



SCAA

**DOC N°: S 1**

**SUDAN CIVIL AVIATION REGULATIONS (SUCARS)  
PART 1 - Personnel Licensing and Training  
Third Edition, August 2021**

Issued and Published under the Authority of the Director General

SUDAN CIVIL AVIATION AUTHORITY  
THE REPUBLIC OF SUDAN

(August 2021)





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PART 1 - Personnel Licensing and Training  
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## INTRODUCTION – AUTHORITY TO PUBLISH

SUCAR Part 1 – Personnel Licensing Third Edition, August, 2021 has been promulgated pursuant to Article 22 of the Sudan Civil Aviation Act, 2018 and issued by the Board of Directors of Civil Aviation. The SUCAR has been published under my Authority on the advice of the Board of Directors of Civil Aviation as is required by the Sudan Civil Aviation Act.

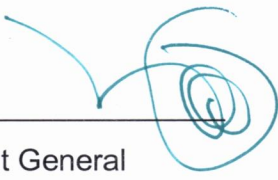
The Standards contained in this document including the associated Advisory Circulars, Directives, Operational Policies, Orders, or Sudan Civil Aviation Safety Publications, fully comply with the Standards and Recommended Practices (SARPs) contained in Annex 1 – Personnel Licensing to the Convention on International Civil Aviation, signed in Chicago on 7 December 1944 (Chicago Convention) and personnel licensing and training documents issued by ICAO.

SUCAR Part 1, contains comprehensive requirements for the licensing of appropriate aviation personnel. This Third Edition of SUCAR Part 1 repeals and supersedes the Second Edition of the Document published in January 2017.

The Director General of the SCAA has been delegated to issue, revise and amend Advisory Circulars, Directives, Operational Policies, Orders, relevant Procedures Manuals, Guidance Material, etc., related to and referred in this SUCAR. The Director General of the SCAA shall inform the Board of Directors of Civil Aviation, in writing, on the Advisory Circulars, Directives, Operational Policies, Orders, Procedures Manuals, Guidance Material, etc., that he may have issued, revised or amended under this authority and are enforceable under the Act.

SUCAR Part 1 – Personnel Licensing is part of the overall regulatory framework of civil aviation in Sudan and is supported by other related SUCARs such as Part 2 – Rules of the Air, Part 3 – Meteorological Services for International Air Navigation, Part 4 – Aeronautical Charts, Part 6 – Operations of Aircraft, Part 8 – Airworthiness of Aircraft, Part 11 – Air Traffic Services, Part 12 – Search & Rescue, Part 14 – Aerodromes, Part 18 – Safe Transport of Dangerous Goods by Air and Part 19 – Safety Management, just to mention few of the SUCARs that are closely related.

Any Amendment in this SUCAR it Forms an integral of it.

  
Lieutenant General  
Yassin Ibrahim Yassin Abdel-Hadi  
Minister of Defence





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**RECORDS OF AMENDMENTS**

The space below is provided to keep a record of amendments.

Amendment No.	Date of Entry	Entered by	Signature



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## TABLE OF CONTENTS

<b>INTRODUCTION – AUTHORITY TO PUBLISH</b>	i
<b>RECORDS OF AMENDMENTS</b>	iii
<b>TABLE OF CONTENTS</b>	v
<b>ABBREVIATIONS</b>	vii
<b>LIST OF EFFECTIVE PAGES</b>	ix
<b>FOREWORD</b>	xi
<b>APPLICABILITY</b>	xvii
<b>CHAPTER 1 – DEFINITIONS</b>	
<b>CHAPTER 2 – GENERAL RULES CONCERNING LICENSING</b>	
2.1 Licensing Authority	2-1
2.2 Licences and Certificates Issued	2-1
2.3 Licences Based on Military Qualification	2-2
2.4 Licences and Certificates Issued to Non-Sudanese Pilots, Flight Engineers and Authorized Examiners	2-3
2.5 Authority to Act as a Flight Crew member	2-3
2.6 Validating Licences Issued by Other Contracting states	2-3
2.7 Privileges of the Holder of a Licence	2-7
2.8 Authority to Act as a Holder of a Licence or Certificate (Other than a Flight Crew Member)	2-7
2.9 Medical Fitness	2-7
2.10 Validity of Licences	2-9
2.11 Circumstances in which Medical Examination may be Deferred	2-11
2.12 Decrease in Medical Fitness	2-12
2.13 Use of Psychoactive Substance	2-12
2.14 Approved Training and Approved Training Organizations	2-12
2.15 Language Proficiency	2-13
2.16 Duration of Pilot and Flight Engineer Licences	2-13
2.17 Surrender, Suspension or Revocation of Licences, Certificates and Authorizations	2-13
2.18 Replacement of Lost or Destroyed Licences/Certificates/Authorizations	2-14
<b>CHAPTER 3 – LICENCES AND RATINGS FOR PILOTS</b>	
3.1 General Rules Concerning Pilot Licences and Ratings	3-1
3.2 Student Pilot	3-5
3.3 Private Pilot Licence	3-5
3.4 Commercial Pilot Licence	3-11
3.5 Multi-crew Pilot Licence Appropriate to the Aeroplane Category	3-18
3.6 Airline Transport Pilot	3-20
3.7 Instrument Rating	3-25
3.8 Flight Instructor Rating Appropriate to Aeroplanes, Helicopters and Powered Lifts	3-28
3.9 Glider Pilot Licence	3-30
3.10 Free Balloon Pilot Licence	3-32

## **CHAPTER 4 – LICENCES AND RATINGS FOR CREW MEMBERS OTHER THAN PILOTS**

4.1	General Rules Concerning Flight Engineer Licences	4-1
4.2	Flight Engineer Licences	4-1
4.3	Flight Navigator Licences	4-3

## **CHAPTER 5 – LICENCES AND RATINGS FOR PERSONNEL OTHER THAN FLIGHT CREW MEMBERS**

5.1	General Rules for Personnel Other than Flight Crewmembers	5-1
5.2	Aircraft maintenance (Technician/Engineer/Mechanic)	5-1
5.3	Student Air Traffic Controller licence	5-7
5.4	Air Traffic Controller Licence	5-7
5.5	Air Traffic Controller Ratings	5-8
5.6	Flight Radiotelephone Operator	5-12

## **CHAPTER 6 – LICENCES FOR FLIGHT OPERATIONS AND OTHER**

6.1	<b>General</b>	6-1
6.2	<b>Flight Operations Officer/Dispatcher</b>	6-2
6.3	<b>Cabin Crewmember</b>	6-4
6.4	<b>Aeronautical Station Operator License</b>	6-6
6.5	<b>LOAD MASTER CERTIFICATE</b>	6-7

## **CHAPTER 7 – SPECIFICATIONS FOR PERSONNEL LICENCES**

7.1	General	7-1
7.2	Specifications of Licences Issued by Sudan	7-1
7.3	Material	7-1
7.4	Color	7-1
7.5	Language	7-1
7.6	Arrangement of Items	7-1

## **CHAPTER 8 – MEDICAL STANDARDS AND CERTIFICATION**

8.1	Medical Assessments - General	8-1
8.2	Requirements for Medical Assessment	8-2
8.3	Class 1 Medical Assessment	8-4
8.4	Class 2 Medical Assessment	8-11
8.5	Class 3 Medical Assessment	8-18
8.6	Medical Assessor	8-25
8.7	Designated Medical Examiner	8-25
8.8	Aviation Medical Center	8-25

## **CHAPTER 9 – APPROVED TRAINING ORGANIZATIONS**

9.1	Issue of Approval	9-1
9.2	Training and Procedures Manual	9-2
9.3	Quality Assurance System	9-2
9.4	Facilities	9-3
9.5	Personnel	9-4
9.6	Records	9-4
9.7	Oversight	9-4
9.8	Evaluation and Checking	9-5
9.9	Approval of Foreign ATO	9-5
9.10	Bilateral approval agreement	9-5



## **APPENDIX 1 – TESTS AND EXAMINATIONS – GENERAL PROCEDURES**

1.	Written Examinations	Ap1-1
2.	Written Examination Policy	Ap1-2
3.	Prerequisites for Flight Tests	Ap1-3
4.	Flight Test – Required Aircraft and Equipment	Ap1-4
5.	Flight Test – Status of SCAA Inspectors or Authorized Examiners	Ap1-5
6.	Retesting after Failure	Ap1-6

## **APPENDIX 2 – LOG BOOKS**

1.	General	Ap2-1
2.	Logbook Entries	Ap2-2
3.	Logging of Pilot Time	Ap2-3
4.	Presentation of Logbook	Ap2-4

## **APPENDIX 3 – TRAINING PROGRAMME**

1.	General	Ap3-1
2.	Training Programme and Revision – Initial and final Approval	Ap3-2
3.	Training Programme – Approval of Aircraft Simulators and Other Training Devices	Ap3-3
4.	Training Courses Using Aircraft Simulators and Other Training devices	Ap3-4

## **APPENDIX 4 – SYNTHETIC TRAINING DEVICES**

1.	General	Ap4-1
2.	Changes to Simulator Programme	Ap4-2
3.	Simulator Minimum Equipment List	Ap4-3
4.	Advanced Simulator Training Programme	Ap4-4
5.	Phase I	Ap4-5
6.	Phase II	Ap4-6
7.	Phase III	Ap4-7

## **APPENDIX 5 – LANGUAGE PROFICIENCY REQUIREMENTS**

1.	General	Ap5-1
2.	Holistic Descriptions	Ap5-2
3.	Language Proficiency Rating Scale	Ap5-3

## **ATTACHMENT TO APPENDIX 5 – LANGUAGE PROFICIENCY RATING SCALE**

1.	Expert, Extended and Operational Levels	Att-1
2.	Pre-operational, Elementary and Pre-elementary Levels	Att-2

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## ABBREVIATIONS

AD	Airworthiness Directives
AIC	Aeronautical information circular
AIP	Aeronautical information publication
AMEL	Aircraft maintenance engineers license
AOC	Air operator certificate
ATC	Air traffic control
ATO	Approved training organization
ATPL	Airline transport pilot licence
ATS	Air traffic services
CAA	Civil Aviation Authority
CFIT	Controlled flight into terrain
CMA	Chief medical Assessor
CPL	Commercial pilot licence
CPL/IR	Commercial pilot licence with instrument rating
CRM	Crew resource management
DG	Director General of the Civil Aviation Authority
DME	Designated Medical Examiner
ETOPs	Extended twin engine operations
FCL	Flight crew licensing
FE	Flight engineer
FSTD	Flight simulation training device
ICAO	International Civil Aviation Organization
LOFT	Line oriented flight training
MCTOM	Maximum certificated take-off mass
MPL	Multi-crew pilot licence
PEL	Personnel licensing
PIC	Pilot-in-command
PIC/US	Pilot-in-command under supervision
PPL	Private pilot licence
PPL/IR	Private pilot licence with instrument rating
QA	Quality assurance
RTF	Radiotelephony
SARPs	Standards and Recommended Practices
SCAA	Sudan Civil Aviation Authority
SCAPs	Sudan Civil Aviation Safety Publications
SUCAR	Sudan Civil Aviation Regulations

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## LIST OF EFFECTIVE PAGES

Chapter	Page	Date
Foreword	xi	31/12/1018
Abbreviations	vii	31/12/1018
Records of amendments	iii	31/12/1018
List of effective pages	ix	31/12/1018
Table of contents	v	31/12/1018
Chapter 1- Definitions	1-1 to 1-8	31/12/1018
Chapter 2-General rules concerning licensing	2-1 to 2-14	31/12/1018
Chapter 3- Licenses and ratings for pilots	3-1 to 3-36	31/12/1018
Chapter 4- Licenses and ratings for crew members other than pilots	4-1 to 4-5	31/12/1018
Chapter 5 – licenses and rating for personnel other than flight crew members	5-1 to 5-13	31/12/1018
Chapter 6 – Flight operations/Dispatch license	6-1 to 6-4	31/12/1018
Chapter 7- Specifications for personnel licenses	7-1	31/12/1018
Chapter 8 – Medical standards and certification	8-1 to 8-26	31/12/1018
Chapter 9- Approved Training Organizations	9-1 to 9-5	31/12/1018
Appendix 1- Tests and examinations	Ap1-1 to Ap1.3	31/12/1018
Appendix 2- Logbooks	Ap2-1 to Ap2-3	31/12/1018
Appendix 3 – Training Program	Ap3-1 to Ap3-3	31/12/1018
Appendix 4 – Synthetic training devices	Ap4-1 to Ap4-7	31/12/1018
Appendix 5 – Language proficiency requirements	A5-1	31/12/1018
Attachment to appendix 4 – Multi- crew pilot license levels of competency		31/12/1018
Attachment to appendix 5 – Language proficiency rating scale		31/12/1018



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## FOREWORD

### 1. **Legal background**

- 1.1 Pursuant to Article 22 of the Civil Aviation Act, 2018 regarding the empowerment of the Board of Directors of Civil Aviation to issue and amend Sudan Civil Aviation Regulations (SUCAR) for acceptance and consent by the Competent Minister, SUCARs are issued to ensure full compliance with the Annexes to the Convention on International Civil Aviation, signed in Chicago on 7 December 1944 (Chicago Convention) to which the Republic of Sudan is a Party. The Chicago Convention, through its Annexes, establishes the minimum Standards and Recommended Practices (SARPs) to ensure the safety and security of global air navigation activities and environmental protection. 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. Where not covered by the specific SUCAR, ICAO Annex SARPs, technical instruction in related technical publications and guidance material form a complimentary regulatory material for implementation in Sudan, as may be applicable, and thus are considered enforceable regulatory requirements in the areas that they address although they may not be contained in the relevant SUCAR, Operational Directive or Safety Notice. Technical instructions considered essential for implementation shall be included in the relevant SUCAR as soon as practicable and in any case during the next amendment of the SUCAR.
- 1.2 An aircraft, other than an aircraft registered in the Republic of Sudan, shall not fly over or land in the territories of the Republic of Sudan except under an authorization granted by the Sudan Civil Aviation Authority (SCAA) on behalf of the Government of the Republic of Sudan.
- 1.3 An aircraft other than an aircraft registered in the Republic of Sudan shall not take on-board or discharge any passengers or cargo at any location within the territories of the Republic of Sudan, being passengers or cargo carried or to be carried for hire or reward, without the permission of the SCAA granted for the aircraft in accordance with any conditions and limitations to which such permission may be subjected.
- 1.4 An aircraft shall not fly over or land in the territory of the Republic of Sudan unless it is registered in:
- a) The Republic of Sudan; or
  - b) An ICAO Contracting State; or
  - c) Any other State where there is an agreement/arrangement between the Republic of Sudan and that State making provisions for over-flight or landing in the territory of the Republic of Sudan.

- 1.5 In accordance with the provisions of SUCAR Part 7 – Aircraft Nationality and Registration, an aircraft registered in the Republic of Sudan shall comply with all applicable regulations contained in the Sudan Civil Aviation Regulations.
- 1.6 An aircraft registered outside the Republic of Sudan shall comply with all applicable regulations contained in the Sudan Civil Aviation Regulations while operating to/from or within the territories of the Republic of Sudan.
- 1.7 An aircraft registered in the Republic of Sudan shall comply with the regulations of other ICAO contracting States where it may be operating or overflying.
- 1.8 The Sudan Civil Aviation Authority (SCAA) recognizes 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 SCAA may impose additional requirements.
- 1.9 Any difference that may exist between SUCAR requirements and corresponding ICAO Annex SARPs shall be reported to ICAO in line with the requirements of Article 38 of the Convention. Significant differences shall be published in the National Aeronautical Information Publications (AIP). The procedure for amending the SUCARs and filing of differences with ICAO are contained in the Rule making Manual, Fourth Edition, 2018 and is summarized in paragraph 4 below.
- 1.10 An effort has been made for SUCAR requirements to be fully compliant with corresponding ICAO Annex provisions; however, where an aviation activity for which a SUCAR regulation has not been promulgated is undertaken in the Sudan, the relevant ICAO Annex provisions shall be applicable (see also paragraph 1.1 above).
- 1.11 Provisions promulgated in the SUCARs shall be applicable within six months after the date that they have been signed by the Competent Minister and published following promulgation by the Board of Directors.

## 2. **Layout of the SUCAR document**

### 2.1 **Sudan Civil Aviation Regulations (SUCARs)**

- 2.1.1. The Republic of Sudan has promulgated or is in the process of promulgating operating regulations that are fully compliant with corresponding Standards contained in the Annexes to the *Convention on International Civil Aviation*. List of SUCARs promulgated in Sudan is contained in the Table below. The list shall be amended periodically to reflect the status of SUCAR implementation.
- 2.1.2. SUCARs, as may be applicable, are supported by various Guidance Materials, Procedures Manuals and Inspectors Handbooks designed to enable the SCAA to effectively and efficiently meet its safety oversight obligations as well as to provide the Inspectorate staff with a complete set of regulatory and supporting material.
- 2.1.3. Together, the SUCARs and relevant guidance materials, procedures and

handbooks form the means by which the SCAA regulates and supervises civil aviation activity in Sudan and of Sudanese registered aircraft wherever they may be operating.

2.1.4. List of Sudan Civil Aviation Regulations is presented in the Table below which shall be amended as required from time-to-time to ensure its currency. Each SUCAR, except when it is found to be necessary shall be composed of:

- a) Consent by the Minister;
- b) Foreword;
- c) Definitions;
- d) Regulatory Standards;
- e) Notes;
- f) Tables and figures;
- g) Appendices; and
- h) Attachments.

No.	SUCAR Part No.	Title/Name	Edition/Year
1.	SUCAR Part 1	Personnel Licensing	2 <sup>nd</sup> Edition/2017
2.	SUCAR Part 2	Rules of the Air	2 <sup>nd</sup> Edition/2021
3.	SUCAR Part 3	Meteorological Services	1 <sup>st</sup> Edition/2011
4.	SUCAR Part 4	Aeronautical Charts	1 <sup>st</sup> Edition/2011
5.	SUCAR Part 5	Units of Measurement	Under Development
6.	SUCAR Part 6 – Subpart I	Operations of Aircraft – Commercial Air Transport, aero planes	3 <sup>rd</sup> Edition/2017
7.	SUCAR Part 6 – Subpart II	Operations of Aircraft – General Aviation	2 <sup>nd</sup> Edition/2021
8.	SUCAR Part 6 – Subpart III	Operations of Aircraft – Commercial Helicopter Operations	1 <sup>st</sup> Edition/2021
9.	SUCAR Part 6 – Subpart VI	Aerial Work	1 <sup>st</sup> Edition/2021
10.	SUCAR Part 7	Aircraft Nationality and Registration Marks	1 <sup>st</sup> Edition/2017
11.	SUCAR Part 8	Airworthiness of Aircraft	1 <sup>st</sup> Edition/2017
12.	SUCAR Part 9	Facilitation	1 <sup>st</sup> Edition/2017
13.	SUCAR Part 10	Aeronautical Telecommunications	1 <sup>st</sup> Edition/2011
	SUCAR Part 10 Subpart II	Aeronautical Telecommunications	1 <sup>st</sup> Edition/2021
14.	SUCAR Part 11	Air Traffic Services	1 <sup>st</sup> Edition/2016
15.	SUCAR Part 12	Search and Rescue	1 <sup>st</sup> Edition/2011
16.	SUCAR Part 13	Aircraft Accident and Incident Investigations	1 <sup>st</sup> Edition/2011
17.	SUCAR Part 14 – Subpart I	Aerodromes – Aerodrome Design and Operations	3 <sup>rd</sup> Edition/2021

No.	SUCAR Part No.	Title/Name	Edition/Year
18.	SUCAR Part 14 – Subpart II	Heliports	3 <sup>rd</sup> Edition/2021
19.	SUCAR Part 15	Aeronautical Information Services	2 <sup>nd</sup> Edition/2021
20.	SUCAR Part 16 – Subpart I	Environmental Protection – Aircraft Noise	Under Development
21.	SUCAR Part 16 – Subpart II	Environmental Protection – Aircraft Engine Emissions	Under Development
22.	SUCAR Part 17	Aviation Security	2 <sup>nd</sup> Edition/2021
23.	SUCAR Part 18	The Safe Transport of Dangerous Goods	1 <sup>st</sup> Edition/2011
24.	SUCAR Part 19	Aviation Safety Management	2 <sup>nd</sup> Edition/2018

### 3. Rules of Construction

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

- a) Words importing the singular include the plural
- b) Words importing the plural include the singular, and
- c) Words importing the masculine gender include the feminine.
- d) “Shall” is used in an imperative sense.
- e) “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.
- f) The word “Includes” means includes but is not limited to.
- g) The word “Show” and its derivatives in these regulations have the exact intent as shown in the dictionary.

### 4. Amendment Rationale and Procedures

The 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. Information on the rule making process is contained in the “Rule Making Manual”, Fourth Edition, 2018.

### 5. Article 83bis

Sudan has ratified Article 83bis of the Convention on International Civil Aviation respecting the delegation of responsibilities in instances where aeroplane are leased, chartered, or interchanged in particular without crew, between ICAO contracting States that have ratified the Article.



## 6. Requirements

This SUCAR is for the approval and certification of aviation training organizations (ATOs) providing training to personnel who are engaged or aspire to engage in civil aviation activities in areas that are relevant to the safety, efficiencies and effectiveness of the civil aviation system; and also sets out the requirements for medical fitness in line with international requirements as set in Annex 1 to the Convention and the ICAO Manual of Civil Aviation Medicine (Doc 8984) as applicable.

## 7. Status of SUCAR components

A SUCAR is normally made up of the following component parts, not all of which however may not be found in every SUCAR:

### **Standard**

Any specification or physical characteristics, configuration, material, performance, personnel or procedure, the uniform application of which is recognized as necessary for the safety or regularity of international air navigation and to which the holder of an Air Operator Certificate issued by the Sudan Civil Aviation Authority shall conform to.

### **Appendices and Attachments**

Text comprising material grouped separately for convenience but forming part of the Standards.

### **Definition**

Definition of terms used in the SUCAR which are not self-explanatory in that they do have accepted dictionary meanings. A definition does not have independent status but is an essential part of each Standard in which the term is used, since a change in the meaning of the term would affect the specification.

### **Table and Figures**

Elements which add to or illustrate a regulatory requirement referred to in the SUCAR and form part of the associated regulatory requirement and have the same status.

### **References**

Text based on ICAO Standards and Recommended Practices and its guidance materials included in the SUCAR to enhance implementation.

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## APPLICABILITY

### 1. **Applicability**

#### 1.1 SUCAR Part 1 sets out:

- a) Requirements for personnel licensing in the Republic of Sudan for all licences issued by the Sudan Civil Aviation Authority that are required by Annex 1, to the Convention on International Civil Aviation. As such Standards contained in this SUCAR reflect and are fully compatible with those Standards that are contained in Annex 1 to the Convention; and
- b) Requirements for the approval and certification of aviation training organizations (ATOs) providing training to personnel who are engaged or aspire to engage in civil aviation activities in areas that are relevant to the safety, efficiencies and effectiveness of the civil aviation system.

1.2 The SUCAR also sets out the requirements for medical fitness in line with international requirements as set in Annex 1 to the Convention and the ICAO Manual of Civil Aviation Medicine (Doc 8984) as applicable.

1.3 The SCAA may issue licences and certificates that are not required by Annex 1 to the Convention and the requirements for those type of certificates maybe provided for in related regulatory documents such as SUCARs Part 6, Part 8 and Part 14 for air operators, aircraft maintenance organizations and airports respectively, policy and procedures manuals which do not constitute a licence in the spirit of Annex 1 to the Convention on International Civil Aviation.

1.4 Standards contained in this SUCAR apply to personnel who would like to operate an aircraft registered in the Sudan wherever it may be operating, flight operations officers engaged in providing flight operation control and flight following services, aircraft maintenance engineers engaged in certifying aircraft or parts thereof airworthy or are authorized to issue a maintenance release to an aircraft for flight operation purposes.

### 2. **Exemptions**

2.1 Any interested person may apply to the SCAA for an exemption from a requirement of specific Standards contained in this SUCAR.

2.2 Only the Director General of the SCAA may issue exemptions, and no person may take or cause to be taken any action not in compliance with all Standards contained in this SUCAR unless the SCAA has issued an applicable exemption to the person.

2.3 The Director General may designate the authority to issue an exemption on specific Standards to the Director of the Aviation Safety Department (ASD) and/or the Director of Personnel licensing Directorate.

2.3 Exemptions will only be granted in extraordinary circumstances.

### 3. **Appeals**

3.1 Any person who disagrees with the administrative or legal enforcement actions imposed by the SCAA Licensing Directorate under the provisions of this SUCAR may appeal for a review within seven (7) days from the date of the imposition of the sanction.



- 3.2 A person who would like to appeal an administrative or legal enforcement action imposed by the Director of Personnel Licensing shall address his/her appeal (in writing) Director ASD for resolution.
- 3.3 Should an appeal made to Director ASD is not resolved to the satisfaction of the appellant, he/she may wish to appeal to the Director General of Civil Aviation, in writing, for a final resolution.
- 3.4 The decision made by the Director General is final. However, the SCAA does not intend to curtail the appellant's right to seek resolution in the courts of the land in the case that the appellant remains unsatisfied with the decision made by the Director General of the SCAA.

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## CHAPTER 1 – DEFINITIONS

When the following terms are used in this document (SUCAR Part 1 – *Personnel Licensing*), they have the following meanings:

**Accredited medical conclusion.** The conclusion reached by one or more medical experts acceptable to the Director of Personnel Licensing of the Sudan Civil Aviation Authority (SCAA) for the purposes of the case concerned, in consultation with the Chief Medical Section or other medical experts as necessary.

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

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

**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.

**Aircraft — category.** Classification of aircraft according to specified basic characteristics, e.g. aeroplane, helicopter, glider, free balloon, etc.

**Aircraft certificated for single-pilot operation.** A type of aircraft which, during the certification process, has been determined to be operated safely with a minimum crew of one pilot.

**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 SCAA.

**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.

**Airmanship.** The consistent use of good judgment and well-developed knowledge, skills and attitudes to accomplish flight objectives.

**Airship.** A power-driven lighter-than-air aircraft.

**Approved maintenance organization.** An organization approved by SCAA, in accordance with the requirements of SUCAR Part 8 – Airworthiness of Aircraft, to perform maintenance of aircraft or parts thereof and operating under supervision approved by SCAA.

**Approved training.** Training conducted under special curricula and supervision approved by the SCAA

**Approved training organization.** An organization approved by and operating under the supervision of SCAA in accordance with the requirements of Chapter 9 of this SUCAR to perform approved training.

**Authority (The).** Refers to the Sudan Civil Aviation Authority (SCAA) established under the provisions of Sub-section 3 (1) of the *Sudan Civil Aviation Act, 2018*.

**ATS surveillance service.** A term used to indicate a service provided directly by means of an ATS surveillance system.



**ATS surveillance system.** A generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft.

**Balloon.** A non-power-driven lighter-than-air aircraft. For the purpose of this SUCAR, this definition applies to free balloons.

**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.

**Commercial air transport operation.** An aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire.

**Competency.** A combination of skills, knowledge and attitudes required to perform a task to the prescribed standard.

**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.

**Competency unit.** A discrete function consisting of a number of competency elements.

**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.

**Credit.** Recognition of alternative means or prior qualifications.

**Cross-country.** A flight between a point of departure and a point of arrival following a pre-planned route using standard navigation procedures.

**Director General.** The Director General of the Civil Aviation Authority appointed by virtue of Sub-section 3 (1) of the *Sudan Civil Aviation Act, 2018*.

**Directorate of Personnel Licensing and Training (The PEL Directorate).** The Directorate designated by SCAA as responsible for the licensing of personnel and the approval of aviation training organizations.

**Note.**— *In the provisions of this SUCAR, the PEL 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.*

**Dual instruction time.** Flight time during which a person is receiving flight instruction from a properly authorized pilot on board the aircraft.

**Error.** An action or inaction by an operational person that leads to deviations from organizational or the operational person's intentions or expectations.

**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.

**Flight crewmember.** A licensed crewmember charged with duties essential to the

operation of an aircraft during a flight duty period.

**Flight plan.** Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

**Flight procedures trainer.** See Flight simulation training device.

**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.

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

**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.

**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.

**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.

**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.

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

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

**Instrument flight time.** Time during which a pilot is piloting an aircraft solely by reference to instruments and without external reference points.

**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 PEL Directorate.

**Instrument time.** Instrument flight time or instrument ground time.

**Licensing Authority.** The Sudan Civil Aviation Authority or its Personnel Licensing Directorate, as applicable, designated and empowered to implement the provisions of this document (SUCAR Part 1).

**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.

**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.

**Medical Assessment.** The evidence issued by the State that the holder of a license issued by the SCAA meets specific requirements of medical fitness.

**Medical assessor.** A person (physician), appointed by SCAA, qualified and experienced in the practice of aviation medicine and competent in evaluating and assessing medical conditions of flight safety significance.

**Medical examiner.** A physician with training in aviation medicine and practical knowledge and experience of the aviation environment, who is designated by the SCAA to conduct medical examinations of fitness of applicants for licenses or ratings for which medical requirements are prescribed.

**Night.** The hours between sunset and sunrise.

**Operational personnel.** Personnel involved in aviation operations who are in a position to report safety information to the SCAA 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.

**Organization.** The International Civil Aviation Organization (ICAO) established by the *Convention on International Civil Aviation* (Chicago Convention), December 1944.

**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.

**Pilot (to).** To manipulate the flight controls of an aircraft during flight time.

**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.

**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 SCAA.

**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.

**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.

**Psychoactive substances.** Alcohol, opioids, cannabinoids, sedatives and

hypnotics, cocaine, other psycho-stimulants, hallucinogens, and volatile solvents, whereas coffee and tobacco are excluded.

**Quality system.** Documented organizational procedures and policies; internal audit of those policies and procedures; management review and recommendation for quality improvement.

**Rated air traffic controller.** An air traffic controller holding a license and valid ratings appropriate to the privileges to be exercised.

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

**Rotorcraft.** A power-driven heavier-than-air aircraft supported in flight by the reactions of air on one or more rotors

**Rendering (a license) valid.** The action taken by the SCAA in accepting a license issued by any other Contracting State as the equivalent of licenses issued by the SCAA.

**Safety management system (SMS).** A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures, established by relevant aviation service providers.

**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 – *Airworthiness of Aircraft*.

**Significant.** In the context of the medical provisions contained in Chapter 8 of this SUCAR, **significant** means to a degree or of a nature that is likely to jeopardize flight safety.

**Solo flight time.** Flight time during which a student pilot is the sole occupant of an aircraft.

**State (The).** Unless otherwise mentioned, The State, in this SUCAR means the Republic of Sudan.

**State safety programme (SSP).** An integrated set of regulations and activities aimed at improving safety

**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.

**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.

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## CHAPTER 2 – GENERAL RULES CONCERNING LICENCES

### 2.1 Licensing Authority

2.1.1 Sudan Civil Aviation Authority (SCAA) is the designated and empowered agency of the Republic of Sudan for the following:-

- a) Assessment of an applicant's qualifications to hold a licence, rating, or certificate in accordance to the requirements contained in this SUCAR;
- b) Issuance, renewal and endorsement of licences, ratings and certificates;
- c) Designation and authorization of approved persons;
- d) Approval of aviation training organization and training programmes;
- e) 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 licence or rating; and
- f) Renewal or revalidation of licence, certificate or approvals;
- g) Rendering a licence valid issued by other contracting States; and
- h) Suspension, withdrawal, or revocation of licences or certificates.

2.1.2 Personnel licences and certificates issued by the SCAA fully comply with ICAO standards and recommended practices (SARPs) set in Annex 1 – *Personnel Licensing to the Convention on International Civil Aviation* and with related ICAO documents.

2.1.3 Requirements and procedures for the issuance, renewal, re-issue and re-validation of personnel licences and certificates are as detailed in the requirements contained in this SUCAR and licensing processes and procedures manual established by the SCAA for licensing and certification purposes.

2.1.4 The designated and authorized person to sign a licence or certificate is the Director of the PEL Directorate or a person designated to act on his/her behalf as indicated in the *Personnel Licensing Procedures Manual*.

2.1.5 The SCAA shall suspend, withdraw or revoke a licence, a certificate or rating issued under this SUCAR, if the holder of a licence, a certificate or rating did not comply with regulatory requirements contained in this SUCAR or is in violation of any regulation that governs the issuance of the licence, certificate or rating issued; or the maintenance of its validity as per regulations set in this SUCAR or any other licensing-related provision that may be contained in other SUCARs.

### 2.2 Licences and Certificates Issued

2.2.1 Conforming to International Standards and Recommended Practices (SARPs) contained in Annex 1 – *Personnel Licensing 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*

Student pilot

private pilot – aeroplane, helicopter or powered-lift;

commercial pilot – aeroplane, helicopter or powered-lift;

multi-crew pilot – aeroplane;

airline transport pilot – aeroplane; helicopter

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);
  - air traffic controller;
  - flight operations officer/flight dispatcher;
  - cabin crew;
  - aeronautical station (radio) operator
  - load master
- c) The SCAA may issue the following designations to private persons to act on behalf of the Director General of the SCAA, as specified in this Part:
  - i. Designated Pilot Examiner (Type rating, Instrument rating etc.);
  - ii. Designated Flight Engineer Examiner;
  - iii. Designated Aviation Medical Examiner;
  - iv. Designated type rating instructor;
  - v. Aircraft maintenance engineer examiner; or
  - vi. Other designees as may be determined by the SCAA

### 2.3 Licences Based on Military Qualifications

- 2.3.1 Except for a rated military pilot or former military pilot who has been removed from flying status for lack of proficiency, or because of disciplinary action involving aircraft operations, a rated military pilot or former rated military pilot who meets the requirements of this SUCAR may apply, on the basis of his or her military training, for:
- a) PPL, CPL & ATPL;
  - b) A rating in the category and class of aircraft for which that military pilot is qualified;
  - c) An instrument rating with the appropriate category rating for which that military pilot is qualified; and
  - d) A type rating, if appropriate.
- 2.3.2 an applicant for a *Private Pilot Licence* shall have:
- a) passed 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 licence.
- 2.3.3 an applicant for a *Commercial Pilot Licence* or an *Airline Transport Pilot Licence* shall have:
- a) passed the theoretical knowledge examination which deals with air law;
  - b) successfully completed the skills test; and
  - c) complied with other requirements prescribed in this SUCAR for the issuance of a commercial pilot licence or an airline transport pilot licence, as the case may be.
- 2.3.4 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 licence;
  - b) a copy of the summary of the logbook of the applicant;
  - c) proof that the applicant has passed the theoretical examination, as

- applicable;
- 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.
- 2.3.5 The Director General shall credit the experience gained by an applicant serving in the Sudan Defence Forces, towards the issuance of an appropriate pilot licence and rating.
- 2.3.6 If the applicant has not been on active flight status within the past 12 months of application, pass both a knowledge and skill test.
- 2.3.7 Military aircraft maintenance personnel;**
- 2.3.7.1 Suitably qualified and experienced military technicians or engineers who have sufficient theoretical knowledge of science, aircraft engineering and human performance and competent to inspect, service and maintain aircraft and components and who meet the requirements of this SUCAR may apply for a civilian license.
- The applicants will be required to;
- a) Pass air law
  - b) Practical test
  - c) Submit record of proof that he has maintained aircraft during the last 12 months preceding the application.
- 2.3.8 Procedures for issuance licences based on military qualification are contained in the PEL and Training Procedures Manual.
- 2.4 Licences and Certificates issued to Non-Sudanese Pilots, Flight Engineers and Authorized Examiners**
- Licences 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 the SCAA 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 licence issued by the SCAA.
- 2.5 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 licence issued by the SCAA or by any other ICAO Contracting State and rendered valid by the SCAA, showing compliance with the requirements of this SUCAR and appropriate to the duties to be performed by that person. A person so licenced by the SCAA is required to carry the licence whenever exercising privileges given by the licence.
- 2.6 Validating and converting Licences Issued by Other Contracting States**
- 2.6.1 Validation of Flight crew licenses**
- 2.6.1.1 *General requirements for validation.*
- a) A person who holds a current and valid pilot licence issued by another Contracting State in accordance with ICAO Annex 1, may apply for a validation of such licence for use on aircraft registered in Sudan.

- b) The applicant for the validation certificate shall present to the SCAA the foreign licence and evidence of the experience required by presenting the record (e.g. logbook).
- c) The applicant for the validation certificate shall present to the SCAA evidence that he/she holds either a current medical certificate issued under this SUCAR or a current medical certificate issued by the Contracting State that issued the applicant's licence.

**Note:** *The SCAA may allow the applicant to use his/her foreign medical certificate with the validation certificate provided that the medical certification requirements on which the foreign medical certificate was issued meet the requirements of this SUCAR, relevant to the licence held.*

- d) The applicant for the validation certificate shall present to the SCAA evidence of language proficiency in English as specified in SUCAR or shall demonstrate to the SCAA the language proficiency skills as specified in this SUCAR
- e) *The SCAA will verify the authenticity of the licence, ratings authorizations and the medical certificate with the state of licence issue prior to issuing the validation.*
- f) *The SCAA will only validate ratings or authorizations on the foreign licence together with the validation of a licence*
- g) The SCAA may issue a validation certificate which will be valid for one year, provided the foreign licence, ratings or authorizations and the medical certificate remains valid.

#### 2.6.1.2 Validation certificate with PPL privileges.

In addition to the requirements in item (a) above, the applicant for the validation certificate with PPL privileges shall have a foreign licence with at least PPL privileges.

#### 2.6.1.3 Validation certificate with PPL/IR, CPL, CPL/IR, ATPL or FE/FN privileges.

In addition to the requirements in item (a) above, the applicant for a validation certificate for either a PPL/IR, CPL, CPL/IR, ATPL or FE/FN privileges, shall have the relevant foreign licence and meet the following requirements:

- a) The applicant for the validation certificate shall demonstrate to the satisfaction of the SCAA the knowledge relevant to the licence to be validated of air law;
- b) The applicant for the validation certificate may be required to complete a skill test for the relevant licence and ratings that he or she wants to be validated relevant to the privileges of the licence held;

2.6.2 Validation authorization issued by the SCAA should always be carried with the former licence accepting it as the equivalent of the latter

2.6.3 The validity of the authorization shall not extend beyond the period of validity of the original licence issued by other contracting State.

2.6.4 The authorization issued by the SCAA ceases to be valid if the licence upon which it was issued is revoked or suspended.

2.6.5 Procedures for the validation of foreign licences are contained in the *PEL Operation Manual*.

2.6.7 A Sudanese citizen holding a foreign licence may apply for a Sudanese licence on equivalence basis provided that he presents evidence of knowledge, skill and experience and sits for an examination and test at the



level required for issuing the particular licence.

## 2.6.8 Rendering a license valid pursuant to a formal agreement between other ICAO Contracting States and Sudan CAA

2.6.8.1 Notwithstanding the provisions in 2.6.1 SCAA may automatically render valid other contracting states licenses valid provided that the State shall have;

- a) Adopted common licensing regulations that are compliant with this SUCAR part 1;
- b) Entered into a formal agreement recognizing the automatic validation process;
- c) Established a surveillance system to ensure the continuing implementation of the Personnel licensing regulations
- d) Registered the agreement with ICAO pursuant to Article 83 of the Convention on International Civil Aviation

2.6.8.2 An endorsement shall appear on licenses rendered valid under these processes indicating that the license is automatically validated under the agreement described in 2.6.8.1 and referencing the ICAO registration number of the agreement

2.6.8.3 A pilot license issued by a Contracting State may be rendered valid for private flights

## 2.6.9 Conversion of Flight crew Licences

Conversion of a foreign pilot licence for issuance of a PPL, CPL or ATPL by Sudan. A person who holds a current and valid pilot licence with at least PPL, CPL or ATPL privileges issued by another Contracting State in accordance with ICAO Annex 1, may apply for a conversion and be issued with a PPL, CPL or ATPL for use on aircraft registered in Sudan provided the following requirements are met.

- a) The holder shall:
  - i. Present to the SCAA the knowledge, foreign licence, evidence of experience required by presenting the record (e.g. logbook) and current medical certificate;
  - ii. Present to the SCAA evidence of proficiency in English language as specified in this SUCAR;
  - iii. Obtain the relevant Class of medical certificate issued under this Part;
  - iv. Demonstrate to the satisfaction of the SCAA the knowledge of Air Law; and
  - v. Complete a skill test as applicable.
- b) The SCAA will verify the authenticity of the licence, ratings, authorizations and the medical certificate with the state of licence issue prior to converting the licence.
- c) Ratings listed on a person's foreign pilot licence, may be placed on that person's converted licence .
- d) If the license being applied for is an ATPL, then the flight test must be conducted in an aircraft or Flight simulator that is certificated to be operated with a co-pilot

## 2.6.10 Validation and Conversion of Aircraft Maintenance engineer Licences

### 2.6.10.1 Validation

- a) General requirements for validation.
  - i. A person who holds a current and valid AME licence issued by another

- Contracting State in accordance with ICAO Annex 1, may apply for a validation of such licence for use on aircraft registered in Sudan
- ii. The applicant for the validation certificate shall present to the SCAA the foreign licence and evidence of the experience required by presenting the personal record.
  - iii. The applicant for the validation certificate shall demonstrate to the SCAA evidence of proficiency in English language.
  - iv. The SCAA will verify the authenticity of the licence, ratings authorizations with the state of licence issue prior to issuing the validation.
  - v. The SCAA will only validate ratings or authorizations on the foreign licence together with the validation of a licence
  - vi. The SCAA may issue a validation certificate which will be valid for one year, provided the foreign licence, ratings or authorizations remains valid.
- b) The applicant for the validation certificate shall demonstrate to the satisfaction of the SCAA the knowledge of the following elements relevant to the licence to be validated:
    - i. Air Law;
    - ii. Applicable Airworthiness requirements governing certification and continuing airworthiness; and
    - iii. Approved maintenance organizations and procedures.
  - c) The applicant for the validation certificate may be required to complete a skill test for the relevant licence and ratings that he or she wants to be validated relevant to the privileges of the licence held; and
  - d) Have a minimum of four years AME experience.

#### 2.6.10.2 Conversion

##### 2.6.10.2.1 General requirements for conversion.

A person who holds a current and valid aircraft maintenance engineers (AME) licence issued by an ICAO contracting State in accordance with the Standards contained in ICAO Annex 1, may apply for conversion of such licence for use on aircraft registered in Sudan provided the following requirements are met:

- a) The applicant for the conversion shall present to the SCAA the foreign licence and evidence of the experience required by presenting the personal record.
- b) Demonstrate to the satisfaction of the SCAA the knowledge of the following elements relevant to the licence to be converted:
  - i. Airworthiness requirements governing certification Air Law;
  - ii. Applicable and continuing airworthiness;
  - iii. Approved maintenance organisations and procedures; and
  - iv. Human Performance;
- c) The applicant may be required to complete a skill test for the relevant licence and ratings that he or she wants to be converted relevant to the privileges of the licence held; and
- d) Have a minimum of four years AME experience.
- e) The SCAA will verify the authenticity of the licence, ratings authorizations with the state of licence issue prior to issuing the converted licence.
- f) The SCAA will only convert ratings or authorizations on the foreign licence together with the conversion of a licence.
- g) Conversion of AME licences that have been validated in accordance with the holder of a current and valid AME licence issued by an ICAO contracting

State in accordance with ICAO Annex 1 who has a validation certificate in accordance with 2.6.10 and can show evidence of 12 months performing maintenance on aircraft registered in Sudan may convert his/her AME licence with no further formality.

## 2.7 Privileges of the Holder of a Licence

- 2.7.1 A person issued a licence or issued a validation authorization by the SCAA is not permitted to exercise privileges other than those granted by the licence or the validation authorization.
- 2.7.2 A person holding a licence issued or validated by the SCAA may be prosecuted and penalized per the law in the event that he/she exercises privileges that have not been granted by the licence or the validation authorization.

## 2.8 Authority to Act as a Holder of a Licence or Certificate (Other than a Flight Crewmember)

A person shall not exercise the privileges of a licence, certificate or rating issued by the SCAA, unless it is valid and is physically carried by the licensee showing compliance with the requirements of SCAA licensing rules, appropriate to the duties to be performed by that person.

## 2.9 Medical Fitness

- 2.9.1 Class 1, Class 2, or Class 3 Medical Assessments, as applicable, are issued to the appropriate applicant for a licence in the Sudan.
- 2.9.2 An applicant for a Sudanese licence shall, when applicable, hold a Medical Assessment issued by the SCAA or its representatives in accordance with the provisions of Chapter 8 of this SUCAR. No licence holder, required to have a Medical Licence as an integral part of his/her licence can exercise the privileges of the licence unless he holds a valid Medical Licence to be carried with the actual licence.
- 2.9.3 As part of its State safety programme the SCAA applies basic safety management principles to the medical assessment process of Sudanese licence holders, that as a minimum includes:
- routine analysis of in-flight incapacitation events and medical findings during medical assessments to identify areas of increased medical risk; and
  - continuous re-evaluation of the medical assessment process to concentrate on identified areas of increased medical risk.
- 2.9.4 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 2.10.7 of this SUCAR.
- 2.9.5 The period of validity of a Medical Assessment may be extended, at the discretion of the SCAA, for a maximum of 45 days.
- 2.9.6 Except as provided in paragraph 2.9.10, flight crewmembers, and air traffic controllers shall not exercise the privileges of their licence unless they hold a current Medical Assessment appropriate to the licence, issued by the SCAA in accordance with the provisions of Chapter 8 of this SUCAR.
- 2.9.7 The SCAA shall designate medical examiners, qualified and licenced in the practice of medicine and who shall have received training in aviation medicine prior to their designation to conduct medical examinations of fitness of

- applicants for the issue or renewal of licences or ratings.
- 2.9.8 Designated medical examiners (DMEs) shall ensure that they have received refresher training within three years and shall demonstrate adequate competency in aviation medicine to the Medical Assessor of the SCAA.
- 2.9.9 Medical examiners shall be provided with a practical knowledge and experience of the conditions in which the holders of licences and ratings carry out their duties. This could include flight experience, simulator experience, on-site observation or any other hands-on experience as determined by the SCAA.
- 2.9.10 The continuing competence of designated medical examiners shall be evaluated periodically by the Medical Assessor.
- 2.9.11 Applicants for licences 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.
- 2.9.12 Any false declaration to a designated medical examiner made by an applicant for a licence or rating shall be reported to the SCAA for such action as may be considered appropriate.
- 2.9.13 Having completed the medical examination of the applicant in accordance with Chapter 8 of this SUCAR and guidance contained in the ICAO Manual of Civil Aviation Medicine (Doc 8984), the designated medical examiner shall coordinate the results of the examination and submit a signed report to the SCAA, in accordance with established requirements, detailing the results of the examination and evaluating the findings with regard to the medical fitness of the applicant.
- 2.9.14 If the medical report is submitted to the SCAA in electronic format, adequate identification of the designated examiner shall be established through a previous arrangement made between the designated examiner and the SCAA.
- 2.9.15 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.
- 2.9.16 The Medical Assessor of the SCAA shall evaluate medical examination reports submitted by the designated medical examiners.
- 2.9.17 Designated medical examiners are required to submit sufficient information to the SCAA 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).
- 2.9.18 If the medical Standards prescribed in Chapter 8 of this SUCAR for a particular licence are not met, a medical licence shall not be issued or renewed unless the following conditions are fulfilled:
- accredited medical conclusion indicates that in special circumstances the applicant's failure to meet any requirement, whether numerical or otherwise, is such that exercise of the privileges of the licence applied for

- is not likely to jeopardize flight safety;
  - b) relevant ability, skill and experience of the applicant and operational conditions have been given due consideration; and
  - c) the licence is endorsed with any special limitation or limitations when the safe performance of the licence holder's duties is dependent on compliance with such limitation or limitations.
- 2.9.19 Designated medical examiners, the medical assessor and any other staff of the SCAA or the medical examiner who has the possibility of accessing medical records shall respect medical confidentiality at all times.
- 2.9.20 All medical reports and records shall be securely held with accessibility restricted to authorized personnel.
- 2.9.21 When justified by operational considerations, the medical assessor of the SCAA shall determine to what extent pertinent medical information may be presented to relevant officials of the SCAA or the State.

## 2.10 Validity of Licences

- 2.10.1 A holder of a licence issued by the SCAA shall not exercise the privileges granted by the licence, or by related ratings, unless the holder maintains competency and meets the requirements for recent experience established by the SCAA. The SCAA shall ensure that other contracting States are satisfied to the validity of licences issued by its Licensing Directorate.
- 2.10.2 Maintenance of competency and recent experience for pilot licences 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.
- 2.10.3 Recent experience and Proficiency requirements Non-Commercial Air Transport Operations
- a) In order to maintain recency and proficiency, all pilots shall meet the applicable requirements in b) to f) below.
  - b) No person shall operate as PIC of an aircraft unless, that pilot has within 12 months, accomplished a flight review that includes:
    - i. A review of the current general operating and flight rules contained in SUCAR Part 6;
    - ii. A review of those manoeuvres and procedures that, at the discretion of the person giving the review are necessary for the pilot to demonstrate the safe exercise of the privileges of the pilot licence;
    - iii. A proficiency check in the appropriate aircraft for the licence, ratings or authorizations held, unless within the past 12 months, the pilot has satisfactorily completed one of the following:
      - 1. A pilot proficiency check or practical test conducted by a designated examiner, for a pilot license, rating, or operating privilege.
      - 2. A practical test conducted by a designated examiner for the issuance of a flight instructor rating, an additional rating on a flight instructor rating, renewal of a flight instructor rating, or reinstatement of a flight instructor rating; and



3. A logbook endorsement from an authorized instructor who gave the review, certifying that the person has satisfactorily completed the review required in i) and ii) above and completed the applicable proficiency check.
    - b) Aircraft type certificated for more than one pilot:
      - i. No person may act as PIC of an aircraft type certified for more than one pilot or a turbojet aircraft unless, since the beginning of the past 12 calendar months, he or she has passed a proficiency check in an aircraft, or in a flight simulation training device approved for the purpose, with a designated examiner.
      - ii. No person may act as co-pilot of an aircraft type certified for more than one pilot unless, since the beginning of the past 12 calendar-months, he or she has logged 3 takeoff and landings as the sole manipulator of the controls in the aircraft of the same type, or in a flight simulation training device approved for the purpose, with each takeoff and landing to full stop, and have satisfactorily completed ground training appropriate to the aircraft type.
    - c) Aircraft type certificated for single pilot and requiring a type rating on the pilot license:
      - i. No person may act as PIC of an aircraft type certified for a single pilot unless, since the beginning of the 12 calendar-months, he or she has passed a proficiency check with a designated examiner in the category, class and type of aircraft to be operated, or in a flight simulation training device approved for the purpose.
    - d) Recency for Carriage of Passengers. No person may act as PIC or co-pilot of an aircraft carrying passengers unless, within the preceding 90 days that pilot has:
      - i. Made 3 takeoffs and landings as the sole manipulator of the flight controls in an aircraft of the same category and class and if a type rating is required, of the same type or in a flight simulation training device approved for the purpose.
      - ii. For a tail wheel aeroplane, made the 3 takeoffs and landings in a tail wheel aeroplane with each takeoff and landing to a full stop.
      - iii. For night operations, made the 3 takeoffs and landings required by paragraph (a)(1) at night with each takeoff and landing to a full stop.
    - e) Instrument flight rules (IFR) Operations. A pilot shall not operate as PIC of an aircraft under IFR or in weather conditions less than the minimums prescribed for visual flight rules (VFR) flight unless within the preceding twelve (12) months:
      - i. The pilot had an instrument proficiency check on the maneuvers in the IR Skill Test and Proficiency Check.
- 2.10.4 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 SUCAR Part 6 – *Operation of Aircraft*.
- 2.10.5 Record of maintenance of competency shall be maintained by the Operator as well as be recorded in the flight crewmember's personal logbook or licence.
- 2.10.6 Demonstration of continuing competency for crewmembers engaged in commercial air transport may be conducted in SCAA approved flight simulation training devices.

- 2.10.7 Except as provided in 2.10.8), 2.10.9), 2.10.10, 2.10.11), and 2.10.12), a medical assessment issued in accordance with this section (2.10) shall be valid from the date of the medical examination for a period not greater than the period indicated in Table 1-1, next page.
- 2.10.8 The period of validity of a medical assessment may be reduced when clinically indicated.
- 2.10.9 When the holders of an airline transport pilot licences — aeroplane, helicopter and powered-lift, and commercial pilot licences — 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 2.10.7 shall be reduced to six months.

**TABLE 1-1**

No.	Type of Licence Held	Period of Validity
1.	Private pilot licence — aeroplane, air- ship, helicopter and powered-lift	60 months
2.	Commercial pilot licence — aeroplane, airship, helicopter and powered-lift	12 Months
3.	Multi-crew licence — Aeroplane	12 Months
4.	Airline transport pilot licence — aeroplane, helicopter and powered lift	12 Months
5.	Glider pilot licence	60 Months
6.	Flight-navigator licence	12 Months
7.	Flight-engineer licence	12 months
8.	Air traffic controller licence	36 Months
9.	Student pilot	60 months
11	Cabin crew licence	24 months
12	Aeronautical station operator	24 Months

- 2.10.10 When the holders of multi-crew pilot licences — aeroplane, who are engaged in commercial air transport operations, have passed their 60<sup>th</sup> birthday, the period of validity specified in 2.10.7 shall be reduced to six months.
- 2.10.11 When the holders of private pilot licences — aeroplane, airship, helicopter and powered-lift, free balloon pilot licences, glider pilot licences , aeronautical station operator air traffic controller licences have passed their 40th birthday, the period of validity specified in 2.10.7 shall be reduced to 24 months.
- 2.10.12 When the holders of private pilot licences — aeroplane, airship, helicopter and powered-lift, free balloon pilot licences, glider pilot licences, and air traffic controller licences have passed their 50th birth- day, the period of validity specified in 2.10.7 should be further reduced to 12 months.
- 2.10.13 When the holders of airline transport pilot licences — aeroplane, helicopter and powered-lift, commercial pilot licences — aeroplane, airship, helicopter and powered lift, and multi-crew pilot licences — aeroplane, who are engaged in commercial air transport operations, have passed their 60th birthday, the period of validity specified in 2.10.7 shall be reduced to six months.

## 2.11 Circumstances in which a Medical Examination may be deferred

2.11.1 As an exception, the SCAA may defer the prescribed re-examination of a licence holder operating in an area distant from designated medical examination facilities.

2.11.2 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 crew member 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 SCAA;
- 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 SCAA 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 SCAA.

## 2.12 Decrease in Medical Fitness

2.12.1 Holders of licences provided for in this SUCAR shall not exercise the privileges of their licences 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.

2.12.2 Guidelines on medical conditions that may be relevant to flight safety and require the licence 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)).

2.12.3 Sudanese licence holders or holders of Sudanese validation authorization shall not exercise the privileges of their licences 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.

2.12.4 Sudanese licence holders must inform the SCAA 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.

## 2.13 Use of Psychoactive Substances

2.13.1 Holders of licences provided for in this SUCAR shall not exercise the privileges of their licences and related ratings while under the influence of any psychoactive substance which might render them unable to safely and properly exercise these privileges.

2.13.2 Holders of licences provided for in this SUCAR shall not engage in any problematic use of substances.

2.13.3 The SCAA and/or the relevant operator shall identify all licence 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).

#### 2.14 Approved Training and Approved Training Organization

**Note.** *The qualifications required for the issue of personnel licences 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 licences and ratings prescribed in these Regulations, in respect of an applicant who has satisfactorily completed a course of approved training.*

2.14.1 The SCAA shall approve training and training organizations upon the applicant demonstrating compliance with requirements contained in Chapter 9 of this SUCAR.

2.14.2 Training approved by the SCAA shall provide a level of competency at least equal to that provided by the minimum experience requirements for personnel not receiving such approved training.

#### 2.15 Language Proficiency

2.15.1 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 language to the level specified in the language proficiency requirements in Appendix 5, to this SUCAR.

2.15.2 Flight engineers, and glider and free balloon pilots should have the ability to speak and understand the language used for radiotelephony communications.

2.15.3 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 2.15 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.*



## 2.16 Duration of Pilot and Flight Engineer Licence

A Flight crew licence issued under this Part has a ten-year expiration limit.

## 2.17 Surrender, Suspension or Revocation of Licence, Certificate or Authorization

2.17.1 Any flight crew licence, authorization or certificate issued under this SUCAR shall cease to be effective if it is surrendered, suspended or revoked;

2.17.2 The holder of any licence or certificate, issued under this SUCAR that are suspended or revoked shall return such Licence or certificate to the SCAA within 7 days of notification.

2.17.3 Unless the order of revocation provides otherwise, a person whose licence/certificate is revoked, shall not apply for any licence, certificate or authorization before the elapse of one year from the date of revocation.

2.17.4 The SCAA shall suspend or revoke any licence or certificate where the holder of the licence or certificate may harm public interest or jeopardize the national security of Sudan.

2.17.5 The SCAA shall suspend or revoke any licence or certificate if the holder of the licence or certificate is involved in any illegal act or violated regulations of Sudan or any other ICAO contracting State while exercising the privileges of his/her licence or certificate.

2.17.6 The SCAA have the right to suspend, revoke or amend any licence, rating or certificate, when at any time the SCAA discovers an error in the process of the issuance of the licence, rating or certificate.

## 2.18 Replacement of Lost or Destroyed Licence/Certificate/Authorization

An application for the replacement of a lost or destroyed licence or certificate issued under this SUCAR shall be made in writing to the SCAA in accordance with the established requirements in the PEL and Training Procedures Manual

**Note.** For detailed procedures for the issuance of licences or certificates refer to the SCAA Licensing and Certification Requirements & Procedures Manual.

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## CHAPTER 3 – LICENCES AND RATINGS FOR PILOTS

### 3.1 General Rules Concerning Pilot Licences and Ratings

#### 3.1.1 General licensing specifications

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 licence issued in accordance with the provisions of this Chapter:

- a) aeroplane
- b) free balloon
- c) glider
- d) helicopter, and
- e) powered-lift.

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

3.1.1.2.1 When the holder of a pilot licence seeks a licence for an additional category of aircraft, the SCAA shall either:

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

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

3.1.3.1 An applicant for any pilot licence or rating shall demonstrate, in a manner determined by the SCAA, such requirements for knowledge and skill as are specified for that licence or rating.

#### 3.1.2 Category ratings

3.1.2.1 Category ratings established in Sudan are for categories of aircraft listed in 3.1.1.1.

3.1.2.2 Category ratings shall be included in the title of the licence itself.

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

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

#### 3.1.3 Class and type ratings

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; and
- d) multi-engine, sea.

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

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.

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 3.1.3.1.1; and
- c) any aircraft whenever considered necessary by the SCAA

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

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

#### 3.1.4 Circumstances in which class and type ratings are required

3.1.4.1 Sudanese pilot licence 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 3.1.3.1; or
- b) a type rating when required in accordance with the provisions of 3.1.3.2.

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.

3.1.4.2 For the purpose of training, testing, or specific special purpose non-revenue, non-passenger carrying flights, the SCAA shall provide the licence holder special authorization in writing in place of issuing the class or type rating in accordance with 3.1.4.1. This authorization shall be limited in validity to the time needed to complete the specific flight.

#### 3.1.5 Requirements for the issue of class and type ratings

##### 3.1.5.1 Class rating

The applicant shall have demonstrated a degree of skill appropriate to the licence in an aircraft of the class for which the rating is sought.

3.1.5.2 *Type rating as required by 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:
  - i. normal flight procedures and manoeuvres during all phases of flight;
  - ii. abnormal and emergency procedures and manoeuvres in the event of failures and malfunctions of equipment, such as powerplant, systems and airframe;
  - iii. where applicable, Instrument procedures, including instrument

approach, missed approach and landing procedures under normal, abnormal and emergency conditions, including simulated engine failure;

- iv. procedures for crew incapacitation and crew coordination including allocation of pilot tasks; crew cooperation and use of checklists;

**Note:** Attention is called to 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 licence level, an extent of knowledge determined by the SCAA on the basis of the requirements specified in 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.

#### 3.1.5.3 Type rating as required by 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.

##### 3.1.5.3.1 If applying for an aircraft type rating for an aircraft exceeding 5700kg MCTOM or for a multi-engine helicopter;

- a) have completed an approved course of technical training on the aircraft for which the aircraft type rating is required; and
- b) have passed an approved written examination in the normal, abnormal and emergency procedures for the operation of the aircraft systems and in the aircraft's performance, weight and balance

#### 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 licence or rating shall be approved by the SCAA, which shall ensure that the flight simulation training device used is appropriate to the task.

#### 3.1.7 Circumstances in which an instrument rating is required

A Sudanese pilot licence 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 SCAA. Proper authorization shall comprise an instrument rating appropriate to the aircraft category.

**Note:** The instrument rating is included in the airline transport pilot licence — aeroplane or powered-lift category, multi-crew pilot licence, and commercial pilot licence — air-ship category. The provisions of 3.1.7 do not preclude the issue of a licence having the instrument rating as an integral part

thereof.

### 3.1.8 **Circumstances in which authorization to conduct instruction is required**

3.1.8.1 No Sudanese licence holder, regardless of his/her experience is permitted to carry out flight instruction required for the issue of a pilot licence or rating, unless he/she has received proper authorization from the SCAA. Proper authorization shall comprise:

- a) a flight instructor rating on the holder's licence; or
- b) the authority to act as an agent of an approved organization authorized by the SCAA to carry out flight instruction; or
- c) a specific authorization granted by the SCAA.

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

### 3.1.9 **Crediting of flight time**

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

3.1.9.2 The holder of a pilot licence, 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 licence. Flight time may be credited in full towards the total flight time required if the aircraft is equipped to be operated with a co-pilot and the is operated in a multi-crew operation.

3.1.9.3 The holder of a pilot licence, 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 licence.

3.1.9.4 The holder of a pilot licence, 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 licence.

### 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**

3.1.10.1 Sudanese licence 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 commercial air transport operations.

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

**Note:** Attention is drawn to 2.10.13 on the validity period of Medical Assessments for pilots over the age of 60 who are engaged in commercial air transport



operations.

### 3.2 Student pilot

3.2.1 An applicant for a student pilot licence shall have sufficient ability in speaking and understanding in the English language to be able to adequately carry out all responsibilities of the pilot in command of an aircraft, shall be not less than 17 years of age, and holding successful high school certificate or equivalent.

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

3.2.2.1 *Experience requirement before undertaking solo flight:*

- a) the person has received dual instruction within the last 5 hours of flight experience unless otherwise authorized by the holder of a current senior flight instructor rating;
- b) the person has had piloting experience in appropriate aircraft within the immediately preceding 30 days; and
- c) if the solo flight is a cross-country flight, the person has completed all theory examinations for a private pilot licence.

3.2.2.2 *Knowledge requirement before undertaking solo flight:*

- a) preparation for flight;
- b) starting and run-up procedures;
- c) climbing and descending;
- d) level, climbing and descending turns;
- e) take-off, circuit and landing in that type of aircraft;
- f) taxiing;
- g) straight and level flight;
- h) practical flight radiotelephony;
- i) go-around procedures;
- j) in the case of an aeroplane:
  - i. stall recognition and recovery in that aeroplane type;
  - ii. emergency procedures in the event of engine failure during and after take-off;
  - iii. In the case of a helicopter:
  - iv. hovering upwind, downwind and crosswind; and
  - v. emergency procedures in that type of helicopter

3.2.2.3 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.

3.2.2.4 A student pilot shall ask for and be given a copy of the agreement before he plans to fly solo in an aircraft on international flight to be carried during undertaking such a flight.

### 3.2.3 Medical fitness

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

### 3.3 Private pilot licence

### 3.3.1 General requirements for the issue of the licence appropriate to the aeroplane, helicopter and powered-lift categories.

3.3.1.1 The applicant shall meet language proficiency requirements contained in Chapter 2, paragraph 2.15, as applicable and holding successful high school certificate or equivalent

#### 3.3.1.2 Age

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

#### 3.3.1.3 Knowledge

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

##### a) Air law

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

##### b) Aircraft general knowledge for aeroplanes, helicopters and powered-lifts:

- i. Principles of operation and functioning of powerplants, systems;
- ii. Operating limitations of the relevant category of aircraft and powerplants; relevant operational information from the flight manual and instruments or other appropriate document;
- iii. For helicopters and powered-lifts, transmission (power trains) where applicable;

##### c) Flight performance, planning and loading

- i. Effects of loading and mass distribution on flight characteristics; mass and balance calculations;
- ii. Use and practical application of takeoff, landing and other performance data;
- iii. 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;

##### d) Human performance

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).

##### e) Meteorology

Application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry; hazardous weather conditions;

##### f) Navigation

Practical aspects of air navigation and dead-reckoning techniques; use of aeronautical charts;

##### g) Operational procedures

- i. 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).*

- ii. altimeter setting procedures;
  - iii. use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
  - iv. appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards;
  - v. 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 flights in VMC.
- h) *Principles of flight*  
Principles of flight;
- i) *Radiotelephony*  
Communication procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure.

#### 3.3.1.4 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 3.3.3.2 or 3.3.4.2.1 or 3.3.5.2 or with a degree of competency appropriate to the privileges granted to the holder of a private pilot 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) 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.

#### 3.3.1.5 Medical fitness

The applicant shall hold a current Class 2 Medical Assessment.

**Note:** *Attention is called to 3.7.1.3 on the medical fitness requirements for private pilot licence holders seeking an instrument rating.*

### 3.3.2 Privileges of the holder of the licence and the conditions to be observed in exercising such privileges

3.3.2.1 Subject to compliance with the requirements specified in 2.10, 2.12, 2.13,

2.15 and 3.1, the privileges of the holder of a private pilot licence 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.

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

### 3.3.3 Specific requirements for the issue of the aeroplane category rating

#### 3.3.3.1 Experience

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 SCAA 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.

3.3.3.1.1.1 When the applicant has flight time as a pilot of aircraft in other categories, the SCAA shall reduce the experience requirements of 3.3.3.1.1 with 25 percent (25%) provided that the total experience will not be less than the requirements of this SUCAR

3.3.3.1.1.2 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 totaling not less than 270 km (150 NM) in the course of which full-stop landings at two different aerodromes shall be made.

#### 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 3.3.3.2, i) and the night flying dual instruction in 3.3.2.2 do not entitle the holder of a private pilot licence to pilot aeroplanes under IFR.*

### 3.3.4 Specific requirements for the issue of the helicopter category rating

#### 3.3.4.1 Experience

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 SCAA 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.

3.3.4.1.2 When the applicant has flight time as a pilot of aircraft in other categories, the SCAA shall reduce the experience requirements of 3.3.4.1.1 with 25 percent (25%) provided that the total experience will not be less than the requirements of this SUCAR

3.3.4.1.3 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 totaling not less than 180 km (100 NM) in the course of which landings at two different points shall be made.

#### 3.3.4.2 Flight instruction

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).*

- a) pre-flight operations, including mass and balance determination, helicopter inspection and servicing;
- b) aerodrome and traffic pattern operations, collision avoidance precautions and procedures;
- c) control of the helicopter by external visual reference;

- d) recovery at the incipient stage from settling with power; recovery techniques from low-rotor rpm within the normal range of engine rpm;
- e) ground maneuvering and run-ups; hovering; takeoffs 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) cross-country flying using visual reference, dead reckoning and, where available, radio navigation aids, including a flight of at least one hour;
- h) emergency operations, including simulated helicopter equipment malfunctions;
- i) autorotative approach;
- j) operations to, from and transiting controlled aerodromes, compliance with air traffic services procedures; and
- k) communication procedures and phraseology.

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 3.3.4.2.2 and the night flying dual instruction in 3.3.2.2 do not entitle the holder of a private pilot licence to pilot helicopters under IFR.*

### 3.3.5 Specific requirements for the issue of the powered-lift category rating

#### 3.3.5.1 Experience

3.3.5.1.1 An applicant shall complete not less than 40 hours of flight time as a pilot of powered-lifts. The SCAA may consider experience as a pilot under instruction in a flight simulation-training device as part of the total flight time of 40 hours. Credit for such experience shall be limited to a maximum of 5 hours.

3.3.5.1.2 When the applicant has flight time as a pilot of aircraft in other categories, the SCAA may reduce the experience requirements of 3.3.5.1.1 with 25 percent (25%) provided that the total experience will not be less than the requirements of this SUCAR.

3.3.5.1.3 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.

#### 3.3.5.2 Flight instruction

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, Chapter2, 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 maneuvering 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 3.3.5.2.1 g) and the night flying dual instruction specified in 3.3.2.2 do not entitle the holder of a private pilot licence to pilot powered-lifts under IFR.*

### 3.4 Commercial pilot licence

#### 3.4.1 General requirements for the issue of the licence appropriate to the aeroplane, helicopter and powered-lift categories

3.4.1.1 The applicant shall meet language proficiency requirements contained in Chapter 2, paragraph 2.15, as applicable. and holding successful high school certificate or equivalent

##### 3.4.1.2 Age

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

##### 3.4.1.3 Knowledge

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

###### a) Air law

Rules and regulations relevant to the holder of a commercial pilot licence; rules of the air; appropriate air traffic services practices and procedures;



- b) *Aircraft general knowledge for aeroplanes, helicopters and powered-lifts*
  - i. principles of operation and functioning of powerplants, systems and instruments;
  - ii. operating limitations of the relevant category of aircraft and powerplants; relevant operational information from the flight manual or other appropriate document;
  - iii. use and serviceability checks of equipment and systems of appropriate aircraft;
  - iv. maintenance procedures for airframes, systems and powerplants of appropriate aircraft;
  - v. for helicopters and powered-lifts, transmission (power trains) where applicable;
  - vi. for airships, physical properties and practical application of gases;
- c) *Flight performance, planning and loading*
  - i. effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;
  - ii. use and practical application of takeoff, landing and other performance data;
  - iii. 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;
  - iv. in the case of airships, helicopters and powered-lifts, effects of external loading on handling;
- d) *Human performance*  
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).*

- e) *Meteorology*
  - i. interpretation and application of aeronautical meteorological reports, charts and forecasts; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; altimetry;
  - ii. 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;
  - iii. causes, recognition and effects of icing; frontal zone penetration procedures; hazardous weather avoidance;
- f) *Navigation*
  - a) 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;
  - b) 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;
- g) *Operational procedures*
  - i. 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).*

- ii. use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
- iii. altimeter setting procedures;
- iv. appropriate precautionary and emergency procedures;
- v. operational procedures for carriage of freight; potential hazards associated with dangerous goods;
- vi. requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aircraft;
- vii. 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;
- viii. *Principles of flight*
- ix. principles of flight;
- x. *Radiotelephony*
- xi. Communication procedures and phraseology as applied to VFR operations; action to be taken in case of communication failure.

#### 3.4.1.4 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 3.4.3.2 or 3.4.4.2 or 3.4.5.2 or with a degree of competency appropriate to the privileges granted to the holder of a commercial pilot 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) 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.

#### 3.4.1.5 *Medical fitness*

The applicant shall hold a current Class 1 Medical Assessment.

### 3.4.2 **Privileges of the holder of the licence and the conditions to be observed**

3.4.2.1 Subject to compliance with the requirements specified in 12.10, 2.12, 2.13, 2.15 and 3.1, the privileges of the holder of a commercial pilot licence shall be:

- a) to exercise all the privileges of the holder of a private pilot licence 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.

3.4.2.2 Before exercising the privileges at night, the licence 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 licence are curtailed by 3.1.10 for licence holders when they attain their 60th and 65th birthdays.*

### 3.4.3 **Specific requirements for the issue of the aeroplane category rating**

#### 3.4.3.1 *Experience*

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 SCAA 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.

3.4.3.1.1.1 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 totaling 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 licence are to be exercised at night, 5 hours of night flight time including 5 takeoffs and 5 landings as pilot-in-command.

3.4.3.1.2 When the applicant has flight time as a pilot of aircraft in other categories, the SCAA shall reduce the experience requirements of 3.4.3.1.1 with 25 percent (25%) provided that the total experience will not be less than the requirements of this SUCAR.

#### 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 3.4.3.1.1.1 c) and 3.4.3.2 j) and the night flying experience and dual instruction specified in 3.4.3.1.1.1 d) and 3.4.2.2 do not entitle the holder of a commercial pilot licence to pilot aeroplanes under IFR.*

### 3.4.4 Specific requirements for the issue of the helicopter category rating

#### 3.4.4.1 Experience

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 SCAA 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.

3.4.4.1.2 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 licence are to be exercised at night, 5 hours of night flight time including 5 takeoffs and 5 landing patterns as pilot-in-command.

3.4.4.1.3 When the applicant has flight time as a pilot of aircraft in other categories, the SCAA shall reduce the experience requirements of 3.4.4.1.1 with 25 percent (25%) provided that the total experience will not be less than the requirements of this SUCAR.

#### 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 maneuvering 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 3.4.4.1.1.1 c) and 3.4.4.2i) and the night flying experience and dual instruction specified in 3.4.4.1.1.1 d) and*

3.4.2.2 do not entitle the holder of a commercial pilot licence to pilot helicopters under IFR.

### 3.4.5 Specific requirements for the issue of the powered-lift category rating

#### 3.4.5.1 Experience

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 SCAA 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.

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 totaling 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 licence are to be exercised at night, 5 hours of night flight time including 5 takeoffs and landings as pilot-in- command.

3.4.5.1.3 When the applicant has flight time as a pilot of aircraft in other categories, the SCAA shall reduce the experience requirements of 3.4.5.1.1 with 25 percent (25%) provided that the total experience will not be less than the requirements of this SUCAR.

#### 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 licence:

- 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) 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 maneuvering 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 3.4.5.1.2 c) and 3.4.5.2 i) and the night flying experience and dual instruction specified in 3.4.5.1.2 d) and 3.4.2.2 do not entitle the holder of a commercial pilot licence to pilot powered-lifts under IFR.*

### 3.5 Multi-crew pilot licence appropriate to the aeroplane category

#### 3.5.1 General requirements for the issue of the licence

3.5.1.1 The applicant shall meet language proficiency requirements contained in Chapter 2, paragraph 2.15, as applicable, and holding successful high school certificate or equivalent

#### 3.5.1.2 Age

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

#### 3.5.1.3 Knowledge

The applicant shall have met the requirements specified in 3.6.1.3 for the airline transport pilot licence appropriate to the aeroplane category in an approved training course.

#### 3.5.1.4 Skill

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 aeroplanes 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 aeroplane 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.
  - f) Progress in acquiring the skills specified in 3.5.3.1 shall be continuously assessed.

#### 3.5.1.5 *Medical fitness*

The applicant shall hold a current Class 1 medical assessment.

### 3.5.2 ***Privileges of the holder of the licence and the conditions to be observed***

3.5.2.1 Subject to compliance with the requirements specified in 2.10, 2.12, 2.13, 2.15 and 3.1, the privileges of the holder of a multi-crew pilot licence shall be:

- a) to exercise all the privileges of the holder of a private pilot licence in the aeroplane category provided the requirements of paragraph 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.

3.5.2.2 Before exercising the privileges of the instrument rating in a single-pilot operation in aeroplanes, the licence 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 3.7.1.2 appropriate to the aeroplane category.

3.5.2.3 Before exercising the privileges of a commercial pilot licence in a single-pilot operation in aeroplanes, the licence 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 totaling 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 licence specified in 3.4.1.2, 3.4.1.3, 3.4.3.1.1 (with the exception of 3.4.3.1.1.1 a)) and 3.4.3.2 appropriate to the aeroplane category.

3.5.2.4 Single-pilot operation privileges to the holder of a multi-crew pilot licence shall be documented as an endorsement of the multi-crew pilot licence or through the issuance of a commercial pilot licence in the aeroplane category.

***Note:*** *Certain privileges of the licence are curtailed by 3.1.10 for licence holders when they attain their 65th birthday.*

### 3.5.3 **Experience**

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.

3.5.3.2 Flight experience in actual flight shall include at least the experience requirements at 3.3.3.1, upset recovery training, night flying and flight by



reference solely to instruments.

3.5.3.3 In addition to meeting the provisions of 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 SCAA in accordance with Appendix 4, the experience necessary to achieve the advanced level of competency defined in Appendix 4.

### 3.5.4 Flight instruction

3.5.4.1 The applicant shall complete a course of approved training covering the experience requirements specified in 3.5.3.

3.5.4.2 The applicant shall receive dual flight instruction in all the competency units specified in Appendix 4, to the level required for the issue of the multi-crew pilot licence, to include the competency units required to pilot under instrument flight rules.

### 3.6 Airline transport pilot licence

#### 3.6.1 **General requirements for the issue of the licence appropriate to the aeroplane, helicopter and powered-lift categories**

3.6.1.1 The applicant shall meet language proficiency requirements contained in Chapter 2, paragraph 2.15 as applicable, and holding successful high school certificate or equivalent

#### 3.6.1.2 Age

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

#### 3.6.1.3 Knowledge

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

##### a) *Air law*

Rules and regulations relevant to the holder of an airline transport pilot licence; rules of the air; appropriate air traffic services practices and procedures;

##### b) *Aircraft general knowledge for aeroplanes, helicopters and powered-lifts*

- i. general characteristics and limitations of electrical, hydraulic, pressurization and other aircraft systems; flight control systems, including autopilot and stability augmentation;
- ii. 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;
- iii. 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;
- iv. use and serviceability checks of equipment and systems of appropriate aircraft;
- v. 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;
- vi. maintenance procedures for airframes, systems and powerplants of appropriate aircraft;
- vii. for helicopters and powered-lifts, transmission (power trains) where applicable;
- c) *Flight performance, planning and loading*
  - i. effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;
  - ii. use and practical application of takeoff, landing and other performance data, including procedures for cruise control;
  - iii. 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;
  - iv. in the case of helicopters and powered-lifts, effects of external loading on handling;
- d) *Human performance*  
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).*

- e) *Meteorology*
  - i. 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;
  - ii. 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;
  - iii. causes, recognition and effects of icing; frontal zone penetration procedures; hazardous weather avoidance;
  - iv. in the case of aeroplanes and powered-lifts, practical high-altitude meteorology, including interpretation and use of weather reports, charts and forecasts; jetstreams;
- f) *Navigation*
  - i. air navigation, including the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for long-range flights;
  - ii. use, limitation and serviceability of avionics and instruments necessary for the control and navigation of aircraft;
  - iii. use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids;
  - iv. principles and characteristics of self-contained and external -referenced navigation systems; operation of airborne equipment;
- g) *Operational procedures*

- i. 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).

- ii. interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
  - iii. precautionary and emergency procedures; safety practices;
  - iv. operational procedures for carriage of freight and dangerous goods;
  - v. requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking passengers from aircraft;
  - vi. 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;
- h) *Principles of flight*  
Principles of flight;
  - i) *Radiotelephony*  
Communication procedures and phraseology; action to be taken in case of communication failure.

3.6.1.3.2 In addition to the above subjects, the applicant for an airline transport pilot licence applicable to the aeroplane or powered-lift category shall have met the knowledge requirements for the instrument rating at 3.7.1.1.

#### 3.6.1.4 Skill

3.6.1.4.1 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 3.7.4.1 a) to d), including simulated engine failure.

3.6.1.4.2 In the case of an aeroplane, the applicant shall have demonstrated the ability to perform the procedures and manoeuvres described in 3.6.3.1 as pilot-in-command of a multi-engined aeroplane.

3.6.1.4.3 The applicant shall have demonstrated the ability to perform the procedures and manoeuvres described in 3.6.1.3 with a degree of competency appropriate to the privileges granted to the holder of an airline transport pilot 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) 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.

#### 3.6.1.5 Medical fitness

The applicant shall hold a current Class 1 Medical Assessment.

### 3.6.2 Privileges of the holder of the licence and the conditions to be observed

3.6.2.1 Subject to compliance with the requirements specified in 2.10, 2.12, 2.13, 2.15 and 3.1, the privileges of the holder of an airline transport pilot licence shall be:

- a) to exercise all the privileges of the holder of a private and commercial pilot licence in an aircraft within the appropriate aircraft category and, in the case of a licence 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.

3.6.2.2 When the holder of an airline transport pilot licence in the aeroplane category has previously held only a multi-crew pilot licence, the privileges of the licence shall be limited to multi-crew operations unless the holder has met the requirements established in 3.5.2.1 a), 3.5.2.2 and 3.5.2.3 as appropriate. Any limitation of privileges shall be endorsed on the licence.

**Note:** *Certain privileges of the licence are curtailed by 3.1.10 for licence holders when they attain their 60th and 65th birthdays.*

### 3.6.3 Specific requirements for the issue of the aeroplane category rating

#### 3.6.3.1 Experience

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 SCAA 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.

3.6.3.1.2 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.

3.6.3.1.3 When the applicant has flight time as a pilot of aircraft in other categories, the SCAA shall reduce the experience requirements of 3.6.3.1.1 with 25 percent (25%) provided that the total experience will not be less than the requirements of this SUCAR

### 3.6.3.2 *Flight instruction*

The applicant shall have received the dual flight instruction required at 3.4.3.2 for the issue of the commercial pilot licence and at 3.7.4 for the issue of the instrument rating or at 3.5.4 for the issue of the multi-crew pilot licence.

## 3.6.4 **Specific requirements for the issue of the helicopter category rating**

### 3.6.4.1 *Experience*

3.6.4.1.1 The applicant shall have completed not less than 1000 hours of flight time as a pilot of helicopters. The SCAA 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 1000 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.

3.6.4.1.2 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.

3.6.4.1.3 When the applicant has flight time as a pilot of aircraft in other categories, the SCAA shall reduce the experience requirements of 3.6.4.1.1 with 25 percent (25%) provided that the total experience will not be less than the requirements of this SUCAR.

### 3.6.4.2 *Flight instruction*

The applicant shall have received the flight instruction required for the

issue of the commercial pilot licence (3.4.4.2).

**Note:** *The instrument time specified in 3.6.4.1.2 c) and the night flying time specified in 3.6.4.1.2 d) do not entitle the holder of the airline transport pilot licence — helicopter to pilot helicopters under IFR.*

### 3.6.5 Specific requirements for the issue of the powered-lift category rating

#### 3.6.5.1 Experience

3.6.5.1.1 The applicant shall have completed not less than 1500 hours of flight time as a pilot of powered-lifts. The SCAA 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.

3.6.5.1.2 The applicant shall have completed in powered-lifts not less than:

- a) 250 hours, either as pilot-in-command under supervision, 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.

3.6.5.1.3 When the applicant has flight time as a pilot of aircraft in other categories, the SCAA may accept such experience and reduce the flight time requirements of 3.6.5.1.1 accordingly.

#### 3.6.5.2 Flight instruction

The applicant shall have received the dual flight instruction required at 3.4.5.2 for the issue of the commercial pilot licence and at 3.7.4 for the issue of the instrument rating.

### 3.7 Instrument rating

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

#### 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 the following subjects:

- a) *Air law*  
Rules and regulations relevant to flight under IFR; related air traffic services practices and procedures;
- b) *Aircraft general knowledge for the aircraft category being sought*
  - i. 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;
  - ii. compasses, turning and acceleration errors; gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments;
- c) *Flight performance and planning for the aircraft category being sought*
  - i. pre-flight preparations and checks appropriate to flight under IFR;

- ii. operational flight planning; preparation and filing of air traffic services flight plans under IFR; altimeter setting procedures;
- d) *Human performance for the aircraft category being sought*  
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).*

- e) *Meteorology for the aircraft category being sought*
  - i. application of aeronautical meteorology; interpretation and use of reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information; altimetry;
  - ii. causes, recognition and effects of icing; frontal zone penetration procedures; hazardous weather avoidance;
  - iii. in the case of helicopters and powered-lifts, effects of rotor icing;
- f) *Navigation for the aircraft category being sought*
  - i. practical air navigation using radio navigation aids;
  - ii. use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids;
- g) *Operational procedures for the aircraft category being sought*
  - i. application of threat and error management to operational performance;
  - ii. 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;
  - iii. 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.*

#### h) *Radiotelephony*

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

### 3.7.1.2 Skill

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 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.

3.7.1.2.2 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 3.1.6 on the use of flight simulation training devices for demonstrations of skill.*

### 3.7.1.3 Medical fitness

3.7.1.3.1 Applicants who hold a private pilot licence shall have established their hearing acuity on the basis of compliance with the hearing requirements for the issue of a Class 1 Medical Assessment.

3.7.1.3.2 Holders of a private pilot licence are required to comply with the physical and mental, and visual requirements for the issue of a Class 1 Medical Assessment.

### 3.7.2 Privileges of the holder of the rating and the conditions to be observed

3.7.2.1 Subject to compliance with the requirements specified in 2.10, 2.12 and 3.1, the privileges of the holder of an instrument rating with a specific aircraft category shall be to pilot that category of aircraft under IFR.

3.7.2.2 Before exercising the privileges on multi-engined aircraft, the holder of the rating shall have complied with the requirements of 3.7.1.2.2.

*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.*

### 3.7.3 Experience

3.7.3.1 The applicant shall hold a pilot licence for the aircraft category being sought.

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 SCAA, 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.

### 3.7.4 Flight instruction

3.7.4.1 The applicant shall have gained not less than 10 hours of the instrument flight time required in 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:
  - i. transition to instrument flight on takeoff;
  - ii. standard instrument departures and arrivals;
  - iii. en-route IFR procedures;
  - iv. holding procedures;
  - v. instrument approaches to specified minima;
  - vi. missed approach procedures;
  - vii. landings from instrument approaches;
  - viii. in-flight manoeuvres and particular flight characteristics.

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.

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

### 3.8.1 Applicability

This paragraph 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 paragraph.

### 3.8.2 Grades of authorized flight instructors/examiners.

#### 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).

#### 3.8.2.2 Flight Engineers

- 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.

3.8.2.3 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 SCAA.

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

### 3.8.2 Eligibility Requirements

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

### 3.8.4 Requirements for the issue of the Flight Instructors Rating

#### 3.8.4.1 Knowledge

The applicant shall have met the knowledge requirements for the issue of a commercial pilot licence as appropriate to the category of aircraft included in the licence. 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).*

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

#### 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.

#### 3.8.4.3 Experience



The applicant shall have met the experience requirements for the issue of a commercial pilot licence as specified in 3.4.3.1, 3.4.4.1, 3.4.5.1 for each aircraft category, as appropriate.

#### 3.8.4.4 *Flight instruction*

The applicant shall, under the supervision of a flight instructor accepted by the SCAA 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 practiced instructional techniques in those flight manoeuvres and procedures in which it is intended to provide flight instruction.

#### 3.8.5 **Privileges of the holder of the Flight Instructors rating and the conditions to be observed**

3.8.5.1 Subject to compliance with the requirements specified in 2.10 and 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 licence, a commercial pilot licence, an instrument rating, and a flight instructor rating provided that the flight instructor:
  - i. holds at least the licence and rating for which instruction is being given, in the appropriate aircraft category;
  - ii. holds the licence 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 licence.

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

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

#### 3.9 **Glider pilot licence** (currently not issued)

##### 3.9.1 **Requirements for the issue of the licence**

###### 3.9.1.1 *Age*

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

###### 3.9.1.2 *Knowledge*

3.9.1.2.1 Holding successful high school certificate or equivalent, The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a glider pilot licence, in at least the following subjects:

- a) *Air law*  
Rules and regulations relevant to the holder of a glider pilot licence; rules of the air; appropriate air traffic services practices and procedures;
- b) *Aircraft general knowledge*
  - i. principles of operation of glider systems and instruments;
  - ii. operating limitations of gliders; relevant operational information from the flight manual or other appropriate document;
- c) *Flight performance, planning and loading*

- i. effects of loading and mass distribution on flight characteristics; mass and balance considerations;
- ii. use and practical application of launching, landing and other performance data;
- iii. 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;
- d) *Human performance*  
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).*

- e) *Meteorology*  
Application of elementary aeronautical meteorology; use of procedures for obtaining, meteorological information; altimetry;
- f) *Navigation*  
Practical aspects of air navigation and dead-reckoning techniques; use of aeronautical charts;
- g) *Operational procedures*
  - i. use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
  - ii. different launch methods and associated procedures;
  - iii. appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards;
- h) *Principles of flight*  
Principles of flight relating to gliders.

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

### 3.9.1.3 *Experience*

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.

3.9.1.3.2 When the applicant has flight time as a pilot of aeroplanes, the SCAA shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 3.9.1.3.1 can be reduced accordingly.

3.9.1.3.3 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.

#### 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 3.9.1.3.2 with a degree of competency appropriate to the privileges granted to the holder of a glider pilot 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) 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.

#### 3.9.1.5 Medical fitness

The applicant shall hold a current Class 2 Medical Assessment.

### 3.9.2 Privileges of the holder of the licence and the conditions to be observed

3.9.2.1 Subject to compliance with the requirements specified in 2.10, 2.12, 2.13 and 3.1, the privileges of the holder of a glider pilot licence shall be to act as pilot-in-command of any glider provided the licence holder has operational experience in the launching method used.

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

### 3.10 Free balloon pilot licence (currently not issued)

**Note:** *The provisions of the free balloon pilot licence apply to free balloons using hot air or gas.*

#### 3.10.1 Requirements for the issue of the licence

##### 3.10.1.1 Age

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

##### 3.10.1.2 Knowledge

3.10.1.2.1 Holding successful high school certificate or equivalent the applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a free balloon pilot licence, in at least the following subjects:

- a) *Air law*

Rules and regulations relevant to the holder of a free balloon pilot

- licence; rules of the air; appropriate air traffic services practices and procedures;
- b) *Aircraft general knowledge*
    - i. principles of operation of free balloon systems and instruments;
    - ii. operating limitations of free balloons; relevant operational information from the flight manual or other appropriate document;
    - iii. physical properties and practical application of gases used in free balloons;
  - c) *Flight performance, planning and loading*
    - i. effects of loading on flight characteristics; mass calculations;
    - ii. use and practical application of launching, landing and other performance data, including the effect of temperature;
    - iii. 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;
  - d) *Human performance*  
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).*

- e) *Meteorology*  
Application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry;
- f) *Navigation*  
Practical aspects of air navigation and dead-reckoning techniques; use of aeronautical charts;
- g) *Operational procedures*
  - i. use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
  - ii. appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards;
- h) *Principles of flight*  
Principles of flight relating to free balloons.

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 licence, in communication procedures and phraseology as appropriate to VFR operations and on action to be taken in case of communication failure.

### 3.10.1.3 *Experience*

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 eight launches and ascents of which one must be solo.

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.
- 3.10.1.3.3 If the privileges of the licence are to be exercised at night, the applicant shall have gained, under appropriate supervision, operational experience in free balloons in night flying.
- 3.10.1.3.4 If passengers are to be carried for remuneration or hire, the licence holder shall complete not less than 35 hours of flight time including 20 hours as a pilot of a free balloon.

#### 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 3.10.1.3.2 with a degree of competency appropriate to the privileges granted to the holder of a free balloon pilot 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) 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.

#### 3.10.1.5 Medical fitness

The applicant shall hold a current Class 2 Medical Assessment.

### 3.10.2 Privileges of the holder of the licence and the conditions to be observed

3.10.2.1 Subject to compliance with the requirements specified in 2.10, 2.12, 2.13, 3.1 and 3.10.1.3.4, the privileges of the holder of a free balloon pilot licence shall be to act as pilot-in-command of any free balloon provided that the licence holder has operational experience in hot air or gas balloons as appropriate.

3.10.2.2 Before exercising the privileges at night, the licence holder shall have complied with the requirements specified in 3.10.1.3.3.

## 3.11 Designated Pilot Examiners

### 3.11.1 General requirements

- a) *Age.*  
An applicant for a designated pilot examiner shall be at least 21 years of age.
- b) *Medical.*  
An applicant for a designated pilot examiner shall have a Class 1 medical certificate.
- c) *General Eligibility.*  
An applicant for a designated pilot examiner shall:
  - i. Hold at least the licence and/or class/type ratings as applicable for which examining authority is sought;
  - ii. Hold at least the flight instructor ratings for which examining authority is sought or be serving in a comparable position as an air operator check airman or check pilot or comparable position in an Approved Training Organization;
  - iii. Have a reputation for integrity and dependability in the industry and the community;
  - iv. Have a good record as a pilot and flight instructor in regard to accidents, incidents, and violations; and
  - v. Have pilot and instructor licence/ratings that have never been revoked for falsification or forgery.
- d) *Knowledge:*  
The applicant for a designated pilot examiner shall pass a pre-designation knowledge test in the areas appropriate to the category of aircraft for which designation is sought.
- e) *Skill test.*  
The applicant for a designated pilot examiner shall pass a skill test conducted by an inspector of the SCAA who holds a current and valid licence with appropriate category, and if applicable class and type ratings, in the areas of operation.

### 3.11.2 Maintaining currency.

After designation, a designated pilot examiner shall maintain currency by:

- a) Attending initial and recurrent training provided by the SCAA, and
- b) Maintain a current and valid:
  - i. Pilot licence, and if applicable, class/type ratings appropriate to the designation;
  - ii. Flight instructor rating and ratings applicable to the designation; and
  - iii. Class I medical certificate.

### 3.11.3 Privileges.

Subject to compliance with the requirements specified in this SUCAR, the privileges of the examiner's designation are to conduct skill tests and proficiency checks for a licence and rating(s) as listed on the designated pilot examiner's certificate of designation and identification card.

### 3.11.4 Validity.

Subject to compliance with the requirements specified in this SUCAR, the validity period of an examiner's designation is 1 years.



### 3.11.5 **Renewal.**

- a) Renewal will be at the discretion of the SCAA.
- b) An applicant for renewal shall pass the appropriate skill test on the areas of operation

### 3.11.6 **Additional designations.**

When the SCAA deems it necessary for a designated pilot examiner to receive additional designations, the designated pilot examiner:

- a) Shall meet all the requirements in this SUCAR for the designation;
- b) Need not take an additional knowledge test provided the designation is within the same aircraft category.

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## CHAPTER 4 – LICENCES AND RATINGS FOR CREW MEMBERS OTHER THAN PILOTS

### 4.1 General Rules Concerning Flight Engineer Licences

- 4.1.1 An applicant shall, before being issued with a flight engineer Licence, meet such requirements in respect of age, knowledge, experience, skill and medical fitness as are specified for those licences.
- 4.1.2 An applicant for a flight engineer Licence shall demonstrate such requirements for knowledge and skill as are specified for those Licences, in a manner determined by the SCAA.

### 4.2 Flight Engineer Licence

- 4.2.1 The applicant shall meet language proficiency requirements contained in Chapter 2, paragraph 2.15, as applicable, and Holding successful high school certificate or equivalent.

#### 4.2.2 Requirements for the issue of the licence.

##### 4.2.2.1 Age

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

##### 4.2.2.2 Knowledge

,the applicant shall have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight engineer licence, in the following subjects:

##### a) *Air Law*

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

##### b) *Aircraft General Knowledge.*

- i. Basic principles of power-plants, gas turbines and/or piston engines; characteristics of fuels, fuel systems including fuel control; lubricants and lubrication systems, function afterburners and injection system and operation of engine ignition and starter systems;
- ii. Principles of operation, handling procedures and operating limitations of aircraft power-plants; effects of atmospheric conditions on engine performance;
- iii. Airframes, flight control, structures, wheel assemblies, brakes and anti-skid units, corrosion and fatigue life, identification structural damage and defect;
- iv. Ice and rain protection system;
- v. Pressurization and air-conditioning systems, oxygen systems;
- vi. Hydraulic and pneumatic systems;
- vii. Basic electrical theory, electrical systems (AC and DC), aircraft wiring systems, bonding and screening;
- viii. Principles of operation of instruments, compasses, autopilots, radio communication equipment, radio and radar navigation aids, flight management systems, display and avionics;
- ix. Limitations of appropriate aircraft;
- x. Fire protection, detection, suppression and extinguishing systems;
- xi. Use and serviceability checks of equipment and systems appropriate

##### c) *Flight Performance and Planning*

- i. Effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;
- ii. Use of practical application of performance data, including procedures for cruise control;
- d) *Human Performance*  
Human performance relevant to the Flight Engineer including principles of threat and error management.
- e) *Operational Performance*
  - i. 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;
  - ii. Normal, abnormal and emergency procedures;
  - iii. Operational procedures for carriage of freight and dangerous goods;
- f) *Principles of Flight*  
Fundamentals of aerodynamics;
- g) *Radiotelephony*  
Radiotelephony procedures and phraseology;

4.2.3 The applicant should have demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight engineer Licence in at least the following subjects:

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

#### 4.2.4 **Experience**

- a) The applicant shall have completed, under the supervision of a person accepted by the SCAA for that purpose, not less than 100 hours of flight time in the performance of the duties of a flight engineer. The SCAA 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 SCAA 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 SCAA 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 procedures in case of crew incapacitation, and 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 and use of appropriate emergency procedures

#### 4.2.5 Skill

- a) The applicant shall have demonstrated the ability to perform as flight engineer of an aircraft, the duties and procedures described in 4.2.4 with a degree of competency appropriate to the privileges granted to the holder of a flight engineer Licence, 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 4.2.5 shall be approved by the SCAA, which shall ensure that the synthetic flight trainer is appropriate to the task.

#### 4.2.6 Medical Fitness

The applicant shall hold a current Class 2 Medical Assessment.

#### 4.2.7 Privileges of the holder of the licence 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 Licence 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 SCAA on the basis of those requirements specified in 4.2.3 and 4.2.5 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 Licence is authorized to exercise the privileges of that Licence, shall be entered on the licence.

### 4.3 Flight Navigator Licence

4.3.1 The applicant shall holding successful high school certificate or equivalent

4.3.2 An applicant for a flight navigator licence shall demonstrate such requirements for knowledge and skill as are specified for those licences, in a manner determined by the SCAA.

#### 4.3.2.1 Age

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

#### 4.3.2.2 Knowledge

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

- a) *Air law*
  - i. rules and regulations relevant to the holder of a flight navigator licence; appropriate air traffic services practices and procedures; flight performance, planning and loading;
  - ii. effects of loading and mass distribution on aircraft performance;
  - iii. use of takeoff, landing and other performance data including procedures for cruise control;

- iv. 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
- b) *Human performance*  
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).*

- c) *Meteorology*
  - i. 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;
  - ii. 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;
- d) *Navigation*
  - i. 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;
  - ii. use, limitation and serviceability of avionics and instruments necessary for the navigation of the aircraft;
  - iii. use, accuracy and reliability of navigation systems used in departure, en-route and approach phases of flight; identification of radio navigation aids;
  - iv. principles, characteristics and use of self-contained and external-referenced navigation systems; operation of airborne equipment;
  - v. 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;
  - vi. definitions, units and formulae used in air navigation; Operational procedures;
  - vii. 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;
  - viii. principles of flight;
- e) *Radiotelephony*  
Communication procedures and phraseology.

#### 4.3.4 Experience

- 4.3.4.1 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 SCAA,

in aircraft engaged in cross-country flights, including not less than 30 hours by night.

- 4.3.4.2 When the applicant has flight time as a pilot, the SCAA 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.

#### 4.3.5 **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;
- b) exercise good judgment and airmanship.
- c) perform all duties as part of an integrated crew; and
- d) communicate effectively with the other flight crew member.

**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).*

#### 4.3.6 **Medical Fitness**

The applicant shall hold a current Class 2 Medical Assessment.

#### 4.3.7 **Privileges of the holder of the Licence and the conditions to be observed in exercising such privileges**

- a) Subject to compliance with the requirements specified in 2.10, 2.12 and 2.13 of this part, the privileges of the holder of a flight navigator licence 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 SCAA on the basis of those requirements specified in 4.3.2, 4.3.3 and 4.3.4, which are applicable to the safe operation of that type of aircraft. If the privileges include radiotelephony communication, the licence holder shall comply with the requirements specified in 2.15
- b) The types of aircraft on which the holder of a flight navigator licence is authorized to exercise the privileges of that Licence, shall be entered on the Licence.

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## CHAPTER 5 - LICENCES AND RATINGS FOR PERSONNEL OTHER THAN FLIGHT CREW MEMBERS

### 5.1 General Rules for Licence and Ratings for Personnel other than Flight Crewmembers

5.1.1 An applicant shall, before being issued with any licence 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 licence or rating.

5.1.2 An applicant, for any licence or rating for personnel other than flight crewmembers, shall demonstrate, in a manner determined by the SCAA, such requirements in respect of knowledge and skill as are specified for that licence or rating.

### 5.2 Aircraft maintenance (technician/engineer/mechanic)

#### 5.2.1 General requirements

##### 5.2.1.1 Licence Categories

a) Aircraft maintenance licences include the following categories:

- i. Category A
- ii. Category B1
- iii. Category B2
- iv. Category B3
- v. Category C

b) Categories A and B1 are subdivided into subcategories relative to combinations of aeroplanes, helicopters, turbine and piston engines. These subcategories are:

- i. A1 and B1.1 Aeroplanes Turbine
- ii. A2 and B1.2 Aeroplanes Piston
- iii. A3 and B1.3 Helicopters Turbine
- iv. A4 and B1.4 Helicopters Piston

c) Category B3 is applicable to piston-engine non-pressurised aeroplanes of 2 000kg MTOM and below

##### 5.2.1.2 Aircraft groups

a) For the purpose of ratings on aircraft maintenance licences, aircraft shall be classified in the following groups:

- i. Group 1: complex motor-powered aircraft as well as multiple engine helicopters, aeroplanes with maximum certified operating altitude exceeding FL290, aircraft equipped with fly-by-wire systems and other aircraft requiring an aircraft type rating when defined so by SCAA.
- ii. Group 2: aircraft other than those in Group 1 belonging to the following subgroups:
  1. sub-group 2a: single turbo-propeller engine aeroplanes
  2. sub-group 2b: single turbine engine helicopters
  3. sub-group 2c: single piston engine helicopters.

b) Group 3: piston engine aeroplanes other than those in Group 1.

#### 5.2.2 Requirements for the issue of the licence:

5.2.2.1 The applicant shall meet language proficiency requirements contained in Chapter 2, paragraph 2.15, as applicable



#### 5.2.2.2 Age

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

#### 5.2.2.3 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 licence holder, in at least the following subjects:

a) *Air law and airworthiness requirements*

Rules and regulations relevant to an aircraft maintenance licence holder including applicable airworthiness requirements governing certification and continuing airworthiness of aircraft and approved aircraft maintenance organization and procedures;

b) *Natural science and aircraft general knowledge*

Basic mathematics; units of measurement; fundamental principles and theory of physics and chemistry applicable to aircraft maintenance;

c) *Aircraft engineering*

i. 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;

ii. 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

d) *Human performance*

Human performance relevant to aircraft maintenance.

#### 5.2.3 Experience

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

a) An applicant for an aircraft maintenance licence shall have acquired:

i. For category A, subcategories B1.2 and B1.4:

1. 3 years of practical maintenance experience on operating aircraft, if the applicant has no previous relevant technical training; or
2. 2 year of practical maintenance experience on operating aircraft and completion of training considered relevant by Sudan SCAA as a skilled worker, in a technical trade; or
3. 1 year of practical maintenance experience on operating aircraft and completion of a basic training course approved in accordance with the applicable requirements contained in this SUCAR or related regulatory document;

b) For category B2 and subcategories B1.1 and B1.3:

- i. 5 years of practical maintenance experience on operating aircraft if the applicant has no previous relevant technical training; or
- ii. 3 years of practical maintenance experience on operating aircraft and completion of training considered relevant by Sudan SCAA as a skilled worker, in a technical trade; or

- iii. 2 years of practical maintenance experience on operating aircraft and completion of a basic training course approved in accordance to requirements contained in this SUCAR or related regulatory document;
- c) For category C with respect to large aircraft:
  - i. years of experience exercising category B1.1, B1.3 or B2 privileges on large aircraft or as support staff according to applicable regulations; or
  - ii. years of experience exercising category B1.2 or B1.4 privileges on large aircraft or as support staff according to applicable regulations;
- d) For category C with respect to other than large aircraft: 3 years of experience exercising category B1 or B2 privileges on other than large aircraft or as support staff according to applicable regulations;
- e) For category C obtained through the academic route: an applicant holding an academic degree in a technical discipline, from a university or other higher educational institution recognised by Sudan SCAA, 3 years of experience working in a civil aircraft maintenance environment on a representative selection of tasks directly associated with aircraft maintenance including 6 months of observation of base maintenance tasks.
- f) An applicant for an extension to an aircraft maintenance licence shall have a minimum civil aircraft maintenance experience requirement appropriate to the additional category or subcategory of licence applied for.
- g) The experience shall be practical and involve a representative cross section of maintenance tasks on aircraft.
- h) At least 1 year of the required experience shall be recent maintenance experience on aircraft of the category/ subcategory for which the initial aircraft maintenance licence is sought. For subsequent category/ subcategory additions to an existing aircraft maintenance licence, the additional recent maintenance experience required may be less than 1 year but shall be at least 3 months.
- i) The required experience shall be dependent upon the difference between the licence category/subcategory held and applied for. Such additional experience shall be typical of the new licence category/subcategory sought.
- i) Notwithstanding paragraph (a), aircraft maintenance experience gained outside a civil aircraft maintenance environment shall be accepted when such maintenance is equivalent to that required by this SUCAR or related regulatory document. Additional experience of civil aircraft maintenance shall, however, be required to ensure adequate understanding of the civil aircraft maintenance environment.
- j) Experience shall have been acquired within the 10 years preceding the application for an aircraft maintenance licence or for the addition of a category or subcategory to such a licence.

#### 5.2.4 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 licence.

### 5.2.5 Skill

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

### 5.2.6 Privileges of the holder of the licence and the conditions to be observed in exercising such privileges:

- a) The following privileges shall apply:
  - i. A category A aircraft maintenance licence permits the holder to issue certificates of release to service following minor scheduled line maintenance and simple defect rectification within the limits of tasks specifically endorsed on the certification authorization referred to in point 145.A.35 of SUCAR 8 - Subpart 145. The certification privileges shall be restricted to work that the licence holder has personally performed in the maintenance organization that issued the certification authorization.
  - ii. A category B1 aircraft maintenance licence shall permit the holder to issue certificates of release to service and to act as B1 support staff following:
    1. maintenance performed on aircraft structure, power plant and mechanical and electrical systems,
    2. work on avionic systems requiring only simple tests to prove their serviceability and not requiring troubleshooting.
- b) Category B1 includes the corresponding A subcategory.
- c) A category B2 aircraft maintenance licence shall permit the holder:
  - i. to issue certificates of release to service and to act as B2 support staff for following:
    1. maintenance performed on avionic and electrical systems, and
    2. electrical and avionics tasks within power plant and mechanical systems, requiring only simple tests to prove their serviceability; and
  - ii. to issue certificates of release to service following minor scheduled line maintenance and simple defect rectification within the limits of tasks specifically endorsed on the certification authorization referred to in applicable regulations of SUCAR Part 8. This certification privilege shall be restricted to work that the licence holder has personally performed in the maintenance organization which issued the certification authorization and limited to the ratings already endorsed in the B2 licence.
- d) The category B2 licence does not include any 'A' subcategory.
- e) A category C aircraft maintenance licence shall permit the holder to issue certificates of release to service following base maintenance on aircraft. The privileges apply to the aircraft in its entirety.
- f) The holder of an aircraft maintenance licence may not exercise its privileges unless:
  - i. In compliance with the applicable requirements of SUCAR 8 – Subpart M and SUCAR 8 - Subpart 145; and
  - ii. In the preceding 2-year period he/she has, either had 6 months of maintenance experience in accordance with the privileges granted by the aircraft maintenance licence or, met the provision for the issue of the appropriate privileges; and
  - iii. He/she has the adequate competence to certify maintenance on the corresponding aircraft; and

- iv. He/she is able to read, write and communicate to an understandable level in the language(s) in which the technical documentation and procedures necessary to support the issue of the certificate of release to service are written.

### 5.2.7 Additional privileges and ratings

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

5.2.7.2 A licenced AME may not exercise the privileges of his licence 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/she has, for at least 6 months:
  - i. served as an Aircraft Maintenance Engineer under his licence 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 above.

5.2.7.3 Aircraft Maintenance Engineer's licence shall authorize the holder, subject to such conditions as may be specified in the licence, 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.

### 5.2.8 Duration of AME license

#### 5.2.8.1 *Validity.*

The duration of the AME licence is five years.

#### 5.2.8.2 *Renewal.*

An AME licence that has not expired may be renewed for an additional 5 years if the holder presents evidence to the SCAA that he/she has within the past 24 months has exercised the privileges of the licence and complied with the recent experience requirements as contained in 5.2.9.

#### 5.2.8.3 *Reissue.*

If the AME licence has expired, the applicant shall have received refresher training acceptable to the SCAA and passed a skill test on the areas of operation for the AME general and any associated ratings.

### 5.2.9 Recent experience requirements

A licensed AME may not exercise the privileges of his/her licence or rating unless, within the preceding 24 months.

- a) The SCAA has found that he/she is able to do that work; or
- b) For at least 6 months within the preceding 24 months—
  - i. Served as an AME under his/her licence and rating;
  - ii. Technically supervised other AMEs;

- iii. Provided aviation maintenance instruction or served as the direct supervisor of persons providing aviation maintenance instruction for an AME course or program acceptable to the SCAA;
- iv. Supervised the maintenance, preventive maintenance, or alteration of any aircraft, airframe, aircraft engine, propeller, appliance, component, or part thereof; or
- v. Been engaged in any combination of the above

#### 5.2.10 Ratings endorsement

In order to be entitled to exercise certification privileges on a specific aircraft type, the holder of an aircraft maintenance licence need to have his/her licence endorsed with the relevant aircraft ratings.

- a) For category B1, B2 or C the relevant aircraft ratings are the following:
  - i. For group 1 aircraft, the appropriate aircraft type rating.
  - ii. For group 2 aircraft, the appropriate aircraft type rating, manufacturer sub- group rating or full sub-group rating.
  - iii. For group 3 aircraft, the appropriate aircraft type rating or full group rating.
- b) For category B3, the relevant rating is 'piston-engine non-aeroplanes of 2 000kg and below.
- c) For category A, no rating is required, subject to compliance with the requirements of point applicable regulations.
- d) The endorsement of aircraft type ratings requires the satisfactory completion of the relevant category B1, B2 or C aircraft type training.
- e) In addition to the requirement of point (b), the endorsement of the first aircraft type rating within a given category/sub-category requires satisfactory completion of the corresponding On the Job Training,
- f) By derogation from points (b) and (c), for group 2 and 3 aircraft, aircraft type ratings may also be granted after:
  - i. Satisfactory completion of the relevant category B1, B2 or C aircraft type examination, and
  - ii. In the case of B1 and B2 category, demonstration of practical experience on the aircraft type. In that case, the practical experience shall include a representative cross section of maintenance activities relevant to the licence category.
- g) In the case of a category C rating for a person qualified by holding an academic degree, the first relevant aircraft type examination shall be at the category B1 or B2 level.
- h) For group 2 aircraft:
  - i. The endorsement of manufacturer sub-group ratings for category B1 and C licence holders requires complying with the aircraft type rating requirements of at least two aircraft types from the same manufacturer which combined are representative of the applicable manufacturer sub-group;
  - ii. The endorsement of full sub-group ratings for category B1 and C licence holders requires complying with the aircraft type rating requirements of at least three aircraft types from different manufacturers which combined are representative of the applicable sub-group;
  - iii. The endorsement of manufacturer sub-groups and full sub-group ratings for category B2 licence holders requires demonstration of practical experience which shall include a representative cross



section of maintenance activities relevant to the licence category and to the applicable aircraft sub-group.

- i) For group 3 aircraft:
  - i. The endorsement of the full group 3 rating for category B1, B2 and C licence holders requires demonstration of practical experience, which shall include a representative cross section of maintenance activities relevant to the licence category and to the group 3.
  - ii. For category B1, unless the applicant provides evidence of appropriate experience, the group 3 rating shall be subject to the following limitations, which shall be endorsed on the licence:
    - 1. pressurized aeroplanes
    - 2. metal structure aeroplanes
    - 3. composite structure aeroplanes
    - 4. wooden structure aeroplanes
    - 5. aeroplanes with metal tubing structure covered with fabric.
- j) For the B3 licence:
  - i. The endorsement of the rating 'piston-engine non-pressurised aeroplanes of 2000kg MTOM and below' requires demonstration of practical experience which shall include a representative cross-section of maintenance activities relevant to the licence category.
  - ii. Unless the applicant provides evidence of appropriate experience, the rating referred to in point 1 shall be subject to the following limitations, which shall be endorsed on the licence:
    - 1. wooden structure aeroplanes.
    - 2. aeroplanes with metal tubing structure covered with fabric
    - 3. metal structure aeroplanes
    - 4. composite structure aeroplanes

### 5.3 Student Air Traffic Controller

- 5.3.1 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.
- 5.3.2 A student air traffic controller shall not perform in an operational environment unless he holds at least a Class 3 medical fitness certificate.

### 5.4 Air Traffic Controller Licence

#### 5.4.1 Requirements for the issue of the Licence

- 5.4.1.1 The applicant shall meet the requirements of 5.4.1 and the requirements of at least one of the ratings set out in 5.5.
- 5.4.1.2 Unlicensed State employees may operate as air traffic controllers on condition that they meet the same requirements.
- 5.4.1.3 The applicant shall meet language proficiency requirements contained in Chapter 2, paragraph 2.15, as applicable.

#### 5.4.1.4 Age

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

#### 5.4.1.5 Knowledge

The applicant shall have successful high school certificate or equivalent and demonstrated a level of knowledge appropriate to the holder of an air traffic controller license, in at least the following subjects:

- a) *Air law*



- Rules and regulations relevant to the air traffic controller;
- b) *Air traffic control equipment*  
Principles, use and limitations of equipment used in air traffic control;
- c) *General knowledge*  
Principles of flight; principles of operation and functioning of aircraft, power-plants and systems; aircraft performances relevant to air traffic control operations;
- d) *Human performance*  
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).*

- e) *Meteorology*  
Aeronautical meteorology; use and appreciation of meteorological documentation and information; origin and characteristics of weather phenomena affecting flight operations and safety; altimetry;
- f) *Navigation*  
Principles of air navigation; principle, limitation and accuracy of navigation systems and visual aids; and
- g) *Operational procedures*  
Air traffic control, communication, radiotelephony and phraseology procedures (routine, non-routine and emergency); use of the relevant aeronautical documentation; safety practices associated with flight.

#### 5.4.2 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 5.5 may be credited as part of the experience specified in this paragraph.

#### 5.4.3 Medical fitness

The applicant shall hold a current Class 3 Medical Assessment.

### 5.5 Air traffic controller ratings

#### 5.5.1 Categories of air traffic controller ratings

Air traffic controller ratings shall comprise the following categories:

- a) aerodrome control rating;
- b) approach control procedural 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.*

## 5.5.2 Requirements for air traffic controller ratings

### a) Knowledge

The applicant shall have demonstrated a level of knowledge appropriate to the privileges granted, in the following subjects as related to 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 procedural 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 5.5.2 a) ii, 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:
  1. satisfactorily completed an approved training course;
  2. provided, satisfactorily, under the supervision of an appropriately rated air traffic controller:
    - A) *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;
    - B) *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
    - C) *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 Directorate. 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.

5.5.3 The experience specified in 5.5.2 b) shall have been completed within the 6-month period immediately preceding application.

5.5.4 When the applicant already holds an air traffic controller rating in another category, or the same rating for another unit, the SCAA shall determine whether the experience requirement of 5.5.2 b) iii; can be reduced, and if so, to what extent.

#### 5.5.5 **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.

#### 5.5.6 **Concurrent issuance of two air traffic controller ratings**

When two air traffic controller ratings are sought concurrently, the SCAA 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.

#### 5.5.7 **Privileges of the holder of the air traffic controller rating(s) and the conditions to be observed in exercising such privileges**

5.5.7.1 Subject to compliance with the requirements specified in 2.10, 2.12, 2.13 and 2.15, the privileges of the holder of an air traffic controller licence endorsed with one or more of the under mentioned ratings shall be:

- a) *aerodrome control rating*: to provide or to supervise the provision of aerodrome control service for the aerodrome for which the licence 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 licence 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 aerodromes for which the licence holder is rated, within the airspace or portion thereof, under the jurisdiction of the unit providing approach control service

5.5.7.2 Subject to compliance with the provisions of 5.5.1 c), the privileges shall include the provision of surveillance radar approaches;

- a) *approach precision radar control rating*: to provide and/or supervise the provision of precision approach radar service at the aerodrome for which the licence holder is rated;
- b) *area control rating*: to provide and/or supervise the provision of area control service within the control area or portion thereof, for which the licence holder is rated; and
- c) *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 licence holder is rated.

5.5.7.3 Before exercising the privileges indicated in 5.5.1, the licence holder shall be familiar with all pertinent and current information.

5.5.7.4 Holder of an air traffic controller licence shall not carry out instruction in an operational environment unless the holder has received proper authorization from the SCAA.

#### 5.5.8 **Validity of ratings**

An air traffic controller rating shall become invalid when an air traffic controller has ceased to exercise the privileges of the rating for a period of six months and shall remain invalid until the controller's ability to exercise the privileges of the rating has been re-established.

#### 5.5.9 **Maximum working hours.**

5.5.9.1 Except in an emergency, a licensed air traffic controller shall not perform any duties for twenty-four consecutive hours during each seven consecutive days.

5.5.9.2 An air traffic controller may not serve or be required to serve:

- a) for more than ten consecutive hours; or
- b) for more than ten hours during a period of twenty-four consecutive hours, unless the air traffic controller has had a rest period of at least eight hours at or before the end of the ten hours of duty.

#### 5.5.10 **Responsibilities over fatigue**

A person holding an air traffic controller licence shall not act as an air traffic controller nor shall an employer allow a licensed controller, if the controller or the employer knows or suspects that the controller is suffering from or, having regard to the circumstances of the period of duty to be undertaken, is likely to suffer from, such fatigue as may endanger the safety of any aircraft to which an air traffic control service may be provided.

#### 5.5.11 **Prohibition of unlicensed air traffic controllers.**

- a) An air traffic controller shall not provide any type of air traffic service at any aerodrome at which air traffic control service is required to be provided under SUCAR 2 (Rules of the Air), or at any other place, not being an aerodrome, at which air traffic control service is provided, whether or not under the direction of the SCAA, unless he does so in accordance with the terms of-
  - i. a valid air traffic controller licence so granted authorising air traffic controller to provide that type of service at that aerodrome or other places;
  - ii. a valid air traffic controller licence so granted which does not authorise air traffic controller to provide that type of service at the aerodrome or other place, but he is supervised by a person who is present at the time and who is the holder of a valid air traffic controller licence so granted which authorises him to provide at that aerodrome or other place the type of air traffic control service which is being provided; or
  - iii. the air traffic controller's appointment as an air traffic controller trainee and he is supervised by a person who is present at the time and who is the holder of a valid air traffic controller's licence so granted which

- authorizes him to provide that type of service at any aerodrome or at a place at which air traffic control service is provided:
- b) A holder of an air traffic controller licence shall not perform any of the functions specified in these regulations in respect of a rating at any station unless-
    - i. his licence includes that rating and the rating is valid for the station at which, and the type of radar equipment, if any, with the aid of which functions are performed; or
    - ii. he is supervised by a person who is present at the time and who is the holder of a valid air traffic controller's licence granted under these Regulations which authorizes him to provide at that aerodrome or other place the type of air traffic control service which is being provided.
  - c) Nothing in this regulation shall prohibit a holder of a valid air traffic controller licence from providing at any place for which the licence includes a valid rating, information to aircraft in flight in the interests of safety.

### 5.5.12 Recency requirements

- 5.5.12.1 A licence holder shall be deemed to have satisfied the requirements for recent experience in relation to a valid rating at a particular time if he has exercised the privileges associated with that rating, for a minimum of 30 hours within the previous six months.
- 5.5.12.2 If a licence holder has more than one rating, he shall exercise the privileges of those ratings for a minimum of 30 hours within the previous six months for each rating to satisfy the recency requirement.
- 5.5.12.3 A licence holder who does not satisfy the recency requirement at a particular time in relation to an endorsement shall be taken to satisfy that requirement at a later time, after he has undergone any retraining required by the ANS and has been assessed by the ANS as competent in performing the function and duties required by the relevant rating(s), or he has performed the relevant function and duties at the aerodrome or in relation to the airspace to which the endorsement relates under supervision for a period of time deemed necessary and appropriate by the ANS. Following a period of supervision, the controller shall be subject to an assessment of his competence before returning to operational duties.
- 5.5.12.4 The ANS shall set up and maintain a system to ensure that the licence holder satisfies the recency requirement in relation to air traffic controller ratings. The ANS shall ensure that those who do not satisfy the recency requirement undergo appropriate retraining, supervision and assessment programmes.

### 5.5.13 Renewal requirements.

An air traffic controller licence may be renewed if the holder demonstrates, at a level appropriate to the privileges being renewed, the skill, judgement and performance required to provide a safe, orderly and expeditious control service within the six months

## 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 licence already held by the applicant and issues a separate licence 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 licences*

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## CHAPTER 6 - LICENCES FOR FLIGHT OPERATIONS OFFICERS OTHER

### 6.1 General

- 6.1.1 No air operator shall permit a person to act and no person shall act as a flight operations officer/dispatcher or cabin crewmember unless he/she holds a licence/certificate issued by the SCAA.
- 6.1.2 A flight operations officer/dispatcher or cabin crew member , when employed in conjunction with an approved method of flight supervision shall be trained and certified in accordance with regulatory requirements contained in the relevant SUCARs.
- 6.1.3 A person who holds a flight operations officer/dispatcher or cabin crewmember licence issued by the SCAA shall present it for inspection up cabin crewmember on the request of the SCAA.
- 6.1.4 Holders of licences issued in accordance with this Part shall strictly adhere to the general regulatory requirements for personnel licensing and certification detailed in this Part.
- 6.1.5 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.
- 6.1.6 An applicant, for any license or rating for personnel other than flight crewmembers, shall demonstrate, in a manner determined by the SCAA, such requirements in respect of knowledge and skill as are specified for that license or rating.

### 6.2 Flight Operations Officer/Dispatcher

#### 6.2.1 Requirements for the issue of a licence:

##### 6.2.1.1 Age

The participant shall at least be 21 years old.

##### 6.2.1.2 Knowledge

The applicant shall have successful high school certificate or equivalent and 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:

##### a) Air law

Rules and regulations relevant to the holder of a flight operations officer/ dispatcher license; appropriate air traffic services practices and procedures;

##### b) Aircraft general knowledge

Principles of operation of airplane power-plants, systems and instruments;

- i. operating limitations of aeroplanes and power-plants;
- ii. minimum equipment list;

##### c) Flight performance calculation and planning procedures

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

- d) *Human performance*  
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).*

- e) *Meteorology*
- i. 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;
  - ii. interpretation and application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information;
- f) *Navigation*  
Principles of air navigation with particular reference to instrument flight;
- g) *Operational procedures*
- i. use of aeronautical documentation;
  - ii. operational procedures for the carriage of freight and dangerous goods;
  - iii. procedures relating to aircraft accidents and incidents; emergency flight procedures;
  - iv. procedures relating to unlawful interference and sabotage of aircraft;
- h) *Principles of flight*  
Principles of flight relating to the appropriate category of aircraft; and
- i) *Radio communication*  
Procedures for communicating with aircraft and relevant ground stations.

### 6.2.2 Experience

The applicant shall have gained the following experience:

- a) 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.

### 6.2.3 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.
- d) recognize and manage threats and errors

#### 6.2.4 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 – Operations of Aircraft, Subpart 1 – Commercial Air Transport.

#### 6.2.5 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 SCAA. 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 operations officer/dispatcher once every 24 months.

#### 6.2.6 Validity.

The validity period of the licence is 24 months. A licence shall become invalid when a flight dispatcher has ceased to exercise the privileges of the licence for a period of 12 months. A licence shall remain invalid until the flight dispatcher's ability to exercise the privileges of the licence has been re-established through recurrent training.

#### 6.2.7 Renewal.

The flight dispatcher licence may be renewed by presenting to the SCAA evidence of successfully passing a competency check on the areas of operation.

#### 6.2.8 Recency training

- a) Where a previously qualified Flight Dispatcher has been absent from his duties with an AOC holder for a period in excess of 90 days, that Flight Dispatcher shall be given a briefing on all of the changes to AOC holders policies and procedures that occurred during his absence. The briefing shall be followed by a successful competency check by a CAA approved Flight Dispatch examiner'
- b) Where a previously qualified Flight Dispatcher has not actively dispatched with an AOC holder for a period in excess of 12 months, that Dispatcher shall undergo a course of refresher training which will include recurrent training and a competency check conducted by a CAA approved dispatch examiner

#### 6.2.9 Reissue.

If the flight dispatcher licence has expired, the applicant shall have received refresher training acceptable to the SCAA and passed the skill test on the

areas of operation

## 6.3 Cabin Crewmember

### 6.3.1 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:

#### 6.3.1.1 Education

High school or an equivalent level;

#### 6.3.1.2 Age

Minimum of 17 years;

#### 6.3.1.3 Height

Able to reach safety equipment and open and close overhead bins in the aircraft from standing position;

#### 6.3.1.4 Weight

Able to:

- a) Move comfortably down the aisle, single file, facing forward;
- b) Pass quickly through the smallest secondary cabin emergency exit window;

#### 6.3.1.5 Medical

Shall meet Class 2 Medical Standards.

### 6.3.2 Types of Training

- a) Basically, regulatory provisions require that cabin crew annually complete the training programmer 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 SCAA, for each aircraft type in its fleet.

- c) 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.
- d) 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.
- e) Recurrent Training is required to be performed each twelve-month period following the initial or 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.

### 6.3.3 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.

### 6.3.4 Operation of more than one type aircraft

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.

#### 6.3.5 Approval of Training Courses

Training syllabus shall be in line with SCAA document for “Cabin Crew Training Standards” and shall be included in the company operation manual.

#### 6.3.6 Revision of Course Syllabus

Requests for revising a training course syllabus shall be submitted in writing to the SCAA 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.

#### 6.3.7 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.

#### 6.3.8 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.

### 6.4 Aeronautical Station Operator License

#### 6.4.1 Requirements for the issue of the licence

6.4.1.1 Before issuing an aeronautical station operator license, a Contracting State shall require the applicant to meet the requirements of 6.4.1. Unlicensed individuals may operate as aeronautical station operators on the condition that the State from which they operate ensures that they meet the same requirements.

#### 6.4.1.2 Education

The applicant shall meet language proficiency requirements contained in Chapter 2, paragraph 2.15, as applicable and holding successful high school certificate or equivalent.

#### 6.4.2 Age

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

#### 6.4.3 Knowledge

The applicant shall have demonstrated a level of knowledge appropriate to the holder of an aeronautical station operator, in at least the following subjects:

General knowledge

a) air traffic services provided within the State;

Operational procedures

b) radiotelephony procedures; phraseology; telecommunication network;

Rules and regulations



- c) rules and regulations applicable to the aeronautical station operator; and telecommunication equipment
- d) principles, use and limitations of telecommunication equipment in an aeronautical station.

#### 6.4.4 Experience

The applicant shall have:

- a) satisfactorily completed an approved training course within the 12-month period immediately preceding application, and have served satisfactorily under a qualified aeronautical station operator for not less than two months; or
- b) satisfactorily served under a qualified aeronautical station operator for not less than six months during the 12-month period immediately preceding application.

#### 6.4.5 Skill

The applicant shall demonstrate, or have demonstrated, competency in:

- a) Operating the telecommunication equipment in use; and
- b) Transmitting and receiving radiotelephony messages with efficiency and accuracy.

#### 6.4.6 Privileges of the aeronautical station operator and the conditions to be observed in exercising such privileges

Subject to compliance with the requirements specified in 2.11.1 and 2.16.2, the privileges of the holder of an aeronautical station operator licence shall be to act as an operator in an aeronautical station. Before exercising the privileges of the licence, the holder shall be familiar with all pertinent and current information regarding the types of equipment and operating procedures used at that aeronautical station.

### 6.5 LOAD MASTER CERTIFICATE

#### 6.5.1 Requirements for the issue of the certificate

##### 6.5.1.1 Education

The applicant shall hold a pass in Sudanese high school certificate or equivalent certificate.

##### 6.5.2 Age

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

##### 6.5.3 Knowledge

The applicant shall have demonstrated a level of knowledge appropriate to the holder of an load master , in at least the following subjects:

General knowledge

- a) Weight and balance
- b) Load control
- c) Unit load devices and loading limitation
- d) Load master duties
- e) Safety
- f) Live animals

- g) Dangerous good .

#### 6.5.4 Experience

The applicant shall have:

- a) Satisfactorily completed an approved training course,
- b) Aircraft Type Training is required in order to qualify and maintain qualification on each type of aircraft to which the load master will be assigned to duty.
- c) Satisfactorily served under a qualified load master for not less than two months.

#### 6.5.5 Skill

The applicant shall demonstrate, or have demonstrated, competency in:

- a) Developing and implementing the cargo loading plan.
- b) Inspect cargo compartment, supervising loading of control and directing the off-loading of cargo.

#### 6.5.7 **Renewal.**

The load master certificate will be renewed every two years .

#### 6.5.8 **Recency training**

- a) Where a previously qualified load master has been absent from his duties with an AOC holder for a period in excess of 90 days, that load master shall be given a briefing on all of the changes to AOC holders policies and procedures that occurred during his absence. The briefing shall be followed by a successful check by a CAA approved load master instructor
- b) Where a previously qualified load master has not actively working with an AOC holder for a period in excess of 12 months, that load master shall undergo a course of refresher training which will include recurrent training and check conducted by a CAA approved load master instructor

## CHAPTER 7 - SPECIFICATIONS FOR PERSONNEL LICENCES

### 7.1 General

The SCAA shall ensure that ICAO contracting States are able to easily determine the licence privileges and validity of ratings of all licenses issued by Sudan in accordance to the requirements contained in this SUCAR.

### 7.2 Specifications of Licences Issued by Sudan

Personnel licences issued by the SCAA in accordance with the relevant provisions of this SUCAR shall conform to the following specifications and details that will appear on the licence:

- I. Name of the State /Authority (in bold type) and, where necessary, conditions under which the Licence is issued;
- II. Title of Licence (in very bold type);
- III. Serial number of the Licence, in Arabic numerals, given by the SCAA
- IV. Name of the holder in full (in Roman alphabet);
- IVa. Date of birth;
- V. Address of holder;
- VI. Nationality of holder;
- VII. Signature of holder;
- VIII. Authority and, where necessary, conditions under which the license is issued
- IX. Certification concerning validity and authorization for holder to exercise privileges appropriate to Licence;
- X. Signature of Officer issuing the license and the date of issue
- XI. Seal or stamp of Sudan CAA;
- XII. Ratings, e.g. category, class, type aircraft, airframe etc.
- XIII. Remarks, such as special endorsements relating to limitations and endorsements for privileges;
- XIV. Any other details desired by the SCAA;

### 7.3 Material

First quality paper or other suitable material shall be used and the items mentioned in 7.2 above shall be shown clearly and distinctively.

### 7.4 Language

Personnel licences issued under this SUCAR shall be issued in the English Language.

### 7.5 Arrangement of Items

Item headings are uniformly numbered in roman numerals as indicated in Paragraph 7.2 of this SUCAR and the item number in any licence shall, under any arrangement, refer to the same item heading as shown in Paragraph 7.2.

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## CHAPTER 8 - MEDICAL STANDARDS AND CERTIFICATION

**Note 1:** *The Medical Standards and Certification requirements contained are directly taken from Chapter 6 of Annex 1 – Personnel Licensing to the Convention on International Civil Aviation, 12<sup>th</sup> Edition, November 2018, with the only exception being requirements for RPAS which is not included in SUCAR. This implies that any amendment to Chapter 6 of the Annex would also be considered an amendment to Chapter 8 of this SUCAR and this Chapter has to be amended as soon the amendment to Chapter 6 of the Annex becomes effective. Withstanding this Note, it should also be noted that references to other Chapters in the Annex have been modified to reflect the actual references in this SUCAR.*

**Note 2:** *The Standards and Recommended Practices established in this chapter 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 judgement of the individual medical examiner. The evaluation must, therefore, be based on a medical examination conducted throughout in accordance with the highest standards of medical practice.*

**Note 3:** *Predisposing factors for disease, such as obesity and smoking, may be important for determining whether further evaluation or investigation is necessary in an individual case.*

**Note 4:** *In cases where the applicant does not fully meet the medical requirements and in complicated and unusual cases, the evaluation may have to be deferred and the case submitted to the medical assessor of the Licensing Authority for final evaluation. In such cases due regard must be given to the privileges granted by the licence applied for or held by the applicant for the Medical Assessment, and the conditions under which the licence holder is going to exercise those privileges in carrying out assigned duties.*

**Note 5:** *Attention is called to the administrative clause in 2.9 of this SUCAR dealing with accredited medical conclusion.*

**Note 6:** *Guidance material to assist SCAA and medical examiners is published separately in the Manual of Civil Aviation Medicine (Doc 8984). This guidance material also contains a discussion of the terms “likely” and “significant” as used in the context of the medical provisions in Chapter 8.*

**Note 7:** *Basic safety management principles, when applied to the medical assessment process, can help ensure that aeromedical resources are utilized effectively.*

### 8.1 Medical Assessments — General

#### 8.1.1 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:
  - i. commercial pilot licences — aeroplane, airship, helicopter and powered-lift
  - ii. multi-crew pilot licences — aeroplane
  - iii. airline transport pilot licences — aeroplane, helicopter and powered-lift
- b) Class 2 Medical Assessment - applies to applicants for, and holders of:
  - i. flight navigator licences

- ii. flight engineer licences
  - iii. private pilot licences — aeroplane, airship, helicopter and powered-lift
  - iv. glider pilot licences
  - v. free balloon pilot licences
  - vi. Student pilot
- c) Class 3 Medical Assessment - applies to applicants for, and holders of air traffic controller licences.
- 8.1.2 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 2.9.12 of this SUCAR.
- 8.1.3 The medical examiner shall report to the SCAA any individual case where, in the examiner's judgement, an applicant's failure to meet any requirement, whether numerical or otherwise, is such that exercise of the privileges of the licence being applied for, or held, is not likely to jeopardize flight safety (2.9.18 of this SUCAR).
- 8.1.4 The level of medical fitness to be met for the renewal of a Medical Assessment shall be the same as that for the initial assessment except where otherwise specifically stated.

**Note:** *The intervals between routine medical examinations for the purpose of renewing Medical Assessments are specified in 2.9.4.*

## 8.2 Requirements for Medical Assessments

### 8.2.1 General

An applicant for a Medical Assessment issued in accordance with the terms of 2.9.1 and 2.9.2 shall undergo a medical examination based on the following requirements:

- a) physical and mental;
- b) visual and colour perception; and
- c) hearing.

### 8.2.2 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 sequelae from operation; or
- d) any effect or side-effect of any prescribed or non-prescribed therapeutic, diagnostic or preventive medication taken; such as would entail a degree of functional incapacity which is likely to interfere with the safe operation of an aircraft or with the safe performance of duties.

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

### 8.2.3 Visual acuity test requirements

8.2.3.1 The methods in use for the measurement of visual acuity are likely to lead to

differing evaluations. To achieve uniformity, therefore, Contracting States shall ensure that equivalence in the methods of evaluation be obtained.

8.2.3.2 The following should be adopted for tests of visual acuity:

- i. Visual acuity tests should be conducted in an environment with a level of illumination that corresponds to ordinary office illumination (30-60 cd/m<sup>2</sup>).
- ii. 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.

#### 8.2.4 Colour perception requirements

8.2.4.1 Contracting States shall use such methods of examination as will guarantee reliable testing of colour perception.

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

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

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

**Note:** *Guidance on suitable methods of assessing colour vision is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

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

#### 8.2.5 Hearing test requirements

8.2.5.1 Contracting States shall use such methods of examination as will guarantee reliable testing of hearing.

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

8.2.5.3 Applicants for Class 1 Medical Assessments shall be tested by pure-tone audiometry at first issue of the Assessment, not less than once every five years up to the age of 40 years, and thereafter not less than once every two years.

8.2.5.3.1 Alternatively, other methods providing equivalent results may be used.

8.2.5.4 Applicants for Class 3 Medical Assessments shall be tested by pure-tone audiometry at first issue of the Assessment, not less than once every four years up to the age of 40 years, and thereafter not less than once every two years.

8.2.5.4.1 Alternatively, other methods providing equivalent results may be used.

8.2.5.5 Applicants for Class 2 Medical Assessment should be tested by pure-tone audiometry at first issue of the Assessment and, after the age of 50 years, not



less than once every two years.

8.2.5.6 At medical examinations, other than those mentioned in 8.2.5.3, 8.2.5.4 and 8.2.5.5, where audiometry is not performed, applicants shall be tested in a quiet room by whispered and spoken voice tests.

**Note 1:** *The reference zero for calibration of pure-tone audiometers is that of the pertinent Standards of the current edition of the Audiometric Test Methods, published by the International Organization for Standardization (ISO).*

**Note 2:** *For the purpose of testing hearing in accordance with the requirements, a quiet room is a room in which the intensity of the background noise is less than 35 dB(A).*

**Note 3:** *For the purpose of testing hearing in accordance with the requirements, the sound level of an average conversational voice at 1 m from the point of output (lower lip of the speaker) is c. 60 dB(A) and that of a whispered voice c. 45dB(A). At 2 m from the speaker, the sound level is 6 dB(A) lower.*

**Note 4:** *Guidance on assessment of applicants who use hearing aids is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

**Note 5:** *Attention is called to 3.7.3.1 on requirements for the issue of instrument rating to applicants who hold a private pilot licence.*

### 8.3 Class 1 Medical Assessment

#### 8.3.1 Assessment issue and renewal

8.3.1.1 An applicant for a commercial pilot licence — aeroplane, airship, helicopter or powered-lift, a multi-crew pilot licence — aeroplane, or an airline transport pilot licence — aeroplane, helicopter or powered-lift shall undergo an initial medical examination for the issue of a Class 1 Medical Assessment.

8.3.1.2 Except where otherwise stated in this section, holders of commercial pilot licences — aeroplane, airship, helicopter or powered-lift, multi-crew pilot licences — aeroplane, or airline transport pilot licences — aeroplane, helicopter or powered-lift shall have their Class 1 Medical Assessments renewed at intervals not exceeding those specified in 2.10.7.

8.3.1.3 When the SCAA is satisfied that the requirements of this section and the general provisions of 8.1 and 8.2 have been met, a Class 1 Medical Assessment shall be issued to the applicant.

#### 8.3.2 Physical and mental requirements

8.3.2.1 The applicant shall not suffer from any disease or disability which could render that applicant likely to become suddenly unable either to operate an aircraft safely or to perform assigned duties safely.

8.3.2.2 The applicant shall have no established medical history or clinical diagnosis of:

- a) an organic mental disorder;
- b) a mental or behavioural disorder due to use of psychoactive substances; this includes dependence syndrome induced by alcohol or other psychoactive substances;
- c) schizophrenia or a schizotypal or delusional disorder;
- d) a mood (affective) disorder;
- e) a neurotic, stress-related or somatoform disorder;
- f) a behavioural syndrome associated with physiological disturbances or physical factors;

- g) a disorder of adult personality or behaviour, particularly if manifested by repeated overt acts;
- h) mental retardation;
- i) a disorder of psychological development;
- j) a behavioural or emotional disorder, with onset in childhood or adolescence; or
- k) a mental disorder not otherwise specified; such as might render the applicant unable to safely exercise the privileges of the licence applied for or held.

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

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

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

8.3.2.4 The applicant shall have no established medical history or clinical diagnosis of any of the following:

- a) a progressive or non-progressive disease of the nervous system, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges;
- b) epilepsy; or
- c) any disturbance of consciousness without satisfactory medical explanation of cause.

8.3.2.5 The applicant shall not have suffered any head injury, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges.

8.3.2.6 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 licence and rating privileges.

8.3.2.6.1 An applicant who has undergone coronary bypass grafting or angioplasty (with or without stenting) or other cardiac intervention or who has a history of myocardial infarction or who suffers from any other potentially incapacitating cardiac condition shall be assessed as unfit unless the applicant's cardiac condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

8.3.2.6.2 An applicant with an abnormal cardiac rhythm shall be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

**Note:** *Guidance on cardiovascular evaluation is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

8.3.2.7 Electrocardiography shall form part of the heart examination for the first issue of a Medical Assessment.

8.3.2.7.1 Electrocardiography shall be included in re-examinations of applicants over the age of 50 no less frequently than annually.

8.3.2.7.2 Electrocardiography should be included in re-examinations of applicants between the ages of 30 and 50 no less frequently than every two years.

**Note 1:** *The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify disqualification without further thorough cardiovascular investigation.*

**Note 2:** *Guidance on resting and exercise electro-cardiography is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

8.3.2.8 The systolic and diastolic blood pressures shall be within normal limits.

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

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

8.3.2.9 There shall be no significant functional nor structural abnormality of the circulatory system.

8.3.2.10 There shall be no acute disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleurae likely to result in incapacitating symptoms during normal or emergency operations.

8.3.2.10.1 Chest radiography should form part of the initial examination.

**Note:** *Periodic chest radiography is usually not necessary but may be a necessity in situations where asymptomatic pulmonary disease can be expected.*

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

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

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

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

8.3.2.13 Applicants with active pulmonary tuberculosis shall be assessed as unfit.

8.3.2.13.1 Applicants with quiescent or healed lesions which are known to be

tuberculous, or are presumably tuberculous in origin, may be assessed as fit.

**Note 1:** *Guidance on assessment of respiratory diseases is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

**Note 2:** *Guidance on hazards of medications and drugs is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

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

8.3.2.14.1 Applicants shall be completely free from those hernias that might give rise to incapacitating symptoms.

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

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

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

8.3.2.17 Applicants with insulin-treated diabetes mellitus shall be assessed as unfit.

**Note:** *Guidance on assessment of Type 2 insulin-treated diabetic is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

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

**Note:** *Guidance on assessment of diabetic applicants is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

8.3.2.18 Applicants with diseases of the blood and/or the lymphatic system shall be assessed as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

**Note:** *Sickle cell trait or other haemoglobinopathic traits are usually compatible with a fit assessment.*

8.3.2.19 Applicants with renal or genitourinary disease shall be assessed as unfit, unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

8.3.2.19.1 Urine examination shall form part of the medical examination and abnormalities shall be adequately investigated.

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

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

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

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

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

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

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

8.3.2.22.1 For applicants with a low-risk uncomplicated pregnancy, evaluated and supervised in accordance with 8.3.2.22, the fit assessment should be limited to the period from the end of the 12th week until the end of the 26th week of gestation.

8.3.2.23 Following confinement or termination of pregnancy, the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-evaluation in accordance with best medical practice and it has been determined that she is able to safely exercise the privileges of her licence and ratings.

8.3.2.24 The applicant shall not possess any abnormality of the bones, joints, muscles, tendons or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

**Note:** *Any sequelae after lesions affecting the bones, joints, muscles or tendons, and certain anatomical defects will normally require functional assessment to determine fitness.*

8.3.2.25 The applicant shall not possess any abnormality or disease of the ear or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

8.3.2.26 There shall be:



- a) no disturbance of vestibular function;
- b) no significant dysfunction of the Eustachian tubes; and
- c) no unhealed perforation of the tympanic membranes.

8.3.2.26.1 A single dry perforation of the tympanic membrane need not render the applicant unfit.

**Note:** *Guidance on testing of the vestibular function is contained in Manual of Civil Aviation Medicine (Doc 8984).*

8.3.2.27 There shall be:

- a) no nasal obstruction; and
- b) no malformation nor any disease of the buccal cavity or upper respiratory tract which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

8.3.2.28 Applicants with stuttering or other speech defects sufficiently severe to cause impairment of speech communication shall be assessed as unfit.

### 8.3.3 Visual requirements

The medical examination shall be based on the following requirements.

8.3.3.1 The function of the eyes and their adnexa shall be normal. There shall be no 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 licence and rating privileges.

8.3.3.2 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:

- a) such correcting lenses are worn during the exercise of the privileges of the licence or rating applied for or held; and
- b) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's licence.

**Note 1:** *8.3.3.2 b) is the subject of Standards in ICAO Annex 6, Part I – Commercial Air Transport and SUCAR Part 6, Subpart 1 – Commercial Air Transport.*

**Note 2:** *An applicant accepted as meeting these provisions is deemed to continue to do so unless there is reason to suspect otherwise, in which case 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.*

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

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



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

8.3.3.2.2 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.

8.3.3.2.3 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.

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

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

8.3.3.3 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 licence and rating privileges.

8.3.3.4 The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by 8.3.3.2, the N5 chart or its equivalent at a distance selected by that applicant in the range of 30 to 50 cm and the ability to read the N14 chart or its equivalent at a distance of 100 cm. If this requirement is met only by the use of near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correction already prescribed in accordance with 8.3.3.2; 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 licence. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

**Note 1:** N5 and N14 refer to the size of typeface used. For further details, see the Manual of Civil Aviation Medicine (Doc 8984).

**Note 2:** An applicant who needs near correction to meet this requirement will require "look-over", bifocal or perhaps multifocal lenses in order to read the instruments and a chart or manual held in the hand, and also to make use of distant vision, through the windscreen, without removing the lenses. Single-vision near correction (full lenses of one power only, appropriate for reading) significantly reduces distant visual acuity and is therefore not acceptable.

**Note 3:** Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the visual flight deck tasks relevant to the types of aircraft in which the applicant is likely to function.

8.3.3.4.1 When near correction is required in accordance with this paragraph, a

second pair of near-correction spectacles shall be kept available for immediate use.

8.3.3.5 The applicant shall be required to have normal fields of vision.

8.3.3.6 The applicant shall be required to have normal binocular function.

8.3.3.6.1 Reduced stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia need not be disqualifying.

#### 8.3.4 Hearing requirements

8.3.4.1 The applicant, when tested on a pure-tone audiometer, 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.

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

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

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

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

### 8.4 Class 2 Medical Assessment

#### 8.4.1 Assessment issue and renewal

8.4.1.1 An applicant for a private pilot licence — aeroplane, airship, helicopter or powered-lift, a glider pilot licence, a free balloon pilot licence, a flight engineer licence or a flight navigator licence shall undergo an initial medical examination for the issue of a Class 2 Medical Assessment.

8.4.1.2 Except where otherwise stated in this section, holders of private pilot licences — aeroplane, airship, helicopter or powered-lift, glider pilot licences, free balloon pilot licences, flight engineer licences or flight navigator licences shall have their Class 2 Medical Assessments renewed at intervals not exceeding those specified in 2.10.7.

8.4.1.3 When the SCAA is satisfied that the requirements of this section and the general provisions of 8.1 and 8.2 have been met, a Class 2 Medical Assessment shall be issued to the applicant.

#### 8.4.2 Physical and mental requirements

The medical examination shall be based on the following requirements.

8.4.2.1 The applicant shall not suffer from any disease or disability which could render that applicant likely to become suddenly unable either to operate an aircraft safely or to perform assigned duties safely.

8.4.2.2 The applicant shall have no established medical history or clinical diagnosis of:

- a) an organic mental disorder;

- b) a mental or behavioural disorder due to psychoactive substance use; this includes dependence syndrome induced by alcohol or other psychoactive substances;
- c) schizophrenia or a schizotypal or delusional disorder;
- d) a mood (affective) disorder;
- e) a neurotic, stress-related or somatoform disorder;
- f) a behavioural syndrome associated with physiological disturbances or physical factors;
- g) a disorder of adult personality or behaviour, particularly if manifested by repeated overt acts;
- h) mental retardation;
- i) a disorder of psychological development;
- j) a behavioural or emotional disorder, with onset in childhood or adolescence; or
- k) a mental disorder not otherwise specified; such as might render the applicant unable to safely exercise the privileges of the licence applied for or held.

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

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

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

8.4.2.3 The applicant shall have no established medical history or clinical diagnosis of any of the following:

- a) a progressive or non-progressive disease of the nervous system, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges;
- b) epilepsy;
- c) any disturbance of consciousness without satisfactory medical explanation of cause.

8.4.2.4 The applicant shall not have suffered any head injury, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges.

8.4.2.5 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 licence and rating privileges.

8.4.2.5.1 An applicant who has undergone coronary bypass grafting or angioplasty (with or without stenting) or other cardiac intervention or who has a history of myocardial infarction or who suffers from any other potentially incapacitating

cardiac condition shall be assessed as unfit unless the applicant's cardiac condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

8.4.2.5.2 An applicant with an abnormal cardiac rhythm shall be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence or rating privileges.

**Note:** *Guidance on cardiovascular evaluation is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

8.4.2.6 Electrocardiography shall form part of the heart examination for the first issue of a Medical Assessment after the age of 40.

8.4.2.6.1 Electrocardiography shall be included in re-examinations of applicants after the age of 50 no less than every two years.

8.4.2.6.2 Electrocardiography shall form part of the heart examination for the first issue of a Medical Assessment.

**Note 1:** *The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify disqualification without further thorough cardiovascular investigation.*

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

8.4.2.7 The systolic and diastolic blood pressures shall be within normal limits.

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

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

8.4.2.8 There shall be no significant functional nor structural abnormality of the circulatory system.

8.4.2.9 There shall be no disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleura likely to result in incapacitating symptoms during normal or emergency operations.

8.4.2.9.1 Chest radiography should form part of the initial and periodic examinations in cases where asymptomatic pulmonary disease can be expected.

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

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

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

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

8.4.2.12 Applicants with active pulmonary tuberculosis shall be assessed as unfit.

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

**Note 1:** *Guidance on assessment of respiratory diseases is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

**Note 2:** *Guidance on hazards of medication and drugs is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

8.4.2.13 Applicants shall be completely free from those hernias that might give rise to incapacitating symptoms.

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

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

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

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

8.4.2.16 Applicants with insulin-treated diabetes mellitus shall be assessed as unfit.

**Note:** *Guidance on assessment of Type 2 insulin-treated diabetic applicants is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

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

**Note:** *Guidance on assessment of diabetic applicants is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

8.4.2.17 Applicants with diseases of the blood and/or the lymphatic system shall be assessed as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

**Note:** *Sickle cell trait and other haemoglobinopathic traits are usually compatible with fit assessment.*



8.4.2.18 Applicants with renal or genitourinary disease shall be assessed as unfit unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

8.4.2.18.1 Urine examination shall form part of the medical examination and abnormalities shall be adequately investigated.

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

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

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

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

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

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

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

8.4.2.21.1 For applicants with a low-risk uncomplicated pregnancy, evaluated and supervised in accordance with 8.4.2.21, the fit assessment should be limited to the period from the end of the 12th week until the end of the 26th week of gestation.

8.4.2.22 Following confinement or termination of pregnancy, the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-evaluation in accordance with best medical practice and it has been determined that she is able to safely exercise the privileges of her licence and ratings.

8.4.2.23 The applicant shall not possess any abnormality of the bones, joints, muscles, tendons or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

**Note:** *Any sequelae after lesions affecting the bones, joints, muscles or tendons, and certain anatomical defects will normally require functional assessment to determine fitness.*



8.4.2.24 The applicant shall not possess any abnormality or disease of the ear or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

8.4.2.25 There shall be:

- a) no disturbance of the vestibular function;
- b) no significant dysfunction of the Eustachian tubes; and
- c) no unhealed perforation of the tympanic membranes.

8.4.2.25.1 A single dry perforation of the tympanic membrane need not render the applicant unfit.

**Note:** *Guidance on testing of the vestibular function is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

8.4.2.26 There shall be:

- a) no nasal obstruction; and
- b) no malformation nor any disease of the buccal cavity or upper respiratory tract which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

8.4.2.27 Applicants with stuttering and other speech defects sufficiently severe to cause impairment of speech communication shall be assessed as unfit.

### 8.4.3 Visual requirements

The medical examination shall be based on the following requirements.

8.4.3.1 The function of the eyes and their adnexa shall be normal. There shall be no 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 licence and rating privileges.

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

- a) such correcting lenses are worn during the exercise of the privileges of the licence or rating applied for or held; and
- b) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's licence.

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

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

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

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

8.4.3.2.2 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.*

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

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

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

8.4.3.3 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 licence and rating privileges.

8.4.3.4 The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by 8.4.3.2, the N5 chart or its equivalent at a distance selected by that applicant in the range of 30 to 50 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 8.4.3.2; 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 licence. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

**Note 1:** *N5 refers to the size of typeface used. For further details, see the Manual of Civil Aviation Medicine (Doc 8984).*

**Note 2:** *An applicant who needs near correction to meet the requirement will require "look-over", bifocal or perhaps multifocal lenses in order to read the instruments and a chart or manual held in the hand, and also to make use of distant vision, through the windscreen, without removing the lenses. Single-vision near correction (full lenses of one power only, appropriate for reading) significantly reduces distant visual acuity and is therefore not acceptable.*

**Note 3:** *Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of the reading distances for the visual flight deck tasks relevant to the types of aircraft in which the*

*applicant is likely to function.*

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

8.4.3.5 The applicant shall be required to have normal fields of vision.

8.4.3.6 The applicant shall be required to have normal binocular function.

8.4.3.6.1 Reduced stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia need not be disqualifying.

#### 8.4.4 Hearing requirements

**Note:** Attention is called to 2.7.1.3.1 on requirements for the issue of instrument rating to applicants who hold a private pilot licence.

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

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

8.4.4.3 An applicant who does not meet the requirements in 8.4.4.1 or 8.4.4.2 should undergo further testing in accordance with 8.3.4.1.1.

#### 8.5 Class 3 Medical Assessment

##### 8.5.1 Assessment issue and renewal

8.5.1.1 An applicant for an air traffic controller licence shall undergo an initial medical examination for the issue of a Class 3 Medical Assessment.

8.5.1.2 Except where otherwise stated in this section, holders of air traffic controller licences shall have their Class 3 Medical Assessments renewed at intervals not exceeding those specified in 2.10.7

8.5.1.3 When the Licensing Authority is satisfied that the requirements of this section and the general provisions of 8.1 and 8.2 have been met, a Class 3 Medical Assessment shall be issued to the applicant.

##### 8.5.2 Physical and mental requirements

8.5.2.1 The applicant shall not suffer from any disease or disability which could render that applicant likely to become suddenly unable to perform duties safely.

8.5.2.2 The applicant shall have no established medical history or clinical diagnosis of:

- a) an organic mental disorder;
- b) a mental or behavioural disorder due to psychoactive substance use; this includes dependence syndrome induced by alcohol or other psychoactive substances;
- c) schizophrenia or a schizotypal or delusional disorder;
- d) a mood (affective) disorder;
- e) a neurotic, stress-related or somatoform disorder;
- f) a behavioural syndrome associated with physiological disturbances or

- physical factors;
- g) a disorder of adult personality or behaviour, particularly if manifested by repeated overt acts;
  - h) mental retardation;
  - i) a disorder of psychological development;
  - j) a behavioural or emotional disorder, with onset in childhood or adolescence; or
  - k) a mental disorder not otherwise specified; such as might render the applicant unable to safely exercise the privileges of the licence applied for or held
- 8.5.2.2.1 An applicant with depression, being treated with antidepressant medication, should be assessed as unfit unless the medical assessor, having access to the details of the case concerned, considers the applicant's condition as unlikely to interfere with the safe exercise of the applicant's licence and rating privileges.
- Note 1:** *Guidance on assessment of applicants treated with antidepressant medication is contained in the Manual of Civil Aviation Medicine (Doc 8984).*
- Note 2:** *Mental and behavioural disorders are defined in accordance with the clinical descriptions and diagnostic guidelines of the World Health Organization as given in the International Statistical Classification of Diseases and Related Health Problems, 10th Edition — Classification of Mental and Behavioural Disorders, WHO 1992. This document contains detailed descriptions of the diagnostic requirements which may be useful for their application to medical assessment.*
- 8.5.2.3 The applicant shall have no established medical history or clinical diagnosis of any of the following:
- a) a progressive or non-progressive disease of the nervous system, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges;
  - b) epilepsy; or
  - c) any disturbance of consciousness without satisfactory medical explanation of cause.
- 8.5.2.4 The applicant shall not have suffered any head injury, the effects of which are likely to interfere with the safe exercise of the applicant's licence and rating privileges.
- 8.5.2.5 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 licence and rating privileges.
- 8.5.2.5.1 An applicant who has undergone coronary bypass grafting or angioplasty (with or without stenting) or other cardiac intervention or who has a history of myocardial infarction or who suffers from any other potentially incapacitating cardiac condition shall be assessed as unfit unless the applicant's cardiac condition has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere with the safe exercise of the applicant's licence and rating privileges.
- 8.5.2.5.2 An applicant with an abnormal cardiac rhythm shall be assessed as unfit unless the cardiac arrhythmia has been investigated and evaluated in accordance with best medical practice and is assessed not likely to interfere

with the safe exercise of the applicant's licence and rating privileges.

**Note:** *Guidance on cardiovascular evaluation is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

8.5.2.6 Electrocardiography shall form part of the heart examination for the first issue of a Medical Assessment.

8.5.2.6.1 Electrocardiography shall be included in re-examinations of applicants after the age of 50 no less frequently than every two years.

**Note 1:** *The purpose of routine electrocardiography is case finding. It does not provide sufficient evidence to justify disqualification without further thorough cardiovascular investigation.*

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

8.5.2.7 The systolic and diastolic blood pressures shall be within normal limits.

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

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

**8.5.2.8** There shall be no significant functional nor structural abnormality of the circulatory system.

**8.5.2.9** There shall be no disability of the lungs nor any active disease of the structures of the lungs, mediastinum or pleurae likely to result in incapacitating symptoms.

**Note:** *Chest radiography is usually not necessary but may be indicated in cases where asymptomatic pulmonary disease can be expected.*

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

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

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

**Note:** *Guidance on hazards of medications is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

8.5.2.12 Applicants with active pulmonary tuberculosis shall be assessed as unfit.

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

**Note 1:** *Guidance on assessment of respiratory diseases is contained in the Manual*



of Civil Aviation Medicine (Doc 8984).

**Note 2:** *Guidance on hazards of medication and drugs is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

8.5.2.13 Applicants with significant impairment of the function of the gastrointestinal tract or its adnexae shall be assessed as unfit.

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

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

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

8.5.2.16 Applicants with insulin-treated diabetes mellitus shall be assessed as unfit.

**Note:** *Guidance on assessment of Type 2 insulin-treated diabetic applicants is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

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

**Note:** *Guidance on assessment of diabetic applicants is contained in the Manual of Civil Aviation Medicine (Doc 8984).*

8.5.2.17 Applicants with diseases of the blood and/or the lymphatic system shall be assessed as unfit, unless adequately investigated and their condition found unlikely to interfere with the safe exercise of their licence and rating privileges.

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

8.5.2.18.1 Urine examination shall form part of the medical examination and abnormalities shall be adequately investigated.

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

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



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

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

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

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

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

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

8.5.2.21.2 For applicants with a low-risk uncomplicated pregnancy, evaluated and supervised in accordance with 8.5.2.21, the fit assessment should be limited to the period until the end of the 34th week of gestation.

8.5.2.22 Following confinement or termination of pregnancy the applicant shall not be permitted to exercise the privileges of her licence until she has undergone re-evaluation in accordance with best medical practice and it has been determined that she is able to safely exercise the privileges of her licence and ratings.

8.5.2.23 The applicant shall not possess any abnormality of the bones, joints, muscles, tendons or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

**Note:** *Any sequelae after lesions affecting the bones, joints, muscles or tendons, and certain anatomical defects will normally require functional assessment to determine fitness.*

8.5.2.24 The applicant shall not possess any abnormality or disease of the ear or related structures which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

8.5.2.25 There shall be no malformation nor any disease of the nose, buccal cavity or upper respiratory tract which is likely to interfere with the safe exercise of the applicant's licence and rating privileges.

8.5.2.26 Applicants with stuttering or other speech defects sufficiently severe to cause impairment of speech communication shall be assessed as unfit.

### 8.5.3 Visual requirements

The medical examination shall be based on the following requirements.

8.5.3.1 The function of the eyes and their adnexa shall be normal. There shall be no 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 licence and rating privileges.

8.5.3.2 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:

- a) such correcting lenses are worn during the exercise of the privileges of the licence or rating applied for or held; and
- b) in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's licence.

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

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

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

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

8.5.3.2.2 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.*

8.5.3.2.3 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.

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

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

8.5.3.3 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 licence and rating

privileges.

8.5.3.4 The applicant shall have the ability to read, while wearing the correcting lenses, if any, required by 8.5.3.2, the N5 chart or its equivalent at a distance selected by that applicant in the range of 30 to 50 cm and the ability to read the N14 chart or its equivalent at a distance of 100 cm. If this requirement is met only by the use of near correction, the applicant may be assessed as fit provided that this near correction is added to the spectacle correction already prescribed in accordance with 8.5.3.2; 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 licence. When near correction is required, the applicant shall demonstrate that one pair of spectacles is sufficient to meet both distant and near visual requirements.

**Note 1:** *N5 and N14 refer to the size of typeface used. For further details, see the Manual of Civil Aviation Medicine (Doc 8984).*

**Note 2:** *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. Single-vision 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.*

**Note 3:** *Whenever there is a requirement to obtain or renew correcting lenses, an applicant is expected to advise the refractionist of reading distances for the air traffic control duties the applicant is likely to perform.*

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

8.5.3.5 The applicant shall be required to have normal fields of vision.

8.5.3.6 The applicant shall be required to have normal binocular function.

8.5.3.6.1 Reduced stereopsis, abnormal convergence not interfering with near vision, and ocular misalignment where the fusional reserves are sufficient to prevent asthenopia and diplopia need not be disqualifying.

#### 8.5.4 Hearing requirements

8.5.4.1 The applicant, when tested on a pure-tone audiometer 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.

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

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

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

8.5.4.1.2 Alternatively, a practical hearing test conducted in an air traffic control environment representative of the one for which the applicant's licence and ratings are valid may be used.

## 8.6 Medical Assessor

8.6.1 The SCAA shall appoint a Medical Assessor, qualified and licensed in the practice of medicine and who have considerable experience and practice in Aviation medicine and competent in evaluating and assessing medical conditions of significance terms to be in-charge of the Aero medical section

## 8.7 Designated Medical Examiner (DME)

8.7.1 The SCAA shall designate and authorize medical examiners (DMEs), who are qualified and licenced to practice medicine in Sudan as designated medical examiners of the SCAA for personnel licensing purposes, subject to the following qualification and experience:

a) *Experience*

- i. Had at least 8 years of experience in the practice of medicine;
- ii. Have acquired practical knowledge and experience of the conditions in which the holder of a licence or 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 holders.
- 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 and 3 medical certificate holders.

c) *Refresher course:*

Designated 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 a licence or certificates, carry out their duties. During the period of designation a DME is required to attend a minimum of 20 hours approved refresher training in every three years.

## 8.8 Aviation Medical Center

The SCAA recognize any authorized/approved aviation medical center in any ICAO contracting State, for intensive medical check or consultation when needed by the SCAA Designated Medical Examiner, once the medical standards of that ICAO contracting State is reviewed and accepted by the SCAA.

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## CHAPTER 9 - APPROVED TRAINING ORGANIZATIONS

**Note:** Requirements for Approved Training Organizations (ATOs) contained in this Chapter relate to aviation training organizations that provided knowledge and skill training to personnel engaged in safety-related aviation activity in line with the requirements contained in the relevant SUCARs. However, detailed requirement for Approved Maintenance Training Organizations (AMTO) are in Subpart 147 of this SUCAR – Approved Maintenance Training Organizations.

### 9.1 Issue of Approval

#### 9.1.1 General

9.1.1.1 The SCAA may approve an ATO to provide the following:

- a) Any training activity that leads toward the issuance of a licence, rating, authorization or approval.
- b) Provision of training services necessary for an operator to meet the requirements of SUCARs.
- c) Special curricula training designed to meet:
  - i. Qualification-based training requirements, including those deemed acceptable through the approval of an 'alternate means of compliance' mechanism, or
  - ii. Competency based training and assessment requirements,

9.1.1.2 No person may operate as a certificated ATO without, or in violation of, an approved training organization certificate, ratings or training specifications issued under this part.

9.1.1.2.1 The ATO shall display the ATO certificate in a place accessible to the public in the principal place of business of the training center.

9.1.1.2.2 The certificate and training specifications issued to an approved training organization shall be available on the premises for inspection by the public and the SCAA.

9.1.1.2.3 The approval of a training organization by the SCAA shall be dependent upon the applicant demonstrating compliance with the requirements of this part and the safety management requirements of SUCARs Part 19.

9.1.2 The issuance of an approval for an aviation training organization and the validity of the approval shall be dependent upon the training provided being in compliance with the requirements of this Chapter.

9.1.3 The approval document shall contain:

- a) the training organization's name and location,
- b) date of issue of approval and period of validity as applicable, and
- c) terms/conditions of approval.

#### 9.1.4 Changes in the approved scope

Changes or modifications in equipment, software, facilities, or key managerial personnel should be reported to the SCAA to ensure that any required approvals are obtained without delay

9.1.5 After receiving an approval, the ATO will be subjected to continued surveillance by the SCAA to ensure that the ATO is operating within the terms of its approval



## 9.2 Training and procedures manual

9.2.1 The training organization shall provide training and procedures manual for the use and guidance of personnel concerned. The training and procedures manual shall be submitted to the SCAA for approval and acceptance. 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 9.3;
- 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 9.5.1;
- f) a description of the duties and qualification of the personnel designated as responsible for planning, performing and supervising the training in Paragraph 9.5.2;
- g) a description of the procedures used to establish and maintain the competence of instructional personnel as required by Paragraph 9.5.3;
- 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.

9.2.2 The training organization shall ensure that the training and procedures manual is amended as necessary to keep the information contained therein up to date.

9.2.3 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.

## 9.3 Quality Assurance System

The training organization shall establish a quality assurance system, acceptable to the SCAA, which ensures that training and instructional practices comply with the requirements of this Chapter.

### 9.3.1 Elements

The following Quality Assurance elements should be clearly identifiable in the training and procedures manual:

- a) the organization's training policy (for clients as well as for its own personnel);
- b) training standards;
- c) allocation of responsibility;
- d) resources, organization and operational processes;



- e) procedures to ensure conformity of training with the policy;
- f) procedures for identifying deviations from policy and standards and taking corrective action; and
- g) the evaluation and analysis of experiences and trends concerning policy and training standards, in order to provide feedback into the system for the continual improvement of the quality of training

## 9.4 Facilities

9.4.1 An ATO should have facilities appropriate to the size and scope of the intended operations provided in an environment conducive to learning. These facilities should include:

- a) general areas which consist of sufficient:
  - i. office space for ATO managerial, administrative and training
  - ii. staff;
  - iii. study and examination rooms and reference/library facilities; and
  - iv. storage areas, including secure areas for training and personnel records;
- b) classroom areas which are suitably equipped to effectively deliver the theoretical elements of the training programme in accordance with the training and procedures manual; and
- c) practical training areas which are designed and equipped to ensure the attainment of end-state competencies. These facilities should include, whenever applicable:
  - i. operations, planning and briefing rooms;
  - ii. simulation and procedure trainer areas;
  - iii. suitable parking areas for aircraft used in training;
  - iv. workshop and aircraft hangar facilities; and
  - v. parts, tools and material storage areas.

9.4.2 The training organization shall have, or have access to the information, equipment, training devices and material in good working order to conduct courses for which it is approved.

9.4.3 Synthetic training devices shall be qualified in according to standards established by the SCAA and their use shall be approved by the SCAA to ensure that they are appropriate to the task.

9.4.3.1 In addition to meeting the obligations of SUCARs, the ATO should implement at least the following for all training devices:

- a) a routine maintenance programme to ensure that the training devices continue to function properly and, when applicable, continue to accurately replicate any component, system or equipment for which training, checking or testing credits are being sought; and
- b) a record-keeping process for each training device to be established and maintained, which accurately records the device's use and lists any discrepancies with respect to its functionality or intended performance characteristics that may impact training.

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

## 9.5 Personnel

9.5.1 The training organization shall nominate a person to be responsible for ensuring that it is in compliance with the requirements contained in this Chapter.

9.5.2 The training organization shall employ the necessary personnel to plan and supervise the training to be conducted. Typical key positions include:

- a) accountable executive (who may also be head of training);
- b) head of training;
- c) instructional services manager;
- d) quality manager;
- e) maintenance manager, if applicable; and
- f) safety manager, if applicable.

9.5.2.1 Depending on the size and scope of the organization and the requirements of the SCAA, some of the key positions may be supplemented by subordinates. Small and less complex ATOs may wish to combine some key positions when it becomes clear that the resulting position's roles and responsibilities would not be adversely affected by such a decision.

9.5.3 The competency of the instructional personnel shall be in accordance with guidelines and procedures established by the training organization for selecting and approving instructors and at a level that is acceptable to the SCAA.

9.5.4 The training organization shall ensure that all instructional personnel receive initial and continued training appropriate to their tasks and responsibilities. The training programme established by the training organization shall include training in knowledge and skills related to human performance.

9.5.5 The ATO shall provide the number of qualified and competent instructors and evaluators appropriate to the size and scope of the intended operations, who hold appropriate licences, certificates, qualifications and ratings or authorizations as deemed necessary by the SCAA.

## 9.6 Records

9.6.1 The training organization shall retain detailed student records to ensure that all requirements of the training courses have been met as approved by the SCAA.

9.6.2 The training organization shall maintain a system for recording the qualification and training of instructional and examining personnel.

9.6.3 The records required by 9.6.1 shall be kept for a minimum period of two years after completion of the training. The records required by 9.6.2 shall be retained for a minimum period of two years after the instructor or examiner ceases to perform a function for the training organization.

## 9.7 Oversight

9.7.1 The SCAA shall through its safety oversight surveillance programme ensure the training organization's continued compliance with the requirements contained in this Chapter and with related approval procedures.

9.7.2 The main elements of the ATO activities that are subject to the SCAA's oversight include, as applicable, the following:

- a) staff adequacy in terms of number and qualifications;
- b) validity of instructors' licences, certificates, ratings and authorizations;

- c) logbooks;
- d) appropriate and adequate facilities for the training and for the number of students;
- e) documentation process (e.g. the review and update of the training and procedures manual), with particular emphasis on course documentation, including records of system updates, training/operations manuals, etc.;
- f) training delivery in the classroom and in simulation devices and, if applicable, flight instruction or on-the-job training, including briefing and
- g) instructor training;
- h) QA practices;
- i) safety management system functionality
- j) training, examination and assessment records;

#### 9.8 **Evaluation and checking**

When the SCAA 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 SCAA or designated by the training organization in accordance with criteria approved by the SCAA.

#### 9.9 **Approval of a Foreign ATOs**

There may be a need for a licensing Authority to approve ATOs that are located outside the national territory.

In principle, there is no difference between the approval of training organizations based abroad and those based Sudan. The principles and procedures that are described in this SUCAR fully apply to foreign-based ATOs.

#### 9.10 **Bilateral Approval Agreements**

Whenever possible, SCAA will set up jointly agreed-to procedures to minimize the likelihood of imposing an unnecessary burden on the industry due to the duplication of approval activities by the SCAA. Following the initial issuance of an ATO's approval, SCAA will gain some efficiency by comparing its approval processes with the host State and entering into shared best practices for a mutually beneficial ongoing oversight programme of ATOs within each other's territory.

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## APPENDIX 1

### TESTS & EXAMINATIONS – GENERAL PROCEDURES

#### 1. **Written Examination**

An applicant for Type Rating written examinations must:

- a) show that he holds a Commercial Pilot Licence issued or validated by the SCAA;
- b) satisfactorily complete the ground instruction course required by this SUCAR 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. **Written Examination Policy**

- a) The examination 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 70%;
- d) There is no negative marking;
- e) Failure in one module may require that the applicant sit for an oral test on the discretion of the Instructor/Examiner with the approval of the Director of the PEL directorate;
- f) Failure in two modules or more requires the applicant to sit for re-test in the failed modules only;
- g) Failure in more than two modules would require the applicant to retake the full test.

#### 3. **Cheating or other unauthorized conduct.**

- a) An applicant for a knowledge test may not:
  - i. Copy or intentionally remove any knowledge test;
  - ii. Give to another applicant or receive from another applicant any part or copy of a knowledge test ;
  - iii. Give assistance on , or receive assistance on a knowledge test during the period that test is being given;
  - iv. Take any part of a knowledge test on behalf of another person;
  - v. Be represented by, or represent another person for a knowledge test;
  - vi. Use any material or aid during the time the test is being given, unless specifically authorized to do so by the SCAA; and
  - vii. Intentionally cause, assist, or participate in any act prohibited by this paragraph
- b) An applicant who the SCAA finds has committed an act prohibited by paragraph (a) of this section is prohibited, for 1 year after the date of committing that act, from:
  - i. Applying for any licence, rating, or authorization issued under part 1 of these Regulations; and
  - ii. Applying for and taking any test under part 1 these Regulations;
  - iii. Any licence or rating held by the applicant may be suspended or revoked if the SCAA finds that person has committed an act prohibited by this section.

#### 4. **Validity of Knowledge test examination results**

The validity of the knowledge test results for an applicant for a pilot licence shall be as follows:

- a) for Private Pilot Licence (PPL) – twenty-four months after passing the test;
- b) for Commercial Pilot Licence (CPL) – thirty-six months after passing the test;
- c) for Airline Transport Pilot licence (ATPL) - five years after passing the test;
- d) For Multi-crew Pilot Licence (MPL) – five years after passing the test.
- e) For flight dispatcher licenses – 24 months after passing the test.

#### 5. **Prerequisites for flight tests.**

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

- a) have passed the required knowledge written test
- b) have the applicable instruction and aeronautical experience prescribed in this SUCAR;
- c) hold a current Medical Certificate appropriate to the certificate sought;
- d) meet the age requirement for the issuance of the licence or rating sought;
- 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.

#### 6. **Flight Test – Required Aircraft and Equipment.**

##### a) *General*

An applicant for a license 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 4c of this appendix; 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 man oeuvres solely by reference to instruments must furnish equipment, satisfactory to the examiner that excludes the visual reference of the applicant outside of the

7

#### 7. **Flight Test: Status of SCAA Inspectors or Authorized Examiners.**

When a SCAA Inspector or Authorized Examiner conducts the flight test of an applicant for a pilot or flight engineer license or rating for the purpose of observing the applicant's ability to perform satisfactorily the procedures and man oeuvres 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.

8. **Re-testing after failure.**

An applicant for a written or flight test who fails a required test may not apply for re-testing until 30 days after the date he failed the test. However, in the case of a 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.

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## APPENDIX 2 – LOG BOOKS

### 1. General

The aeronautical training and experience used to meet the requirements for a license or rating, or the recent flight experience requirements contained in this SUCAR, must be reliably recorded and maintained for review as may be required.

### 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.
- iv. A co-pilot acting under the supervision of PIC on an aeroplane on which more than one pilot is required under these regulations may log as PIC under supervision flight time, provided such PIC time under supervision is countersigned by the pilot in command of the aircraft.

#### 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 SUCAR) for inspection upon request by the SCAA or a SCAA Inspector within 7 days of the request made.

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## APPENDIX 3 – TRAINING PROGRAMME

### 1. General

- a) Each Operator shall:
  - i. establish and obtain the appropriate initial and final approval from the SCAA of a training programme that meets the requirements of this Appendix, and that ensures that crewmembers, authorized examiners, flight instructors are trained accordingly to perform their assigned duties;
  - ii. provide adequate ground and flight-training facilities and properly-qualified ground instructors for the training required by this SUCAR;
  - iii. provide and keep current with respect to each aircraft type and, if applicable, the variations within that aircraft type, appropriate training material, examinations, forms, instructions, and procedures for use in conducting the training and checks required by this SUCAR; 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 SUCAR 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 SCAA:
  - 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 SCAA.
- b) If the proposed training programme or revision complies with this appendix, the SCAA grants initial approval in writing after which the operator may conduct the training in accordance with that programme. The SCAA then evaluates the effectiveness of the training programme and advises the Operator of deficiencies, if any, that must be corrected;
- c) The SCAA grants final approval of the training programme or revision if the operator shows that the training conducted under the initial approval set forth in 2b) of this appendix ensures that each person that successfully completes the training is adequately trained to perform his assigned duties;
- d) Whenever the SCAA 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 SCAA, make any changes in the programme that are found necessary by the SCAA 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:
    1. the operator,
    2. the type of aircraft and, if applicable, the particular variation within a type, for which the training or check is being conducted, and
    3. 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 the SCAA 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 SUCAR must be used instead of the aircraft to satisfy the flight crew specific training requirements such as:
  - i. low level wind shear, and in-flight turbulence;
  - ii. low visibility operations (LVOPS);
  - iii. controlled flight into terrain (CFIT);
  - iv. traffic collision and avoidance system or airborne collision avoidance system and
  - v. 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 for in this appendix 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 Appendix 1 to this SUCAR; 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.

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## APPENDIX 4 – SYNTHETIC TRAINING DEVICES

### 1. General

This appendix 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 appendix 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 appendix 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 SCAA.
- b) If the SCAA 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 SCAA.
- d) Software changes actually installed must be summarized and provided to the SCAA. 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 SCAA copy of the test guide.
- e) The SCAA 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 SCAA 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 appendix, all required simulator instruction and checks must be conducted under an advanced simulation training programme which is approved by the SCAA 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*

Aerodynamic programming to include:

- i. Ground effect - For example, round-out, flare, and touchdown. This requires data on lift, drag, and pitching moment in ground effect.
- ii. Ground reaction - Reaction of the airplane upon contact with the runway during landing to include strut deflections, tire friction, and side forces. Ground handling characteristics - steering inputs to include crosswind, braking, thrust reversing, deceleration, and turning radius.
- iii. Minimum of three-axis freedom of motion systems.
- iv. Phase I landing maneuver test guide to verify simulator data with actual aircraft flight test data and provide simulator performance tests for Phase I representative brake and tyre failure dynamics (including anti-skid) and decreased brake efficiency due to high brake temperature based on aircraft-related data.
- v. A motion system, which provides motion cues equal to or better than those provided by a six-axis freedom-of-motion system.
- vi. Operational principal navigation systems, including electronic flight instrument systems and INS.
- vii. Means for quickly and effectively testing simulator programming and hardware.
- viii. 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.
- ix. Timely permanent update of simulator hardware and programming subsequent to aircraft modification.
- x. 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.
- xi. 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.
- xii. 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 SCAA.

xiii. The test results in initial approval.

xiv. 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:
  1. Dry;
  2. Wet;
  3. Icy;
  4. Patchy wet;
  5. Patchy ice;
  6. Wet on rubber residue in touchdown zone;
  7. 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 SCAA.
  - 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:
    1. Variable cloud density;
    2. Partial obscuration of ground scenes; that is, the effect of a scattered to broken cloud deck;
    3. Gradual breakout;
    4. Patchy fog;
    5. The effect of fog on airport lighting;

6. 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 SUCAR.

### 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 7c, 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 SCAA 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.

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## APPENDIX 5 – LANGUAGE PROFICIENCY REQUIREMENTS

### 1. General

**Note:** *The ICAO language proficiency requirements include the holistic descriptors and the ICAO Operational Level (Level 4) of the ICAO Language Proficiency Rating Scale in this appendix. The language proficiency requirements are applicable to the use of both phraseologies and plain language.*

To meet the language proficiency requirements contained in this SUCAR, 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 SCAA 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

The SCAA has adopted the ICAO language proficiency rating scale and has included them in this SUCAR as Attachment to Appendix 5 – *ICAO Language Proficiency Rating Scale* (See following pages)

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