Examiner actively participates in either an approved regularly scheduled line flying programme as a Flight Crewmember or an approved line observation programme in the same aircraft type for which that person is instructing or checking.
- e) A procedure to ensure that each Instructor and Authorized Examiner is given a sufficient hours of training each year to become familiar with the Operator's advanced simulation training programme, or changes to it, and to emphasize their respective roles in the programme. Training for simulator Instructors and Authorized Examiners shall include training



policies and procedures, instruction methods, techniques, and operation of simulator controls, limitations of the simulator, and minimum equipment required for each course of training.

- f) A special Line-Oriented Flight Training (LOFT) programme to facilitate the transition from the simulator to line flying. The LOFT programme shall consist of at least four hours of training for each Flight Crew. It also contains details of the Operator's route. One of the flight segments contains strictly normal operating procedures from push back at one airport to arrival at another. Another flight segment contains training in appropriate abnormal and emergency flight operations.

5) **PHASE I**

- a) Training and checking permitted:
 - i. Recentness of experience;
 - ii. Night takeoffs and landings;
 - iii. Proficiency Check.
- b) Simulator Requirements:
 - i. Aerodynamic programming to include:
 - A) Ground effect - For example, round-out, flare, and touchdown. This requires data on lift, drag, and pitching moment in ground effect.
 - B) Ground reaction - Reaction of the airplane upon contact with the runway during landing to include strut deflections, tire friction, and side forces.
 - C) Ground handling characteristics - steering inputs to include crosswind, braking, thrust reversing, deceleration, and turning radius.
 - ii. Minimum of three-axis freedom of motion systems.
 - iii. Phase I landing maneuver test guide to verify simulator data with actual aircraft flight test data, and provide simulator performance tests for Phase I initial approval.
 - iv. Multi-channel records capable of recording Phase I performance tests.
- c) Visual Requirements:
 - i. Visual system compatibility with aerodynamic programming.
 - ii. Visual system response time from Pilot control input to visual system output shall not exceed 300 milliseconds more than the movement of the aircraft to a similar input. Visual system response time is defined as the completions of the visual display scan of the first video field containing different information resulting from an abrupt control input.
 - iii. A means of recording the visual response time for comparison with aircraft data.
 - iv. Visual cues to assess sink rate and depth perception during landings.
 - v. Visual scene to instrument correlation to preclude perceptible lags.



6) PHASE II

- a) Training and checking permitted
 - i. For all Pilots, transition training and for a Pilot-in command the certification check as required by these Regulations.
 - ii. Upgrade to Pilot-in-command, training and certification check.

- b) Simulator Requirements
 - i. Representative crosswind and three-dimensional wind shear dynamics based on aircraft-related data.
 - ii. Representative stopping and directional control forces for at least the following runway conditions based on aircraft related data:
 - A) Dry;
 - B) Wet;
 - C) Icy;
 - D) Patchy wet;
 - E) Patchy ice;
 - F) Wet on rubber residue in touchdown zone;
 - G) Slush.
 - iii. Representative brake and tyre failure dynamics (including anti-skid) and decreased brake efficiency due to high brake temperature based on aircraft-related data,
 - iv. A motion system, which provides motion cues equal to or better than those provided by a six-axis freedom-of-motion system.
 - v. Operational principal navigation systems, including electronic flight instrument systems and INS.
 - vi. Means for quickly and effectively testing simulator programming and hardware.
 - vii. Expanded simulator computer capacity, accuracy, resolution, and dynamic response to meet Phase II demands. Resolution equivalent to that of at least a 32-bit word-length computer is required for critical aerodynamic programmes.
 - viii. Timely permanent update of simulator hardware and programming subsequent to aircraft modification.
 - ix. Sound of precipitation and significant aircraft noises perceptible to the Pilot during normal operations and the sound of a crash when the simulator is landed in excess of landing gear limitations.
 - x. Aircraft control feels dynamics shall duplicate the aircraft simulated. This shall be determined by comparing a recording of the control feel dynamics of the simulator to aircraft measurements in the takeoff, cruise, and landing configuration.
 - xi. Relative responses of the motion system, visual system, and cockpit instruments shall be coupled closely to provide integrated sensory cues. These systems shall respond to abrupt pitch, roll, and yaw inputs at Pilot's position within 150 milliseconds of the time, but not before the time, when the aircraft would respond under the same conditions. Visual scene changes from a steady state disturbance shall not occur before the resultant motion onset but within the system dynamic response tolerance of 150 milliseconds. The test to determine compliance with these requirements shall include



- simultaneously recording the analog output from the Pilot's control column and radar's, the output from an accelerometer attached to the motion system platform located at an acceptable location near the Pilots' seats, the output signal to the visual system display (including visual system analog delays), and the output signal to the Pilot's attitude indicator or an equivalent test approved by the CAA.
- xii) The test results in a comparison of a recording of the simulator's response and actual aircraft response data in the takeoff, cruise, and landing configuration.
- c) Visual Requirements
- i. Dusk and night visual scenes with at least three specific airport representations, including a capability of at least 10 levels of occulting, general terrain characteristics, and significant landmarks.
 - ii. Radio navigation aids properly oriented to the airport runway layout.
 - iii. Test procedures to quickly confirm visual system color, RVR, focus, intensity, level horizon, and attitude as compared to the simulator attitude indicator.
 - iv. For the approach and landing phase of a flight, at and below an altitude of 2,000 feet above the airport and within a radius of 10 miles from the airport, weather representations including the following:
 - A) Variable cloud density;
 - B) Partial obscuration of ground scenes; that is, the effect of a scattered to broken cloud deck;
 - C) Gradual breakout;
 - D) Patchy fog;
 - E) The effect of fog on airport lighting;
 - F) Category II and III weather conditions;
 - v. Continuous minimum visual field of view of 75 horizontal and 30 vertical per pilot seat. Visual gaps shall occur only as they would in the aircraft simulated or as required by visual system hardware. Both Pilot seat visual systems shall be able to be operated simultaneously.
 - vi. Capability to present ground and air hazards such as another aircraft crossing the active runway, or converging airborne traffic.
- 7) **PHASE III**
- a) Training and checking permitted
All Pilot flight training should meet the requirements of this Part.
 - b) Simulator Requirements
 - i. Characteristic buffet motions that result from operation of the aircraft (for example, high-speed buffet, extended landing gear, flaps, nose-wheel scuffing, stall) which can be sensed at the flight check. The simulator must be programmed and instrumented in such a manner that the characteristic buffet modes can be measured and compared to aircraft data. Aircraft data is also required to define



flight deck motions when the aircraft is subjected to atmospheric disturbances such as rough air and cobblestone turbulence. General-purpose disturbance models that approximate demonstrable flight test data are acceptable.

- ii. Realistic amplitude and frequency of cockpit noises and sounds, including precipitation static and engine and airframe sounds. The sounds shall be coordinated with the weather representations required in c) (iii).
- iii. Self-testing for simulator hardware and programming to determine compliance with Phase I, II and III simulator requirements.
- iv. Diagnostic analysis print-out of simulator malfunctions sufficient to determine MEL compliance. These print-outs shall be retained by the Operator for CAA review and inspection.

c) Visual Requirements:

- i) Daylight, dusk, and night visual scenes with sufficient scene-content to recognize a specific airport, the terrain, and major landmarks around that airport and to successfully accomplish a visual landing. For the purpose of this rule, a daylight visual system is defined as a visual system capable of producing, as a minimum, full color presentations. For daylight scenes, such ambient lighting shall “washout” the displayed visual scene.
- ii. Visual scenes portraying representative physical relationships which are known to cause landing illusions for some Pilots, including short runway, runway gradient, visual topographic features, and rising terrain.
- iii. Special weather representations which include the sound, visual and motion effects of entering light, medium and heavy precipitation near a thunderstorm on takeoff, approach, and landings at and below an altitude of 2000 feet and within a radius of ten miles from the airport.
- iv. Phase II visual requirements in daylight as well as dusk and night representations.
- v. Wet and, if appropriate for the Operator, snow-covered runway representations, including runway lighting effects.
- vi. Realistic color and directionality of airport lighting.
- vii. Weather radar presentations in aircraft where radar information is presented on the Pilot’s navigation instrument.



ATTACHMENT E
REQUIREMENTS FOR PROFICIENCY IN LANGUAGES
(Used for Radiotelephony Communications)

1) **General**

Note.— The ICAO language proficiency requirements include the holistic descriptors at Section 2 and the ICAO Operational Level (Level 4) of the ICAO Language Proficiency Rating Scale in the Attachment. The language proficiency requirements are applicable to the use of both phraseologies and plain language.

To meet the language proficiency requirements contained in this Part, an applicant for a license or a license holder shall demonstrate, in a manner acceptable to the licensing authority, compliance with the holistic descriptors and with the Sudan CAA Operational Level (Level 4) of the ICAO Language Proficiency Rating Scale given below.

2) **Holistic descriptors**

Proficient speakers shall:

- a) communicate effectively in voice-only (telephone/ radiotelephone) and in face-to-face situations;
- b) communicate on common, concrete and work-related topics with accuracy and clarity;
- c) use appropriate communicative strategies to exchange messages and to recognize and resolve misunderstandings (e.g. to check, confirm, or clarify information) in a general or work-related context;
- d) handle successfully and with relative ease the linguistic challenges presented by a complication or unexpected turn of events that occurs within the context of a routine work situation or communicative task with which they are otherwise familiar; and
- e) use a dialect or accent which is intelligible to the aeronautical community.

3) **Language Proficiency Rating Scale**



Table 1 – Expert, Extended and operational levels

LEVEL	PRONUNCIATION <i>Assumes a dialect and/or accent intelligible to the aeronautical community.</i>	STRUCTURE <i>Relevant grammatical structures and sentence patterns are determined by language functions appropriate to the task.</i>	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTIONS
Expert 6	Pronunciation, stress, rhythm, and intonation, though possibly influenced by the first language or regional variation, almost never interfere with ease of understanding.	Both basic and complex grammatical structures and sentence patterns are consistently well controlled.	Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced, and sensitive to register.	Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, e.g. to emphasize a point. Uses appropriate discourse markers and connectors spontaneously.	Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties.	Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues and responds to them appropriately.
Extended 5	Pronunciation, stress, rhythm, and intonation, though influenced by the first language or regional variation, rarely interfere with ease of understanding.	Basic grammatical structures and sentence patterns are consistently well controlled. Complex structures are attempted but with errors which sometimes interfere with meaning.	Vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work-related topics. Paraphrases consistently and successfully. Vocabulary is sometimes idiomatic.	Able to speak at length with relative ease on familiar topics but may not vary speech flow as a stylistic device. Can make use of appropriate discourse markers or connectors.	Comprehension is accurate on common, concrete, and work-related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events. Is able to comprehend a range of speech varieties (dialect and/or accent) or registers.	Responses are immediate, appropriate, and informative. Manages the speaker/listener relationship effectively.
Operational 4	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation but only sometimes interfere with ease of understanding.	Basic grammatical structures and sentence patterns are used creatively and are usually well controlled. Errors may occur, particularly in unusual or unexpected circumstances, but rarely interfere with meaning.	Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work-related topics. Can often paraphrase successfully when lacking vocabulary in unusual or unexpected circumstances.	Produces stretches of language at an appropriate tempo. There may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction, but this does not prevent effective communication. Can make limited use of discourse markers or connectors. Fillers are not distracting.	Comprehension is mostly accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies.	Responses are usually immediate, appropriate, and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deals adequately with apparent misunderstandings by checking, confirming, or clarifying.
<i>Levels 1, 2 and 3 are on subsequent page.</i>						



2. Pre-operational, Elementary, and Pre-elementary Levels

LEVEL	PRONUNCIATION	STRUCTURE	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTIONS
<i>Levels 4, 5 and 6 are on preceding page.</i>						
Pre-OPERATIONAL 3	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation and frequently interfere with ease of understanding.	Basic grammatical structures and sentence patterns associated with predictable situations are not always well controlled. Errors frequently interfere with meaning.	Vocabulary range and accuracy are often sufficient to communicate on common, concrete, or work-related topics, but range is limited and the word choice often inappropriate. Is often unable to paraphrase successfully when lacking vocabulary.	Produces stretches of language, but phrasing and pausing are often inappropriate. Hesitation or silence in language processing may prevent effective communication. Fillers are sometimes distracting.	Comprehension is often accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. May fail to understand a linguistic or situational complication or an unexpected turn of events.	Responses are sometimes immediate, appropriate, and informative. Can initiate and maintain exchanges with reasonable ease on familiar topics and in predictable situations. Generally inadequate when dealing with an unexpected turn of events.
ELEMENTARY 2	Pronunciation, stress, rhythm, and intonation are heavily influenced by the first language or regional variation and usually interfere with ease of understanding.	Shows only limited control of a few simple memorized grammatical structures and sentence patterns.	Limited vocabulary range consisting only of isolated words and memorized phrases.	Can produce very short, isolated, memorized utterances with frequent pausing and a distracting use of fillers to search for expressions and to articulate less familiar words.	Comprehension is limited to isolated, memorized phrases when they are carefully and slowly articulated.	Response time is slow and often inappropriate. Interaction is limited to simple routine exchanges.
Pre-ELEMENTARY 1	Performs at a level below the Elementary level.	Performs at a level below the elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.

Note:- The Operational Level (Level 4) is the minimum required proficiency level for radiotelephony communication. Levels 1 through 3 describe Pre-elementary, Elementary, and Pre-operational levels of language proficiency, respectively, all of which describe a level of proficiency below the ICAO language proficiency requirement. Levels 5 and 6 describe Extended and Expert levels, at levels of proficiency more advanced than the minimum required Standard. As a whole, the scale will serve as benchmarks for training and testing, and in assisting candidates to attain the ICAO Operational Level (Level 4).

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