Doc 9379
AN/916

Manual of Procedures for Establishment and Management of a State's Personnel Licensing System

Approved by the Secretary General
and published under his authority

Second Edition — 2012

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AMENDMENTS

Amendments are announced in the supplements to the *Catalogue of ICAO Publications;* the Catalogue and its supplements are available on the ICAO website at www.icao.int. The space below is provided to keep a record of such amendments.

RECORD OF AMENDMENTS AND CORRIGENDA

AMENDMENTS		
No.	Date	Entered by

CORRIGENDA		
No.	Date	Entered by

FOREWORD

As long as air travel depends on qualified pilots or other air and ground personnel, their competence, skills and training will remain the essential guarantee of efficient and safe operations. Adequate personnel training and licensing also instil confidence among States, leading to international recognition and acceptance of personnel qualifications and licences and greater trust in aviation on the part of the traveller.

Consequently, personnel licensing is an important element of an ICAO member State's safety oversight system. It is a complex endeavour which encompasses technical, economical and industrial issues. Most ICAO member States control only a limited number of licence holders and may not consider it feasible or economical to set up a fully staffed licensing section. Many of the licensing functions and duties mentioned in this manual can be and often are considerably reduced and compressed in those States with limited aviation activities. It is one of the aims of this manual to provide such States with the necessary tools to develop a personnel licensing system to suit their needs while fulfilling their obligations under the Convention on International Civil Aviation.

ICAO Standards and Recommended Practices for the licensing of flight crew members (pilots, flight engineers and flight navigators), air traffic controllers, aeronautical station operators, aircraft maintenance personnel and flight operations officers/flight dispatchers are provided in Annex 1 (*Personnel Licensing*) to the Convention on International Civil Aviation.

This manual contains further guidance for States on establishing and operating a personnel licensing system that meets the requirements of Annex 1. It is divided into two parts: Part I deals with the general principles of personnel licensing, the regulatory structure and the organization of a State's personnel licensing system; Part II contains procedures on the issuance of various licences and ratings and on the approval and surveillance of a training organization or programme.

The material in this manual is based on procedures used in many States and includes extracts of regulations and other licensing provisions. These extracts may assist a State in developing national regulations to ensure compliance with the minimum requirements laid down in Annex 1. However, the extracts are illustrative only and are not intended to be comprehensive or to reflect "best practice", and alternative procedures may be equally acceptable. It should also be noted that, because the samples quoted are from various sources, there may be differences in the use of terminology and titles.

This manual should be used in conjunction with the following Annexes to the *Convention on International Civil Aviation* (Doc 7300): Annex 1 — *Personnel Licensing* and Annex 6 — *Operation of Aircraft* (Part I — *International Commercial Air Transport — Aeroplanes*, Part II — *International General Aviation — Aeroplanes* and Part III — *International Operations — Helicopters*).

Comments on this edition of the manual would be appreciated. They will be taken into account in the preparation of subsequent editions. Comments concerning the manual should be addressed to:

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GLOSSARY

ABBREVIATIONS AND ACRONYMS

AFIS	Aerodrome flight information service
AIC	Aeronautical information circular
AIP	Aeronautical information publication
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
CCQ	Cross-crew qualification
CMO	Chief medical officer
COSCAP	Cooperative development of operational safety and continuing airworthiness programme
CPL	Commercial pilot licence
CPL/IR	Commercial pilot licence with instrument rating
CRM	Crew resource management
EASA	European Aviation Safety Agency
EFOD	Electronic filing of differences
FAA	Federal Aviation Administration
FCL	Flight crew licensing
FE	Flight engineer
FSB	Flight Standardization Board
FSTD	Flight simulation training device
HF	High frequency
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ISD	Instructional systems design
JAR	Joint Aviation Requirements
LOFT	Line oriented flight training
MCTOM	Maximum certificated take-off mass
MFF	Mixed-fleet flying
MPL	Multi-crew pilot licence
NCMC	National continuous monitoring coordinator
OEB	Operations Evaluation Board
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
QC	Quality control
RAeS	Royal Aeronautical Society
RSOO	Regional safety oversight organization
RTF	Radiotelephony
SARPs	Standards and Recommended Practices

SMS	Safety management system
SOLI	State of licence issue
SOPs	Standard operating procedures
TCDS	Type certificate data sheets
TEM	Threat and error management
USOAP	Universal Safety Oversight Audit Programme

EXPLANATION OF TERMS

When the following terms are used in this manual, they have the following meanings:

Ab initio. Literally "from the beginning". Refers to trainees with no prior knowledge of, or exposure to, the subject or activity being taught.

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

Approved training. Training conducted under special curricula and supervision approved by a Contracting State.

Note 1.— Annex 1 requires that approved training of flight crew members and air traffic controllers for the purpose of obtaining a licence or rating is conducted within an approved training organization. Annex 1 also requires that competency-based approved training for aircraft maintenance personnel is conducted within an approved training organization.

Note 2.— Although not falling under the criteria of training specifically for the issue of a licence or a rating, flight crew members undergoing approved training for the maintenance of competency or for gaining an operational qualification that does not fall under the training criteria outlined in Annex 6 — Operation of Aircraft, *Part I* — International Commercial Air Transport — Aeroplanes, *Chapter 9, 9.3, or Part III* — International Operations — Helicopters, *Section II, Chapter 7, 7.3, should receive such training from an approved training organization.*

Approved training organization (ATO). An organization approved by and operating under the supervision of a Contracting State in accordance with the requirements of Annex 1 to perform approved training.

Cross-crew qualification. A type rating qualification using a type rating transition course, for which a pilot receives training credit for the technical similarities and common operational and handling procedures of another aircraft type for which he or she is qualified.

Note.— The training credit allows an approved reduction in the type rating course, compared with the type rating course used to qualify those pilots who do not receive such a credit.

Director. The senior official who is the head of a State's aviation administration and Licensing Authority.

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.

Licensing Authority. The Authority designated by a Contracting State as responsible for the licensing of personnel.

Medical assessment. Evidence issued by a Contracting State that the licence holder meets specific requirements of medical fitness.

Mixed-fleet flying (MFF) operations. Operations in which the operator assigns qualified pilots to operate as flight crew members on more than one aircraft type or variant, in accordance with procedures and conditions acceptable to the State of the Operator.

PEL Office. The office within the Civil Aviation Authority responsible for personnel licensing functions and processes.

Pilot-in-command under supervision (PIC/US). 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 Licensing Authority.

Powered-lift. A heavier-than-air aircraft capable of vertical take-off, 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.

Quality. The totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

Quality assurance (QA). All the planned and systematic actions necessary to provide adequate confidence that all activities satisfy given standards and requirements, including the ones specified by the approved training organization in relevant manuals.

Quality audit. A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

Quality control (QC). A system for verifying and maintaining a desired level of quality in a product, service or process through the effective implementation of documented inspection and testing procedures.

Quality management. A management approach focused on the means to achieve product or service quality objectives through the use of its four key components: quality planning; quality control; quality assurance; and quality improvement.

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

State of licence issue (SOLI). The State that issues a licence according to Annex 1.

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.

PUBLICATIONS

(referred to in this manual)

ICAO PUBLICATIONS

Convention on International Civil Aviation (Doc 7300)

Annexes to the Convention on International Civil Aviation

Annex 1 — *Personnel Licensing*

Annex 6 — *Operation of Aircraft*
Part I — *International Commercial Air Transport — Aeroplanes*
Part II — *International General Aviation — Aeroplanes*
Part III — *International Operations — Helicopters*

Annex 9 — *Facilitation*

Annex 10 — *Aeronautical Telecommunications*
Volume II — Communication Procedures including those with PANS status

Annex 17 — *Security*

Procedures for Air Navigation Services (PANS)

Aircraft Operations (PANS-OPS, Doc 8168)

Volume I — *Flight Procedures*
Volume II — *Construction of Visual and Instrument Flight Procedures*

Training (PANS-TRG, Doc 9868)

Manuals

Human Factors Training Manual (Doc 9683)

Manual of Civil Aviation Medicine (Doc 8984)

Manual of Criteria for the Qualification of Flight Simulation Training Devices (Doc 9625)

Manual of Procedures for Operations Inspection, Certification and Continued Surveillance (Doc 8335)

Manual on Prevention of Problematic Use of Substances in the Aviation Workplace (Doc 9654)

Manual on the Approval of Training Organizations (Doc 9841)

Manual on the Implementation of ICAO Language Proficiency Requirements (Doc 9835)

Preparation of an Operations Manual (Doc 9376)

Safety Management Manual (SMM) (Doc 9859)

Safety Oversight Manual (Doc 9734)

Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284)

Training Manual (Doc 7192)

Universal Safety Oversight Audit Programme Continuous Monitoring Manual (Doc 9735)

Circulars

Aerodrome Flight Information Service (AFIS) (Cir 211)

Guidance on the Implementation of Article 83 bis *of the Convention on International Civil Aviation* (Cir 295)

Threat and Error Management (TEM) in Air Traffic Control (Cir 314)

PUBLICATIONS OF OTHER STATES OR ORGANIZATIONS

International Air Transport Association (IATA)

Flight Simulation Training Device Design and Performance Data Requirements, 7th ed.

Simulated Air and Ground Traffic Environment for Flight Training, Rev. 2.

Royal Aeronautical Society (RAeS)

The Aeroplane Flight Simulator Evaluation Handbook, Volumes I and II

Part I

GENERAL PRINCIPLES AND ORGANIZATION

Chapter 1

THE ACTION OF PERSONNEL LICENSING

1.1 GENERAL

1.1.1 The need to have proper authorization to carry out certain functions in aviation has been an accepted principle since the early days of aviation. The first pilot licence was issued in January 1909, only a few years after the first powered flight took place, and the first international licensing standards were published ten years later in 1919.

1.1.2 Today, the action of personnel licensing is based on principles laid down in the Convention on International Civil Aviation[1] and the International Standards and Recommended Practices (SARPs) contained in Annex 1 to the Convention.

1.1.3 The basic principles of personnel licensing established by the Chicago Convention are the following:

a) The State that has the responsibility for the licensing of flight crew is the State of Registry of the aircraft flown (Article 32 a). This responsibility can be transferred to the State of the Operator when an agreement under Article 83 *bis* of the Chicago Convention exists between the State of the Operator and the State of Registry;

b) A State can render valid, for use on aircraft on its registry, licences issued by other Contracting States (Article 32 a);

c) Contracting States recognize licences issued by other Contracting States provided that the licence is issued in full compliance with ICAO Standards and used on an aircraft registered in the State which has issued or validated the licence (Article 33);

d) A licence should be endorsed with the particulars on which the Standards are not met (Article 39); and

e) International flight by a holder of an endorsed licence shall be undertaken only with the permission of the States having jurisdiction over the airspace entered (Article 40).

1.1.4 In addition, the Chicago Convention contains several articles which are not exclusively directed at personnel licensing but which are, nevertheless, relevant:

a) Contracting States can, without causing unreasonable delay to aircraft on landing or departure, inspect certificates and other documents prescribed by the Chicago Convention (Article 16); and

b) Each State endeavours to follow ICAO Standards and procedures to the highest practicable degree and undertakes to notify ICAO of any difference which may exist between its practices and ICAO Standards (Articles 37 and 38).

1. Also referred to as the “Chicago Convention”.

1.2 DEFINITION OF PERSONNEL LICENSING

1.2.1 ICAO defines personnel licensing as follows: "A licence is the means by which a State authorizes a licence holder to perform specific activities which, unless performed properly, could jeopardize the safety of aviation. The licence provides evidence that the issuing State is satisfied that the holder has demonstrated an internationally acceptable degree of competency."[2]

1.2.2 The first part of the definition indicates clearly that personnel licences cover only activities that are critical to the safety of aviation. The second part of the definition indicates that the licence provides evidence of competency in that a licence holder has demonstrated the required combination of skills, knowledge and attitudes. However, the competency itself is the result of the selection and training and not of the licence.

1.2.3 Annex 1 specifies SARPs covering both minimum and broad requirements for personnel licensing. The aim of Annex 1 is to standardize practices and procedures so that States can issue licences based on a common standard. By accepting and adopting the provisions of Annex 1, each Contracting State will contribute to the idea expressed in Article 37 of the Chicago Convention which states that: "Each Contracting State undertakes to collaborate in securing the highest practicable degree of uniformity in regulations, standards, procedures and organization in relation to aircraft, personnel, airways and auxiliary services in all matters in which such uniformity will facilitate and improve air navigation."

1.2.4 In the sense in which it is used in Annex 1, licensing is the process of giving official authorization to a person to perform specific activities that are otherwise prohibited either by law or by custom and which, unless performed properly, could jeopardize the safety of international aviation. The licence provides evidence that the issuing State is satisfied that the individual licence holder has demonstrated an internationally acceptable degree of competency meeting the requirements of Annex 1 (except if otherwise endorsed). The action of licensing, therefore, consists in the granting of privileges to applicants who meet the prescribed requirements. The term "licence" is commonly used to describe the authorization given when the licensing processes have been completed. Those rights that the holder of a licence enjoys, and which are denied to unlicensed individuals, are referred to in Annex 1 as "privileges". Depending on the type of licence issued, these privileges may or may not have a time limitation imposed. They may or may not be limited with respect to the functions to be performed, and they may depend on certain conditions to be observed prior to the exercise of certain privileges. Such conditions, if they exist, can be termed the "obligations of the licence holder". It will be shown later how such obligations are usually expressed in a State's laws and regulations.

1.3 THE COMPONENTS OF A STATE'S PERSONNEL LICENSING SYSTEM

Before issuing or validating a licence, the State's Licensing Authority must satisfy itself that the applicant meets in all respects the standards of experience, knowledge and proficiency and other requirements so as to be competent to perform the functions authorized under the privileges granted by the licence. In addition, many licences require the applicant, or holder, to meet certain standards in regard to medical fitness. In order to carry out its responsibility for ensuring that the applicant meets all of these conditions, a State must establish its own licensing system. Such a system can vary considerably both in size and complexity, depending on the level and type of aviation activities of the State. However, each State's personnel licensing system, notwithstanding its size, is made of two basic components:

a) a regulatory structure; and

2. This definition is posted on the public Internet website of ICAO (http://legacy.icao.int/anb/FLS/flslicence.html) and has now been incorporated in this document.

b) an organization that has the authority and the technical capacity to put the regulation into effect.

Subsequent chapters will address in detail these two basic components of a State's personnel licensing system.

Chapter 2

THE LICENSING AUTHORITY

2.1 GENERAL

2.1.1 Depending on the size and complexity of a State's aviation activity and on its administrative structure, the functions of civil aviation administration will be articulated at levels which may be different from State to State. For instance, in some States, a separate Ministry of Civil Aviation may exist; in others, the civil aviation administration may be a department or a directorate in the Ministry of Communications, the Ministry of Transport, or another ministry, or may be a semi-autonomous authority. The organization with the responsibility for aviation administration is referred to throughout this document as the Civil Aviation Authority (CAA). The senior official, acting as head of the CAA, is often called the Director General of Civil Aviation or the Director of Civil Aviation and is referred to throughout this document as the "Director".

2.1.2 Annex 1 makes reference to a Licensing Authority which is "the Authority designated by a Contracting State as responsible for the licensing of personnel". In most States, the Licensing Authority referred to in Annex 1 is the Civil Aviation Authority. In such a case, the terms of reference of the Director should include responsibility for the licensing of aviation personnel involved in the operation or maintenance of aircraft registered in the State or providing air traffic control services. Normally, this responsibility is delegated, to a greater or lesser degree, to a licensing office acting under the Director which carries out the functions and administrative processes of issuing a personnel licence, rating or other certificate. The head of the Personnel Licensing Office is referred to throughout this document as the "Chief of Personnel Licensing".

2.1.3 In current CAA organizations, the Personnel Licensing (PEL) Office may be given different names such as training and licensing unit, section, department or division, Personnel Licensing Office or examining and licensing unit. In this manual the term "PEL Office" will be used when referring to the office responsible for the licensing functions and processes detailed in this manual.

2.1.4 Just as a CAA can be created at different levels and located in different places within a State's general administrative structure, so can the PEL Office be placed at different levels. Each State will have to establish the kind of structure that suits it best. Regardless of what organizational structure is decided upon, a PEL Office would be expected to carry out the functions and obligations described in 2.2.

2.2 TASKS OF A PEL OFFICE

2.2.1 General

2.2.1.1 To discharge its responsibilities, the PEL Office has to carry out many tasks which are normally organized around five major functional areas: examinations (flight crew, aircraft maintenance personnel, air traffic controller, etc.), licensing, training, regulatory and administration. In some States, the organizational structure is based on these functions. Other States may have different titles and different combinations of duties. However, each PEL Office needs to implement directly or indirectly these functions.

2.2.1.2 In addition, the PEL Office may be called to cooperate or assist in the investigation of an accident or an incident. This task is not further elaborated in this manual but usually falls within the five major functional areas described in 2.2.2 to 2.2.6, depending on the particulars of the investigation.

2.2.2 Examination tasks

Examination tasks are complex and require a high level of experience and expertise in the various areas of licensing (typically flight crew, aircraft maintenance personnel and air traffic controller). Executing the tasks also requires the highest degree of technical and ethical integrity as well as good judgement. Because such specialized, high-level skills are often scarce, some States use staff from the operations, airworthiness and air traffic control departments of the CAA to carry out examinations and, in particular, flight and practical tests. These staff members are CAA examiners who are trained, qualified and supervised for the conduct of examinations. The tasks related to the examination function may also be delegated externally, under the oversight of the CAA, to an organization or an appropriate person (a "designated examiner" with appropriate qualifications). The examination tasks include:

a) designing written examinations for flight crew members, aircraft maintenance personnel, air traffic controllers and ground operations personnel who intend to apply for the issue or renewal of licences or to add new aircraft types, ratings or authorizations to their licence;

b) reviewing, evaluating and marking written tests;

c) administering oral examinations of different specialities, as required;

d) administering flight and simulator tests followed by generating the required test reports;

e) administering practical tests as required for the different specialities and generating the necessary test reports;

f) coordinating with the Chief Medical Officer of the CAA those aspects related to medical examinations and the issuance of medical assessments, in compliance with Annex 1 provisions and supporting guidance in Doc 8984;

g) administering language proficiency examinations, as required; and

h) participating in committees or advisory groups to review and recommend improvements to examination syllabi, questions, practical tests and licensing matters.

2.2.3 Licensing tasks

Licensing tasks cover the routine tasks associated with the physical issuance and maintenance of personnel licences and include:

a) drafting detailed procedures for licensing staff both at head office and regional offices;

b) evaluating foreign licences and certificates, and military pilot qualifications, and taking appropriate action, including consultation with the State of licence issue (SOLI) as necessary;

c) reviewing the limitations and recent experience of flight crew members, maintenance personnel, air traffic controllers and ground operators and taking the necessary action;

d) reviewing and studying the application for a licence and related documentation and recommending actions to be taken by appropriate sections; and

e) issuing and renewing licences, adding ratings and issuing temporary approvals or special authorizations.

2.2.4 Training tasks

Training tasks cover the activities related to the certification, approval and surveillance of training organizations (or schools) and training programmes, as well as initial and continuation training delivery for CAA staff. These tasks include:

a) studying the PEL training standards and making the necessary recommendations for improvement of domestic and foreign training programmes and oversight;

b) developing and executing plans for the surveillance of different aviation training activities;

c) reviewing training curricula and programmes submitted for approval and taking appropriate action;

d) approving training organizations and training sections at operational and maintenance organizations, air traffic control units, manufacturers and other approved agencies as appropriate;

e) qualifying flight simulation training devices, conducting their recurrent evaluations and authorizing their use for defined training tasks;

f) exercising continued surveillance of approved training organizations, in cooperation with other Contracting States as necessary;

g) organizing the appropriate initial and recurrent training for CAA staff; and

h) establishing and maintaining personnel training records.

Note.— The organization of CAA staff training and the maintenance of training records in g) and h) can be managed by a separate training department of the CAA or can be shared among several CAA departments, as long as initial and recurrent training are appropriately conducted.

2.2.5 Regulatory tasks

Regulatory tasks cover the development and maintenance of the regulatory support of personnel licensing and include:

a) drafting and amending regulations and rules (or specific operating regulations) related to the training and licensing of aviation personnel;

b) enforcing licensing laws and regulations; and

c) developing procedures, taking into account best practices and applicable quality standards.

2.2.6 Administrative tasks

Administrative tasks include:

a) maintaining an up-to-date, efficient and secure record system for licensing, certification, designation, approval and authorization actions;

b) maintaining lists of CAA and designated examiners;

c) maintaining the PEL Office library;

d) providing supplies, equipment and facilities to the PEL Office;

e) maintaining currency of all regulatory material and PEL documents in use by staff;

f) drafting and promulgating examination schedules in cooperation with the Chief Examiner(s);

g) where paper examinations are provided, printing and collating examination papers and distributing them in order to meet the published scheduled times;

h) handling routine correspondence in respect of requests for matters such as study guidance material, dates of examinations, application forms and examination fees;

i) dealing with the public when necessary on matters related to:

   1) scheduled examinations;

   2) requests for explanatory pamphlets and queries related to examination administration;

   3) licence, rating, approval or examination applications; and

   4) requests for regulatory interpretation;

j) handling routine correspondence with respect to applications for licences or ratings, flight tests or other routine clerical matters;

k) processing all licence applications and preparing the material for review and action by technical licensing officers;

l) completing licence forms and preparing licences for official signature; and

m) managing the PEL Office computer system.

2.3 ORGANIZATIONAL STRUCTURE OF A PEL OFFICE

2.3.1 General

2.3.1.1 In order to function effectively, a PEL Office must be suitably organized and staffed with qualified personnel. The size of the office will depend on the scale of the aviation activity in the State and the number and types of licences to be issued. A small State can comply with the provisions of Annex 1 by scaling its activities to those licensing needs that it can accomplish within its available resources and by seeking assistance from other States or organizations to provide the services that may be currently beyond its resources. In a larger organization, the day-to-day work of the PEL Office may have to be carried out in separate regional areas.

2.3.1.2 To illustrate the wide range of possible organizations for a PEL Office, examples of organizational structures and functions for three different levels of activities are described below. Many PEL Office organizations will not be exactly as described but may lie somewhere in between the three examples below and exercise a unique combination of functions.

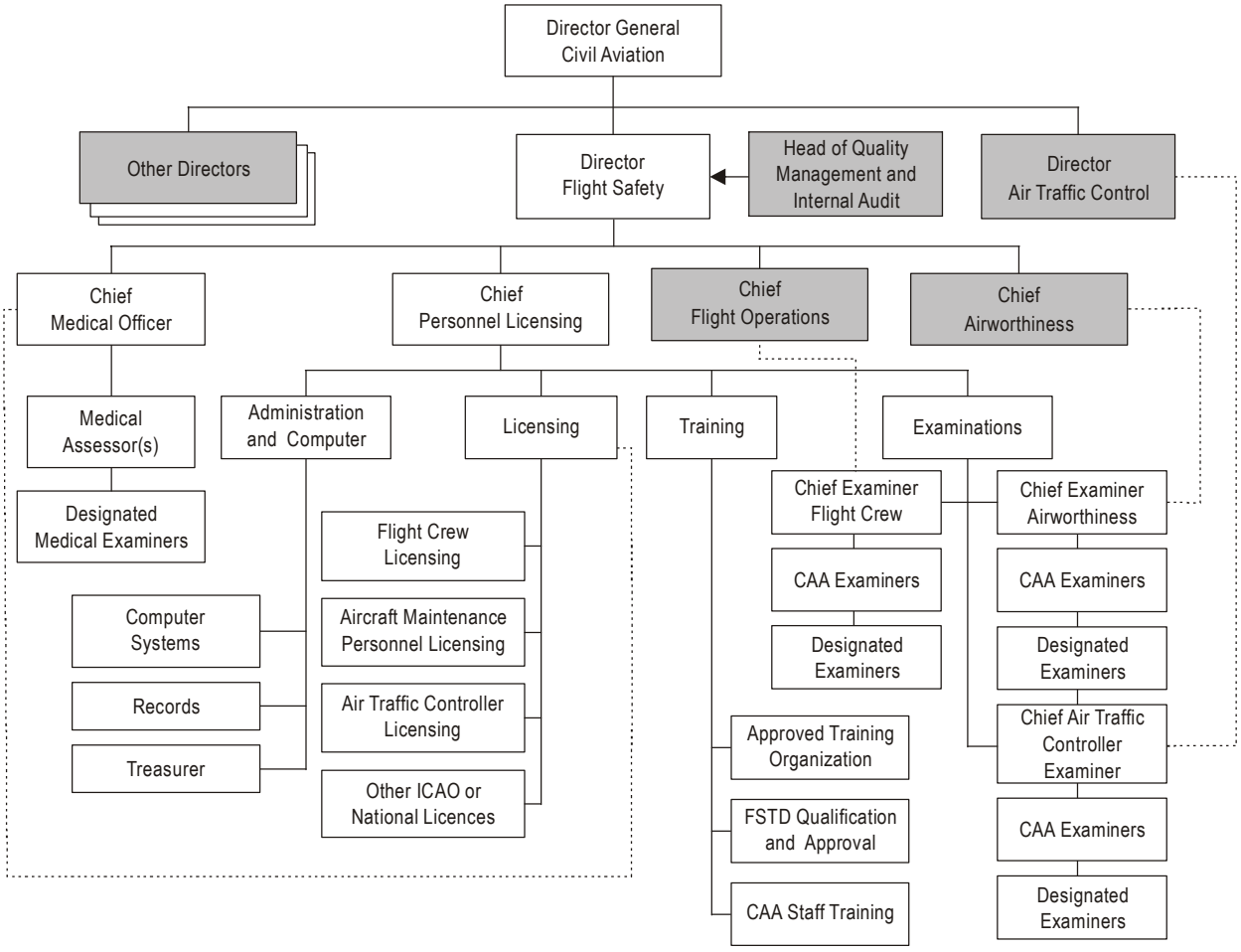

Figure I-2-1. The organizational structure of a typical large PEL Office and its relation to other CAA directorates and offices

2.3.2 Large PEL Office

2.3.2.1 The large PEL Office is an office that has the authority and the capacity to discharge all of the tasks and functions described in 2.2. This type of office is usually organized around these functional areas and may also have one or more regional offices. In such case, responsibilities may be shared: for example, the PEL Office headquarters may be responsible for developing policy and procedures regarding knowledge and skill requirements for licence applicants while regional offices may arrange flight or practical testing and actual examinations.

2.3.2.2 Figure I-2-1 illustrates the organizational structure of a typical large PEL Office and its relation to other CAA directorates and offices.

Note 1.— In this example, the regulatory tasks of the PEL Office mentioned in 2.2.5 are carried out by the Licensing, Training, Examinations, and Administration and Computer departments under Chief Personnel Licensing, as appropriate. The internal audit and quality control task mentioned in 2.6 should be carried out by another directorate of the CAA (e.g. quality management and internal audit).

Note 2.— A dashed line between two boxes in Figure I-2-1 indicates that close coordination is required between the functional areas represented by those boxes.

2.3.3 Medium-size PEL Office

The medium-size PEL Office may issue directly all licences[1] or, depending on the size and structure of its aviation industry, may issue some licence types by converting foreign licences. Some States have found it to be more efficient not to fully staff the various examination units but rather to rely on flight operations inspectors, airworthiness inspectors, air traffic control inspectors or delegated organizations/designated individuals to carry out some or all of the examination tasks. Medical assessments are usually outsourced to designated medical examiners, with oversight being provided by a medical assessor in the CAA. The generic functions of a medium-size PEL Office are the following:

a) Examination functions:

- written examinations (generated by the PEL Office or other approved source) to support directly issued licence types;
- flight or practical tests conducted by CAA examiners or designated examiners;
- medical assessments performed by designated medical examiners.

b) Licensing functions:

- detailed procedures for licence issuance, conversion or validation as required;
- system of appointment and supervision of designated examiners (for flight or practical tests and, in coordination with the Medical Office, medical assessments).

c) Training functions:

- approval of limited local training programmes;
- approval of foreign training programmes and training organizations (may be based on the approval by the State where the training is conducted);
- initial and recurrent training of CAA personnel, with related records (this function is coordinated with other Directorates).

d) Administrative and computer support functions:

- proper and secure record-keeping;
- provision of periodic examinations;
- maintenance of a library to include applicable current national and foreign PEL regulations and ICAO documents (SARPs and guidance material).

e) Laws and regulations required:

- aviation law empowering the CAA to develop, implement and enforce PEL regulations (including medical assessment regulations);
- high-level PEL regulations listing the licences, ratings, approvals, certificates and authorizations which can be issued by the State, together with their associated privileges;
- detailed PEL regulations providing the requirements to be met for issuing a licence, rating, approval, certificate or authorization, as well as the conditions for maintaining them valid. The

1. i.e. the related examinations are organized and provided locally.

regulations should also authorize the Director to convert to a national licence or to validate a licence issued by another Contracting State that meets ICAO Annex 1 and national requirements;
- detailed PEL regulations for conducting and issuing a medical assessment.

f) Main duties of staff:

- follow documented procedures for licence issuance;
- ensure that the foreign licences submitted for validation or for conversion are genuine, valid and meet ICAO requirements;
- understand the privileges and limitations of the foreign licences and ratings submitted for validation or conversion;
- establish the proper limitations to be attached to the validation or conversion of a foreign licence (e.g. privileges, expiry date);
- issue type ratings;
- keep proper records of all actions;
- appoint and oversee designated examiners;
- organize written and flight examinations for private pilot (aeroplane) licences and other licence types and ratings that are directly issued as well as medical assessments for all issued licences;
- renew licences and ratings (for licences of the expiring type);
- ensure compliance with laws and regulations;
- coordinate with the Chief Medical Officer for the conduct and issuance of medical assessments.

2.3.4 Small PEL Office

2.3.4.1 The small PEL Office's activities are generally limited to the validation of foreign licences. This situation is appropriate for States which have only a small air transport industry and no, or a very limited level of, general aviation activities. The main advantage of this type of organization is that the State does not have to establish any type of technically complex examination function requiring access to expertise and experience that may not be available locally. The small PEL Office does not approve training programmes or training organizations. The generic functions of a small PEL office are the following:

a) Examination functions:

- no written examinations are provided by the State other than for demonstrating knowledge of national air law.

b) Licensing functions:

- procedures are limited to those required for validating foreign licences.

c) Training functions:

- initial and recurrent training of CAA personnel, with related records.

d) Administrative support functions:

- proper and secure record-keeping.

e) Laws and regulations required:

- aviation law empowering the CAA to develop, implement and enforce PEL regulations (including medical assessment regulations);

- high-level PEL regulations listing the licences and ratings which can be validated by the State together with their associated privileges;
- detailed PEL regulations providing the requirements to be met for issuing a validation for a licence, which can be as simple as stating that a licence issued by another Contracting State and meeting ICAO Annex 1 requirements can be validated by the Director.

f) Main duties of staff:

- ensure that the licences submitted for validation are genuine and meet ICAO requirements;
- understand the privileges and limitations of foreign licences and ratings provided for validation;
- establish the proper limitations to be attached to the validation of a foreign licence (e.g. privileges, expiry date);
- keep proper records of all actions.

2.3.5 Medical Office

2.3.5.1 All large Licensing Authorities, and some medium-size ones, have a separate Medical Office to ensure that the necessary medical tests are performed and to conduct and issue medical assessments. The Medical Office is generally independent of the PEL Office although close coordination and liaison is required between the two. The Medical Office usually forms part of the Flight Safety Directorate as illustrated in Figure I-2-1.

2.3.5.2 The Chief Medical Officer (CMO) is the head of the Medical Office and, although reporting to the Director of Flight Safety, makes final decisions concerning the medical fitness of applicants. The CMO directs the preparation and review of detailed prescriptions and conditions related to the medical assessments for these applicants. The CMO also appoints medical assessors and medical examiners. In smaller organizations, the CMO may be the sole medical assessor.

2.3.5.3 Certain qualified and experienced physicians outside the Licensing Authority may be appointed as "designated medical examiners" (or similar term) to help meet the demand for medical assessments. Generally, the term "medical examiner" refers in this manual to either a CAA-employed medical examiner or to a designated medical examiner. A State that cannot justify the establishment of a Medical Office may delegate its medical functions to other States by accepting medical assessments issued by specified States. Guidance on procedures for small medical offices is contained in Part II, Chapter 8. The generic functions of a Medical Office are the following:

a) Examination functions:

- medical examinations conducted by medical examiners.

b) Certification functions:

- assessments issued by the medical examiners or medical assessor(s).

c) Training functions:

- competence of medical examiners to be demonstrated prior to their designation;
- initial and periodic refresher training to be provided to the medical examiners.

d) Administrative support functions:

- confidential medical records stored separately from other PEL records.

e) Laws and regulations required:

- detailed medical regulations implementing Annex 1 medical Standards, using the guidance contained in Doc 8984.

f) Main duties of staff:

- follow documented procedures for issuing a medical assessment;
- ensure all decisions are fully and properly documented and filed;
- appoint and oversee CAA-employed medical examiners and designated medical examiners;
- conduct audits of the medical assessments provided by medical examiners (e.g. based on sampling).

2.4 STAFFING AND QUALIFICATIONS OF KEY PERSONNEL

2.4.1 The granting of licence privileges to participants in the civil aviation system cannot be done satisfactorily if the qualifications of the person making the judgements are not at least equal to those required of the licence applicant. Some States may delegate some PEL activities to different approved personnel and/or organizations for assistance in certain specialties in order to fulfil those requirements which cannot be satisfactorily carried out by the PEL Office. In some States functions of some sections in the structure illustrated at Figure I-2-1 are achieved independently of the PEL Office. In small States, functions of the different sections illustrated in the structure may be combined together or contracted out. However, the minimum qualification of the key personnel in all PEL Offices should be:

a) The *Chief of Personnel Licensing* should have at least technical qualifications and expertise as a flight crew member or an airworthiness engineer or an air traffic control officer and a good understanding of the other areas of licensing concern. This individual should have a thorough knowledge of the licensing regulations, licensing practices and procedures, together with administrative ability and leadership qualities.

b) The *Head of the Examination Section* and the *Chief Examiners* should have extensive experience as an authorized examiner in a particular specialty as well as a thorough knowledge of licensing regulations, licensing practices and procedures, together with administrative ability and leadership qualities.

c) The *Head of the Licensing Section* should have extensive experience as an authorized person and/or licence holder in a particular specialty as well as a thorough knowledge of the licensing regulations, licensing practices and procedures, together with administrative ability and leadership qualities.

d) The *Head of the Training Section* should have extensive training experience as an authorized instructor in a particular specialty, as well as a thorough knowledge of the licensing regulations, licensing practices and procedures, together with administrative ability and leadership qualities.

e) The *Chief Medical Officer* should have extensive experience in regulatory civil aviation medicine as well as a thorough knowledge of medical requirements and medical best practice. This individual should have leadership qualities, administrative skills and the ability to make autonomous decisions concerning the medical fitness of applicants.

f) The *Head of the Administrative Section* should have extensive experience in business administration, as well as a thorough knowledge of the licensing regulations, licensing practices and procedures, together with leadership qualities.

2.4.2 Appendix A to this Part contains examples of the responsibilities of the Chief of Personnel Licensing, the Chief Examiner, the examiners, the training organization inspectors and various other personnel, as well as qualifications for some of those positions.

2.5 ADMINISTRATIVE SUPPORT PERSONNEL

Many of the tasks associated with personnel licensing are of an administrative nature. The qualifications required for administrative support personnel are similar to those of other administrative functions. Personnel should be familiar with office equipment and procedures. Administrative support personnel play an important role in the efficiency and integrity of a State's personnel licensing system. Therefore, it is essential to ensure that administrative support personnel have the personal integrity and required knowledge to discharge their responsibilities. Ideally, each new staff member should be trained on the specific tools and procedures of the PEL Office and be familiarized with the concept and rules governing personnel licensing. It is recognized that it is not always practical to provide formal training on the subject so that most of the administrative support staff receive their training on the job. Nevertheless, it is important to ensure that initial training is actually taking place, which could easily be verified by using a training checklist identifying all of the required training items. Upon satisfactory completion of each element of training, the checklist should be initialled by both the supervisor and the trainee.

2.6 STAFF TRAINING AND QUALITY CONTROL

2.6.1 In order to ensure the proficiency of the personnel licensing staff, States should establish training programmes to provide staff members with the initial, specific and recurrent training required in their specialties, along with special training on related standards and internal procedures, and special applications.

2.6.2 An internal quality audit and quality control system should be established to ensure that personnel licensing staff performance is at acceptable levels and that adherence to the State's standards and procedures is maintained.

2.6.3 A study of the average time required to perform each type of work should be made and should be reflected on the annual and monthly work plans to prevent overloading of individual staff members.

2.7 FACILITIES AND EQUIPMENT

2.7.1 The facilities and equipment of a PEL Office depend largely on the level of activity of the office. Notwithstanding the size, the facilities should meet the following requirements:

a) *Easy access by the public:* Whenever possible a section of the PEL Office should be totally segregated from the other offices of the CAA with an independent entry that permits access to the public with the minimum level of security possible. The public area should also include a sitting area where customers can fill in documents and forms, wait their turn or for their documents to be processed.

b) *Provision of a good working environment for the staff:* The PEL Office should also provide reasonably quiet surroundings for executing technical or other work demanding high concentration, such as preparing examination questions, etc. Ready access to documents should also be possible.

c) *Maintenance of confidential records in a secure way:* Most of the documents held in a PEL Office are of a confidential nature and appropriate measures should be taken to ensure the security of the documents and control access to them. This requires that the paper records be kept in lockable cabinets that should be located in a secure area. The right of access to the various documents, in electronic or paper format, should be defined for each staff member and appropriate supporting procedures put in place. This is especially true for examination material unless it is legally required to be in the public domain, and its confidentiality must be preserved at all stages from development, through production and distribution, to delivery.

2.7.2 A practical way to meet these conflicting requirements is to have the public and private areas of the PEL Office clearly segregated.

2.7.3 The licensing process requires extensive communication with applicants, operators, training organizations, service providers and Civil Aviation Authorities of other States. It is therefore essential that the PEL Office have easy access to phone (both national and international), facsimile and email facilities. An Internet connection is also necessary because it provides not only email capability but access to up-to-date information, such as foreign regulations and procedures, which is often needed during the licensing process. The development of a website providing all the relevant information (rules, procedures, fees, working hours, forms, addresses) can greatly improve the quality of service while reducing the workload for the staff.

2.8 RECORD-KEEPING

Note.— An example of procedures for implementing a record-keeping system in accordance with 2.8 is contained in Part II, Chapter 4, Attachment A.

2.8.1 Content and integrity of records

Each Licensing Authority should maintain records that support every licensing action taken by the Authority for each applicant or licence holder. The main characteristics of a good record-keeping system are:

a) *Completeness:* The records kept by the Licensing Authority should be sufficient to provide documentary evidence of each licensing action and allow the history of each licence issued to be traced.

b) *Integrity:* It is important to maintain the integrity of records by ensuring that they are not removed or altered without authorization. This usually requires that each record entered in the file is properly logged and that proper procedures exist to control access to the files. This applies to both paper and computerized records.

c) *Ready access for authorized personnel:* The information contained in the licensing records should be readily accessible to authorized staff of the entire Licensing Authority. This requirement may be difficult to reconcile with the requirement to maintain the integrity of the records so appropriate access procedures must be carefully designed and implemented.

2.8.2 Organization of records

2.8.2.1 Traditionally, the records held by a Licensing Authority included a written registry of personnel licences, complemented by individual files which contained a summary of all licensing actions taken and all the personal records

of the applicant, such as the medical assessment (excluding personal medical details), flight and written test results or correspondence in chronological order. Such a purely manual system may be adequate for States with a limited number of licences. However, when the number of active licences grows beyond a few hundred, a computerized system becomes necessary, either to complement or replace the paper-based records.

2.8.2.2 It is also important to maintain a backup system of records to ensure continuity in case of a major disaster. When the records are fully computerized, it is easy to back up the data on a regular basis (such as incremental backup on a daily basis and full backup on a weekly basis) and to securely store backup data offsite. If the record system is fully or partially paper-based, it may be very difficult to maintain a complete backup system and to keep it up to date. Nevertheless, a backup of essential information, such as the registry of personnel licences, including essential details of all licences and ratings issued, is still required.

2.8.3 Archiving of records

Each Licensing Authority must establish rules for archiving personal records that are non-active. It is recommended that inactive records be kept for at least five years before they are destroyed. The rule on archiving should also be consistent with the general archiving requirement of the State.

2.9 LIBRARY AND REFERENCE DOCUMENTATION

Examiners will require a set of the State's regulatory documents and access to a library of appropriate, current technical information. The Chief of Personnel Licensing and the Chief Examiners, instructors and inspectors of the PEL Office will require access to sets of ICAO documents and, as required, other States' regulatory material and other necessary technical documentation. It would be useful for appropriate aviation magazines to be circulated among technical officers.

Chapter 3

REGULATORY SYSTEM GOVERNING PERSONNEL LICENSING

3.1 RESPONSIBILITIES OF STATES

By becoming party to the Chicago Convention, each Contracting State accepts certain obligations and responsibilities. In the area of personnel licensing, the major responsibilities are derived from Articles 32, 33, 37, 38 and 39 of the Convention and can be summarized as follows:

a) the obligation to issue or validate the licence of flight crew operating aircraft on the State's Registry (Article 32);

b) the obligation to accept in its territory the licences issued or validated by other Contracting States when they are in full compliance with Annex 1 and when they are used on an aircraft registered in the issuing or validating State (Article 33);[1]

c) undertaking to follow to the highest practical degree the international standards, recommended practices and procedures (Article 37);

d) the obligation to notify ICAO of any difference between ICAO Standards and its own regulations and practices (Article 38); and

e) the obligation to endorse any licence which does not satisfy in full the applicable ICAO Standards with the list of particulars in which the conditions are not satisfied (Article 39).

3.2 ORGANIZATION AND CONTENT OF A STATE'S REGULATIONS

3.2.1 States are responsible for promulgating laws and regulations and for articulating rules (specific operating regulations) and procedures. The organization and hierarchy of the regulatory system depends on the legal system of the State, but is generally based on the following model used in this manual:

a) *laws* are at the highest or primary level of legislation. They are generally proposed by the government and adopted by the parliament;

b) *regulations* are at the second level of legislation and are generally promulgated at the ministerial level;

c) *rules* (specific operating regulations) are at the third level and are generally promulgated by the Director; and

1. Each Contracting State reserves the right to refuse to recognize, for the purpose of flight above its own territory, certificates of competency and licences granted to any of its nationals by another Contracting State (Article 32 b)).

d) *procedures* (also referred to as orders, instructions or acceptable means of compliance) are generally promulgated at the directorate level, under delegation by the Director.

Note.— The primary aviation legislation, which provides the basis for Critical Element CE-1 of a safety oversight system, includes the PEL laws and regulations in 3.2.1 a) and b) above. The specific operating regulations, which provide the basis for Critical Element CE-2 of a safety oversight system, include the PEL rules in 3.2.1 c) above. The technical guidance, tools and the provision of safety-critical information, which provide the basis for Critical Element CE-5 of a safety oversight system, include the PEL procedures in 3.2.1 d) above. Guidance on safety oversight systems is contained in Doc 9734.

3.2.2 A typical distribution of the various elements of a State's personnel licensing regulatory system among the different levels of legislation is illustrated in Table I-3-1. Actual distribution depends on the State's legal system. However, the following elements should be taken into consideration when preparing regulations and deciding the level at which they should be set:

a) The amendment procedure for the highest level (primary) legislation (laws) and second level (secondary) legislation (regulations) is often complex and lengthy. As a result, primary and secondary legislation and similar legal instruments are not appropriate for detailed regulations that have to be amended regularly to keep pace with the dynamic nature of civil aviation.

b) As a general principle, it is advisable to choose the lowest level of legislation appropriate to achieve the purpose of the requirement.

c) The authority to issue any level of legislation should be established by a higher level of legislation. For example, if the Director is empowered to make rules, this authority should be clearly stated in a regulation or a law.

d) The main elements of the regulatory system (i.e. at least the ICAO Standards) should be fully enforceable. Non-compliance with an enforceable regulation should be subject to criminal or administrative action. In many States, the lower level(s) of regulation (procedures, advisory and explanatory material) are established as guidance or to describe acceptable means of compliance to meet the requirements of a higher level of legislation. As a result, they are not necessarily enforceable as a means to achieve the objectives set out in primary legislation and regulations.

3.3 DEVELOPMENT AND MAINTENANCE OF REGULATIONS

3.3.1 Development and maintenance of the regulations required by a State's personnel licensing system is a complex and demanding process. This can be a challenge for smaller States or for those with limited technical and/or financial resources. States have three options for the development and maintenance of national regulations. The first option is to develop a complete set of regulations; the second option is to adopt ICAO Annex 1 as the national regulation governing Personnel Licensing; and the third option is to adopt regulations from another Contracting State. Each option has its own advantages and disadvantages, which are summarized in Table I-3-2.

Table I-3-1. Distribution of the various elements of a State's personnel licensing regulatory system among the different levels of legislation

Level of State regulation	*Corresponding ICAO documents*	*Basic content*
Laws or highest level of primary aviation legislation	Chicago Convention	A requirement that each flight crew member hold a licence issued or rendered valid by the State of Registry (or by the State of the Operator if an agreement exists under Article 83 *bis* of the Chicago Convention) to operate in the national airspace. Provisions for the adoption of licensing regulations consistent with the provisions of the Annexes to the Chicago Convention.
Aviation regulations or other primary aviation legislation	Annexes 1 and 6	Privileges attached to each licence, and authority for the Director to establish the requirements for the issuance of the licence. Authority given to the Director to: • develop, issue and amend rules (specific operating regulations), orders, procedures, bulletins, etc., consistent with the State's regulations; • grant exemptions from some requirements, as specified in the regulations, if the Director finds such actions would be in the public interest; • enforce the licensing regulations; • issue, amend, renew, cancel, suspend or validate personnel licences, ratings, authorizations or approvals; • make provision for authorized personnel to have access, as necessary, to such places and/or documents, at any time and without restriction, to carry out personnel licensing functions as provided for in the State's regulations; • delegate authority for licensing functions to CAA staff and to other personnel, operators, maintenance organizations and training organizations; • take any necessary steps to stop authorized or licensed personnel and organizations (e.g. operators, maintenance organizations, training organizations) from conducting unsafe civil aviation activities; and • make agreements with other Civil Aviation Authorities or service providers to delegate some of the Licensing Authority functions whenever necessary.
Rules or specific operating regulations	Annex 1 and guidance material	Detailed requirements for the issuance of licences and ratings. Requirements for approval of training organizations and training programmes.
Procedures	Guidance material	Flight test guides. Personnel licensing procedures manuals. Advisory circulars.

Table I-3-2. Advantages/disadvantages of three options for the development and maintenance of national regulations by States

Options	*Advantages*	*Disadvantages*
Nationally developed regulations	• Regulations are tailored to the national requirements and to the national legal system. • Changes can be initiated if and when required. • ICAO Annexes, model regulations and/or foreign regulations can be used as the basis for national regulations.	• Development of national regulations requires significant technical expertise. • The regulatory system needs to be kept up to date and aligned with ICAO Annexes.
Adoption of ICAO Annexes	• National regulations can be limited to a short text enabling ICAO Annex 1, supported by complementary regulations (see next column). • National regulations are updated automatically by changes made to the Annexes, though the changes must be monitored to ensure that no additional complementary regulations are required.	• It is necessary to develop and maintain complementary regulations because Annex 1 does not cover all aspects of Personnel Licensing or provide options for the State to define (see Table I-3-3). • The regulations have to explicitly state each Annex 1 Recommended Practice that is adopted by the State and each Recommended Practice that is not. • There is a need to promulgate enforcement regulations (not included in Annex 1), duly considering that the ICAO Annexes, because they are written as Standards, may be difficult or even impossible to enforce as regulations. • There is a need to ensure that the CAA and the users are familiar with and have access to the current version of Annex 1. • The ICAO Annexes represent minimum requirements that are not tailored to specific national requirements, which then have to be identified and promulgated in complementary regulations. • The ICAO Annexes may need to be translated into the national language(s) to ensure understanding by all parties.
Adoption of regulations of another State	• National regulations can be limited to a short text enabling the regulations of another State. • National regulations are updated automatically by changes made to the supporting regulations.	• The foreign regulations may need to be translated into the national language(s) to ensure understanding by all parties. • The foreign regulations are not tailored to specific national requirements, which have to be identified and promulgated in complementary regulations. • The foreign regulations may be overly complex for the needs of the State. • Some of the provisions may not be able to be implemented due to local conditions. • There is a need to ensure that the CAA and the users are familiar with and have access to the current version of the supporting regulations.

Table I-3-3. Complementary regulations that need to be developed and maintained in order to implement Annex 1

*Annex 1 reference**	*Complementary regulations*
All Recommended Practices	Express in the regulations each Recommended Practice that is adopted by the State and each Recommended Practice that is not.
1.2.2.1	Establish conditions for validation of a foreign licence.
1.2.3	Limit the privileges to those granted by the licence.
1.2.4.4	Designate medical examiners who are qualified and licensed in the practice of medicine.
1.2.5.1	Establish requirements for recent experience and demonstration of continued competency.
1.2.8	Establish requirements for approval of training organizations and training programmes.
2.1.1.3.1, 3.1.1.1 and 4.1.2	Determine the manner in which the knowledge and skill requirements for the issue of licences and ratings shall be demonstrated.
2.1.3.2 c)	Establish a list of single-pilot aircraft that require a type rating.
2.1.5.2 c)	Determine the extent of ATPL knowledge required by a CPL holder seeking a type rating on a multi-crew aircraft.
2.1.6	Approve the use of a flight simulation training device for the acquisition of experience and the demonstration of competence.
2.2.1	Establish the requirement that shall be met by student pilots.
2.3.3.1.1, 2.3.4.1.1, 2.4.3.1.1, 2.4.4.1.1, 2.4.5.1.1, 2.6.3.1.1, 2.6.4.1.1, 2.6.5.1.1 and 3.3.1.3.1	Determine what credit can be given to the applicant for experience as a flight crew member under instruction in a flight simulation training device.
2.3.3.1.1.1, 2.3.4.1.1.1, 2.4.3.1.2, 2.4.4.1.2, 2.4.5.1.3, 2.6.3.1.2, 2.6.4.1.2, 2.6.5.1.3 and 2.9.1.3.1.1	Determine what credit can be given to the applicant for experience as a pilot of aircraft in other categories.
3.2.1.3.1.1 and 3.3.1.3.1.1	Determine what credit can be given to the applicant for experience as a pilot.
4.3.1	Determine appropriate measures to ensure that student air traffic controllers do not constitute a hazard to air navigation.
4.5.2.2.3 and 4.5.2.4	Determine what credit can be given to the applicant holding an air traffic controller rating in another category or seeking concurrent issuance of two ratings.
Chapter 5	No regulation required but there is a need to implement the requirements of Chapter 5.
Appendix 2**	Require, as part of the State safety programme, that an approved training organization, which is exposed to safety risks related to aircraft operations during the provision of its services, implement a safety management system acceptable to the State that, as a minimum: a) identifies safety hazards; b) ensures the implementation of remedial action necessary to maintain agreed safety performance; c) provides for continuous monitoring and regular assessment of the safety performance; and d) aims at continuous improvement of the overall performance of the safety management system.

* The references to Annex 1 are based on the eleventh edition up to and including Amendment 170.

** The safety management requirements of Appendix 2 will be transferred to new Annex 19 — *Safety Management* in November 2013.

3.3.2 One of the options described in 3.3.1 is the incorporation of Annex 1 into the national regulations. It is an attractive option because it ensures full compliance with international standards. However, as indicated in Table I-3-3, there is a need to develop and maintain complementary regulations because Annex 1 does not cover all aspects of personnel licensing.

3.3.3 Notwithstanding the way national regulations are developed, the following points should be taken into consideration:

a) There is a need to include the users during the development of new regulatory instruments. The advantages are many: it ensures that all aspects and consequences of a new regulation are fully taken into account before it is enacted; it alleviates implementation problems and it ensures that the users are familiar with the new regulation when it is implemented.

b) If a State adopts a system of exemptions from its requirements, the items that could be exempted should be clearly identified in its regulations, and conditions and procedures for exemptions should be explained in its official CAA procedures manuals. Exemptions shall not be issued that permit deviation from ICAO Standards without the previous notification of a difference to ICAO and assessing the resulting impact on the international recognition of the licences and ratings. Any licence affected by an exemption that deviates from Annex 1 Standards shall be endorsed in accordance with Article 39 of the Chicago Convention.

c) It is recommended that clear and concise explanatory material be published to explain the rationale behind the law, regulations and rules.

d) The language used should be clear and concise.

e) When regulations, rules and procedures are published in a language other than English, it is useful to prepare an English translation to allow for easier international communication.

f) Mandatory clauses are denoted by the use of "shall", whereas "should" is used in the text to introduce permissive or recommended clauses.

g) Where reference is made to a document, such reference should be taken to refer to the current issue (up to and including the latest amendment thereto).

h) The numbering system used should be well defined to ease the search and reference process.

i) A detailed table of contents should be provided to list the subjects covered.

j) For original issue of a new section, each page of that section should be identified by the date of issue.

k) Amendments to an existing section should be identified by a revision or amendment number and date on each amended page of that section.

l) Whenever a document has sections or parts amended, a list of effective pages should be provided with the document. Each page of the document should be listed along with its revision number and date.

m) It is preferable to mark the amendment made in any paragraph, page or section by some means in order to facilitate comparison and compliance.

n) Any new issues or amendments promulgated should define an effective date of applicability.

3.3.4 Finally, regulations should be regularly updated to keep them relevant to developing trends and in particular to amendments to the Annexes to the Chicago Convention.

3.4 DIFFERENCES BETWEEN NATIONAL REGULATIONS AND THE REQUIREMENTS OF ICAO ANNEX 1

3.4.1 General

Article 38 of the Chicago Convention requires each State to notify ICAO of any difference between ICAO Standards or procedures and its own regulations and practices. In turn, ICAO publishes the differences in a Supplement to Annex 1 to allow other States to be aware of such differences. In the past, the Supplements were published in hard-copy format making it difficult to keep the information current. Starting in 2012, the differences to Annex 1 will be submitted electronically by States, and the Supplement will be published online (see 3.4.2 below), facilitating the publication of differences in a timely manner and ensuring that they are current and in line with the latest Annex amendment.

3.4.2 Determination of differences and notification to ICAO

3.4.2.1 Guidance on what constitutes a difference and how it should be notified to ICAO is published by ICAO in the “Note on Notification of Differences” which is attached to the ICAO State letter advising States of the adoption of an Annex amendment. There are two methods for notifying differences to ICAO: the old method which consists of a written notification by States using a printed form (which is to be discontinued in 2012 after a transition period) and a new electronic notification method (with a written, signed confirmation) that became operational in March 2011. Both methods are described in Appendix B, which also contains a generic version of the Note on the Notification of Differences. Although the “Note” addresses the notification of differences or compliance following the adoption of an amendment to Annex 1, it applies equally to the situation where differences exist because of changes in the national regulations. In the case of an amendment to Annex 1, the notification should reach ICAO as soon as practicable but not later than 30 days before the amendment becomes applicable (usually this is 6 to 8 months after it has been adopted). In the case of differences generated by changes in the national regulations, Article 38 of the Chicago Convention specifies that the notification should be made immediately.

3.4.2.2 The Director should clearly define the responsibilities of CAA personnel tasked to analyse any amendment to ICAO SARPs or to national regulations and to identify differences between ICAO SARPs and the national regulations. The Director should implement the corresponding procedures for the review of ICAO State letters related to amendments to Annexes, for the filing of differences, as necessary, and for the eventual timely inclusion of ICAO Annex amendments in the national regulations.

3.4.3 Impact of differences on the international recognition of licences

As stated in Chapter 1, Articles 33, 39 and 40 of the Chicago Convention address the impact of differences on the international recognition of licences. The basic concept contained in these three articles is that international recognition of a licence is conditional on the licence holder meeting all applicable ICAO minimum Standards. When a State has regulations that are more demanding than ICAO Standards, this must be reported to ICAO, subject to 3.4.2 above, but such licences are recognized internationally under the Chicago Convention because they meet all the applicable minimum ICAO requirements.

3.4.4 Situations where there is a need to make an assessment of differences

The status of differences between national regulations and ICAO Annex 1 should be assessed each time:

a) a change is made to national personnel licensing regulations. It is recommended that the assessment be made as part of the regulation process to ensure that compliance with ICAO Standards remains a high priority; and

b) ICAO amends Annex 1. The formal notification letter from ICAO, which is sent a few months before the amendment comes into force, provides instructions on how and when to notify ICAO of any differences.

3.5 ENFORCEMENT OF REGULATIONS

3.5.1 Compliance with regulations is an essential part of the civil aviation safety system. Most users understand the need for, and the purpose of, regulations and accept them without question. However, compliance is not universal and there will be cases where enforcement action is required. An important element of any regulatory system is the knowledge that regulations will be enforced in a consistent, firm and fair manner. Therefore, there is a need for a Licensing Authority to develop an effective enforcement mechanism.

3.5.2 Distinction is generally made between administrative and criminal enforcement actions. Administrative enforcement is generally at the Licensing Authority level whereas criminal enforcement action is taken through the court or judicial system.

3.5.3 Typical offences are failure to comply with civil aviation regulations. These offences are usually dealt with by the Director, through administrative action, by employing his or her authority to impose a civil penalty, such as a fine, or to suspend, revoke or modify an aviation document, such as a licence.

3.5.4 More serious offences generally arise from breaches of the primary legislation and are usually handled by the CAA through the courts. This section deals with administrative enforcement only.

3.5.5 Any enforcement system requires the following components:

a) *Clearly defined authority:* The authority of the person in charge of enforcing the regulation should be clearly established in the regulation itself or in a higher level legal document. Such person is usually the Director.

b) *A clearly defined process within the CAA:* The issue, once identified, must be raised through the management chain to bring it to the attention of the Director with full details so that action can be taken.

c) *Clearly defined enforcement measures:* The enforcement measures that can be taken should be clearly established and would normally include the authority to:

1) suspend, revoke or cancel licences, ratings, authorizations or approvals;

2) preclude a person from taking an examination or from applying for a licence, rating, authorization or approval for a given period of time; and

3) administer civil penalties. Although it may not be allowed by the legal system of some States, the authority to levy a fine is often a very useful enforcement tool because it may not always be practical or appropriate to suspend a licence, a rating, an authorization or an approval.

d) *Consistent, fair and firm application of enforcement measures:* This would normally require that procedures be established to provide the following:

1) guidelines on the type of enforcement action that is appropriate to the offence;

2) a process for the individual who is being investigated to present his or her case; and

3) timely action to ensure investigations are conducted without undue delay. The principle of "justice delayed is justice denied" is applicable.

3.6 ADVISORY CIRCULARS, AERONAUTICAL INFORMATON CIRCULARS AND NOTAM

From time to time, it will be necessary to publish administrative details such as examination schedules, proposed changes to orders and other licensing matters. This can be done by advisory circulars or aeronautical information circulars (AICs) or, if sufficiently important and requiring rapid promulgation, by NOTAM. Circulars on licensing matters may be a separate set of publications or may be issued within the AIC's general framework. In the latter case, it is a good practice to enumerate them in a separate sequence of numbers, or to give them some other easily recognizable indicator, such as coloured pages, to allow readers a quick reference to the circulars containing PEL matters. Information circulars may be consolidated with the State's aeronautical information publication (AIP). For example, information regarding licensing matters affecting foreign licence holders may be included in a State's AIP.

3.7 EXPLANATORY PAMPHLET

A CAA may consider publishing an explanatory pamphlet detailing the process for applying for a licence and listing all relevant documentation the applicant will need to be aware of to complete the process, with details of the publication and availability of relevant application forms. The pamphlet could be published on the CAA public website. Such a document should specify that it is for information only and may need updating whenever changes are made to the process. It should also state clearly that it is only an information guide.

3.8 USEFUL WEBSITES FOR STATE REGULATIONS, ORDERS AND ADVISORY CIRCULARS

Many States have their laws, regulations, rules, orders, instructions, advisory circulars and other information and safety bulletins published online. Listed below is a selection of some useful websites that were readily available at the date of publication of this Part:

a) The European Aviation Safety Agency (EASA) site: http://www.easa.europa.eu/ws_prod/index.html.

The document overview page is at: http://www.easa.europa.eu/regulations/regulations-structure.php, where the Basic Regulation EC216/2008 and various other rules and documents can be accessed. Use the menu "Legislation" at the top for other options.

The EASA Operations Evaluation Board (OEB) library of supporting documents can be accessed at: http://www.easa.europa.eu/certification/experts/OEB-reports.php.

b) The United States of America Federal Aviation Administration (FAA) site: http://www.faa.gov/.

The document page is at: http://www.faa.gov/regulations_policies/. The FAA has also developed model regulations which can be found at: http://www.faa.gov/about/initiatives/iasa/model_aviation/.

c) The Transport Canada site: http://www.tc.gc.ca/.

The document page is at: http://www.tc.gc.ca/eng/civilaviation/regserv/cars/menu.htm.

d) The United Kingdom Civil Aviation Authority site: http://www.caa.co.uk/.

e) The Australian Civil Aviation Safety Authority site: http://www.casa.gov.au/.

The document page is at: http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_90900.

f) The New Zealand Civil Aviation Authority website: http://www.caa.govt.nz.

Legislation and rules are at: http://www.caa.govt.nz/rules/rules.htm.

g) The South African Civil Aviation Authority site: http://www.caa.co.za/.

3.9 ICAO PROVISIONS

3.9.1 ICAO provisions and other relevant documents are normally maintained in the PEL Office library (as described in the administrative tasks of Chapter 2, 2.2.6), using appropriate procedures.

3.9.2 Each Contracting State is provided with a minimum of two copies of each ICAO document. In addition, Contracting States have access to the website, ICAO-Net, which contains an electronic library of all ICAO current documents, with the exception of restricted documents. The website is at: http://portal.icao.int.

3.9.3 Individuals or organizations can purchase ICAO documents in printed or electronic version. The price and conditions are available on the ICAO public website at http://www.icao.int.

3.9.4 Most ICAO documents are available in the Arabic, Chinese, English, French, Russian and Spanish languages.

Chapter 4

WHICH ACTIVITIES REQUIRE A LICENCE?

4.1 ICAO LICENCES

4.1.1 What is an ICAO licence?

The aviation community often makes reference to an “ICAO licence”, which has led some people to believe that ICAO actually issues licences. This is not the case. The term “ICAO licence” is an informal but widely used way of referring to licences that are issued by Contracting States on the basis of the SARPs contained in Annex 1. In the context of this manual, this includes all the personnel licences for which provisions exist in that Annex.

4.1.2 Licences for flight crew members

4.1.2.1 Article 32 a) of the Chicago Convention requires flight crew members of every aircraft engaged in international civil aviation operations to be provided with a licence issued or rendered valid by the State of Registry. As a result, States are required to issue flight crew licences as soon as they have aircraft on their registry. That is not to say that States have to implement all the classes of licences provided for in Annex 1; they need implement only the licences that are required to support their own national aviation activities. For instance, States that do not permit glider or free balloon activities for lack of gliders or free balloons on their registry or for other reasons do not need to establish the corresponding licence.

4.1.2.2 The flight crew licences provided for in Annex 1 are:

a) licences for pilots (Annex 1, Chapter 2)

   1) private pilot licence (aeroplane, airship, helicopter and powered-lift categories);

   2) commercial pilot licence (aeroplane, airship, helicopter and powered-lift categories);

   3) multi-crew pilot licence appropriate to the aeroplane category;

   4) airline transport pilot licence (aeroplane, helicopter and powered-lift categories);

   5) glider pilot licence; and

   6) free balloon pilot licence.

b) licences for flight crew members other than pilots (Annex 1, Chapter 3)

   1) flight engineer licence;

   2) flight navigator licence; and

3) flight radiotelephone operator licence.

Note.— When an applicant complies with the flight radiotelephone operator licence requirements, this may be endorsed on a licence already held by the applicant or may lead to the issue of a separate licence as appropriate.

4.1.2.3 Annex 1 also provides for a series of ratings (category, class, type, instrument and instructor) that complement the flight crew licences.

4.1.3 Licences for personnel other than flight crew members

4.1.3.1 Annex 1 includes requirements for the following licences for personnel other than flight crew members:

a) aircraft maintenance licence (technician/engineer/mechanic);

b) air traffic controller licence and associated ratings;

c) flight operations officer/flight dispatcher licence; and

d) aeronautical station operator licence.[1]

4.1.3.2 Ground personnel licences are of a different nature than flight crew licences because holding a ground personnel licence is not a requirement of the Chicago Convention, unlike the requirement under Article 32 for flight crew licences. The provisions for ground personnel licences were developed as part of the mandate to develop international standards under Article 37 of the Chicago Convention. The objective of such standards is to secure "the highest practicable degree of uniformity in regulations, standards, procedures, and organization in relation to aircraft, personnel, airways and auxiliary services in all matters in which such uniformity will facilitate and improve air navigation".

4.1.3.3 Because of the different nature of ground personnel licences, Annex 1 provides alternatives to licensing of ground personnel. The conditions are specific to each licence and are summarized in Table I-4-1.

Table I-4-1. List of conditions under which a ground personnel licence is not required

Licence	*Conditions*
Air traffic controller	State employees do not need a licence (Annex 1, 4.4.1).
Aircraft maintenance (technician/engineer/mechanic)	A licence is not required for personnel working within an approved maintenance organization (Annex 1, 4.2.2.4).
Flight operations officer/flight dispatcher	A licence is not required when the dispatch system approved by the State does not call for the use of a licensed flight dispatcher (Annex 6, Part I, 10.2, or Part III, Section II, 8.2).
Aeronautical station operator	The State may authorize individuals to operate as an aeronautical station operator without a licence (Annex 1, 4.7.1.1).

1. This licence is intended for personnel providing communication service between aircraft and ATC in areas where HF communications are used. It is not intended for personnel providing aerodrome flight information service (AFIS) for which no licensing requirements exist. ICAO has published guidance on the qualifications to be met by AFIS personnel in Circular 211.

4.1.3.4 It is important to note that in those cases where a licence is not required, Annex 1 requires that individuals exercising the licence privileges must meet the same requirements as their licensed counterparts. This is consistent with the basic licensing philosophy of ICAO where the licence is a means to provide evidence of competency but where the competency itself is the result of training.

4.2 NON-ICAO LICENCES

4.2.1 General

The Chicago Convention and Annex 1 requirements do not cover all activities and, when they do, the requirements apply only to international operations. To cover activities that are not addressed by ICAO, States may decide to establish licences on a national basis. These national licences are sometimes referred to as “non-ICAO licences”.

4.2.2 How to decide whether an activity requires a licence

4.2.2.1 A State’s decision to require a licence for a specific activity depends to a large extent on cultural, industrial and social considerations specific to each State. In practice, significant variations exist between States in the number and scope of “non-ICAO licences”. Some States issue only ICAO licences while others issue licences for a number of categories of personnel not covered by Annex 1.

4.2.2.2 In addition to cultural and social aspects, there are technical considerations which must be taken into account in making the decision to establish a licence for a specific activity, as outlined below.

4.2.2.3 The ICAO definition of personnel licensing contained in Chapter 1, 1.2, stresses that the licence should cover safety-critical functions and provide evidence of competency. These are the two basic criteria used to assess whether a specific aviation activity requires licensed personnel. A personnel licence is required when the person is involved in an activity that is critical to the safety of civil aviation and when there is a need to provide evidence of competency in the form of a licence.

4.2.2.4 *Assessment of the criticality of a function to the safety of aviation:* It is generally accepted that safety-critical functions are functions covering activities where uncorrected errors have an immediate and negative effect on safety. These are generally functions undertaken by personnel who are on the last line of defence in the system such as flight crew members, air traffic controllers and aircraft maintenance personnel.

4.2.2.5 *Assessment of the need to provide evidence of competency in the form of a licence:* This is usually a more controversial issue where the cultural and social considerations previously mentioned come into play. The purpose of personnel licensing is to provide evidence that safety-critical personnel are properly trained and competent, yet alternatives to personnel licensing to provide such evidence do exist. Such is the case for personnel working in an established structure such as a commercial air transport operator, an approved maintenance organization, an aerodrome or an air traffic control service provider. These organizations are usually certified or approved by the CAA and subject to strict surveillance. The condition of certification or approval invariably requires the organization to ensure that its safety-critical personnel are properly qualified and trained. In such situations, the CAA may determine that it is unnecessary to require a licence because it has the means of ensuring that safety-critical personnel of these organizations are properly qualified through its own certification/approval and surveillance systems.

4.2.2.6 On the other hand, there are situations in which there is a need to provide evidence of competency in the form of a licence. The most common situations are:

a) when required by the Chicago Convention (see 4.1.2 of this chapter);

b) for personnel who may practice their activity outside an established structure and/or who may have to work in places far away from that structure (such as flight crew members or some aircraft maintenance personnel); and

c) when the criticality of the function is such that the redundancy of having evidence of competency through a licence and through the established structure is deemed necessary. This is the case for flight crew members.

4.2.3 Typical non-ICAO licences

4.2.3.1 In spite of the differences that might exist among Contracting States regarding the issuance of non-ICAO licences, such licences can be grouped into three different categories.

Recreational flying activities

4.2.3.2 The ICAO requirements for the private pilot have been designed to ensure that the holder of such a licence is competent to undertake international flight. Several States find that the need exists for a less demanding pilot licence for people who seek flying privileges only for local recreational activities on ultralight aircraft or on simpler general aviation aeroplanes. In such cases, States generally issue licences which are based purely on national requirements and which can be used only in their national airspace.

4.2.3.3 As an alternative to issuing non-ICAO licences, some States have delegated the supervision of recreational activities to independent governing bodies such as an aerial sport federation. These governing bodies have the responsibility of ensuring that pilots are and remain competent, generally through a set of training requirements and a system of authorization. The delegation of supervision can include gliding and ballooning activities for which ICAO licensing Standards exist. The advantage of this arrangement is that it reduces the administrative burden of a complete licensing system. The disadvantage is that authorizations issued by the governing body under delegation by a State are valid only in the national airspace of that State.

Aircraft categories not included in Annex 1

4.2.3.4 In some cases, the volume and type of activities conducted by States with a specific category of aircraft are not sufficient to justify the development of international licensing Standards for their flight crews. Typical examples are the small airship[2] or gyroplane. In such a situation, a State may issue a national licence, but because the licence is not recognized internationally, the licence holder must obtain the authorization of each of the States whose airspace is used, before entering such airspace.

Activities not covered by ICAO licensing Standards

4.2.3.5 As indicated earlier, some States issue licences for a large number of categories of personnel. Paragraph 4.2.2 above provides some guidance on how to decide whether a specific activity requires a licence. It is also worth noting that ICAO Annexes require some categories of personnel to meet some international training standards even though a licence is not required. A good example is the safety function of cabin crew members for which training and competency requirements exist in Annex 6 but for which no licensing requirement exists.

2. An airship of a volume of 4 600 cubic metres or less.

4.2.4 Status of non-ICAO licences

Non-ICAO licences, whether they are issued directly or through delegation of supervision, do not benefit from the international recognition provided by the Chicago Convention and, consequently, are valid only in the airspace of the issuing State. International flights with such licences can be undertaken only with the authorization of those States whose airspace is used. It is therefore important that the issuing State ensure that the licence holders are fully aware that their licences are valid only in the State's national airspace and, because domestic activities and international flights often share the same airspace, ensure that the domestic activities do not constitute a hazard to international aviation.

Chapter 5

MEDICAL ASSESSMENT

5.1 GENERAL

5.1.1 Licences for pilots, certain other flight crew members and air traffic controllers may not be used for carrying out aviation duties unless the licence holder is medically fit. Evidence that a licence holder has met specified medical requirements is provided in various forms:

a) Many Contracting States issue medical certificates, valid for a limited period only, and designed to be kept together with the licence. The medical certificate may be issued by the CMO or, under delegation, by the medical examiner. The licence itself has usually a longer period of validity, sometimes for life, or to the date when the licence holder reaches the upper age limit specified in the national regulations for the type of licence held.

b) Other States endorse aviation licences with the date of the medical examination and the word “passed”, thus rendering the licence valid for a limited period until the next medical examination is due.

c) Some States issue aviation licences only to applicants who have passed a medical examination, where the validity period of the licence is the same as for the medical examination. Evidence of meeting the medical requirements is then the licence itself. When such a licence expires, a new one is issued, provided the holder is still medically fit.

5.1.2 The process of establishing and issuing evidence that guarantees that a licence holder has met specified medical requirements is frequently called “medical certification”, but the different administrative methods in use by Licensing Authorities mean that this particular term is not universally applicable. Therefore, ICAO defines the term “medical assessment” as “the evidence issued by a Contracting State that the licence holder meets specific requirements of medical fitness”.

5.1.3 To avoid confusion and misunderstanding, the term “licence” is used to refer solely to the document that provides evidence of the technical competency of the holder, and the term “medical assessment” is used to refer to a medical certificate (in cases where such a document is issued), an endorsement of a licence to the effect that the holder meets the medical requirements, or an aviation licence when medical fitness is implied in holding a valid licence.

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

5.1.5 Even if they have a current medical assessment, licence holders shall not exercise the privileges of their licences at any time that they are aware of any decrease in their medical fitness which might render them unable to safely and properly exercise those privileges. Therefore, it is important that Licensing Authorities also provide licence holders with clear guidelines on medical conditions that may be relevant to flight safety.

5.2 CLASSES OF MEDICAL ASSESSMENTS

5.2.1 The different medical requirements to safely exercise the privileges of different licences have been recognized by providing three classes of medical assessment as follows:

a) *Class 1 medical assessment,* which applies to applicants for, and holders of:

1) commercial pilot licences (aeroplane, airship, helicopter and powered-lift categories);

2) multi-crew pilot licences (aeroplane category); and

3) airline transport pilot licences (aeroplane, helicopter and powered-lift categories).

b) *Class 2 medical assessment,* which applies to applicants for, and holders of:

1) flight navigator licences;

2) flight engineer licences;

3) private pilot licences (aeroplane, airship, helicopter and powered-lift categories) and to student pilots flying solo;

4) glider pilot licences; and

5) free balloon pilot licences.

c) *Class 3 medical assessment,* which applies to applicants for, and holders of, air traffic controller licences and to student air traffic controllers receiving instruction in an operating environment.

5.2.2 For each of the above classes of medical assessment, the two basic principles when assessing an applicant's medical fitness for aviation duties are that:

a) the applicant shall be physically and mentally capable of performing the duties of the licence or rating applied for or held; and

b) there shall be no medical reason which makes the applicant liable to incapacitation while performing the duties.

5.3 MEDICAL EXAMINERS

5.3.1 Medical examiners are physicians who receive initial and periodic refresher training in aviation medicine and have practical knowledge and experience of the aviation environment in which the holders of licences and ratings carry out their duties. Examples of practical knowledge and experience are flight experience, simulator experience, on-site observation or any other hands-on experience deemed by the Licensing Authority to meet this requirement.

5.3.2 Medical examiners are designated by the Licensing Authority, taking into consideration their experience and knowledge in the aeronautical field, to conduct medical examinations of fitness of applicants for the issue or renewal of licences or ratings for which medical requirements are prescribed. Before designation, medical examiners shall demonstrate adequate competency in aviation medicine.

5.3.3 When a medical examiner conducts a medical exam on an applicant, the outcome is that the applicant is either fit or unfit. If unfit, the medical assessment should be withheld. If fit, a medical assessment is issued in accordance with national regulations and Annex 1. A medical report is produced and sent to the CAA for evaluation by the medical assessor and for recording and auditing purposes. It should be noted that it is not necessary that every report submitted be evaluated or audited.

5.3.4 The SARPs for medical assessments 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. Flexibility exists in Annex 1 for the medical examiner to refer to the medical assessor the case of an applicant who does not meet in full a medical standard, but whose condition might not present a flight safety hazard.

5.3.5 Flexibility may be exercised only in exceptional cases and not as a matter of course. The medical examiner shall report to the Licensing Authority 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. The case is then referred to a medical assessor for an aeromedical decision (see 5.4).

5.3.6 The medical examiner shall be required to submit sufficient medical information to the Licensing Authority to enable the Authority to undertake medical assessment audits.

5.3.7 The Medical Office personnel with access to records, and the medical examiner(s) shall respect the medical confidentiality of the applicant at all times.

5.4 MEDICAL ASSESSORS

5.4.1 Medical assessors are physicians, appointed by the Licensing Authority, who are qualified and experienced in the practice of aviation medicine and competent in evaluating and assessing medical conditions of significance in terms of flight safety.

5.4.2 A medical assessor may, at the discretion of the Licensing Authority, be designated as medical examiner, subject to compliance with the provisions of 5.3 regarding training, knowledge, experience, demonstration of competency, as well as medical assessment evaluation and audit (by another assessor).

5.4.3 Medical assessors (under the supervision of the CMO) evaluate medical reports submitted to the Licensing Authority by medical examiners. A sufficient sample of the reports must be evaluated for auditing purposes as well as all those reports when Standard 1.2.4.9[1] of Annex 1, introducing a degree of flexibility based on a risk assessment, may need to be applied. A medical assessor who audits medical examination reports should be familiar with the principles and practice of auditing procedures.

5.4.4 The medical assessor makes aeromedical decisions when a degree of flexibility is permitted by Annex 1, 1.2.4.9,[1] in situations where prescribed standards for a particular licence are not met. Sometimes a medical review board, including appropriate medical specialists, may need to be convened to assist in the process. In all cases, the responsibility for the final technical aeromedical decision should rest with the CMO.

1. This Standard is often referred to as the "flexibility" Standard and was numbered 1.2.4.8 before 18 November 2010.

5.4.5 The medical assessor ensures that medical examiners are adequately trained, have practical knowledge and experience of the aviation environment in which the holders of licences and ratings carry out their duties and that their competency as medical examiners is adequate. The medical assessor is responsible for periodically evaluating the competence of medical examiners. In smaller Licensing Authorities he or she may also hold the post of Chief Medical Officer.

5.4.6 Medical assessors, because of their functions as employees of or consultants for the Licensing Authority and as supervisors for the designated medical examiners, normally will have advanced training in the specialty of aviation medicine and extensive experience in regulatory and clinical civil aviation medicine.

5.4.7 Finally, an important duty of the medical assessor is the safeguarding of medical confidentiality, although pertinent medical information may be presented by the medical assessor to other officials of the Licensing Authority when justified by operational concerns or when an accredited medical conclusion is sought.

5.5 CHIEF MEDICAL OFFICER

5.5.1 The CMO plays a central role in the aviation medical system. The CMO ultimately oversees all medical assessments, including those for whom applicants do not meet the SARPs in all respects, although he or she relies on appropriate medical and operational advice from various experts. Medical assessments can be issued by the CMO or by designated medical examiners.

5.5.2 The CMO should have extensive experience in regulatory civil aviation medicine as well as a thorough knowledge of medical requirements and medical best practice. He or she should have leadership qualities, administrative skills and the ability to make autonomous decisions concerning medical fitness of applicants.

5.5.3 Where possible, ICAO encourages the use of objective risk assessment for aeromedical fitness decisions because this acknowledges the fact that zero risk is unattainable and provides a benchmark that protects flight safety and at the same time is fair and transparent to the affected licence holder or applicant. An acceptable level of risk can be developed by a review board, with participation of the CMO, other CAA medical and operational personnel, other medical experts together with representative bodies of licensed personnel, thus providing the flying community with some input into the decision-making process. The widespread adoption of such an approach would improve global harmonization of aeromedical decisions.

5.5.4 The CMO also provides policy guidance for medical examiners and directs the Medical Office staff. In many smaller organizations, the CMO is also the only medical assessor. The relationship between the CMO, medical assessors and medical examiners is shown in Figure I-5-1.

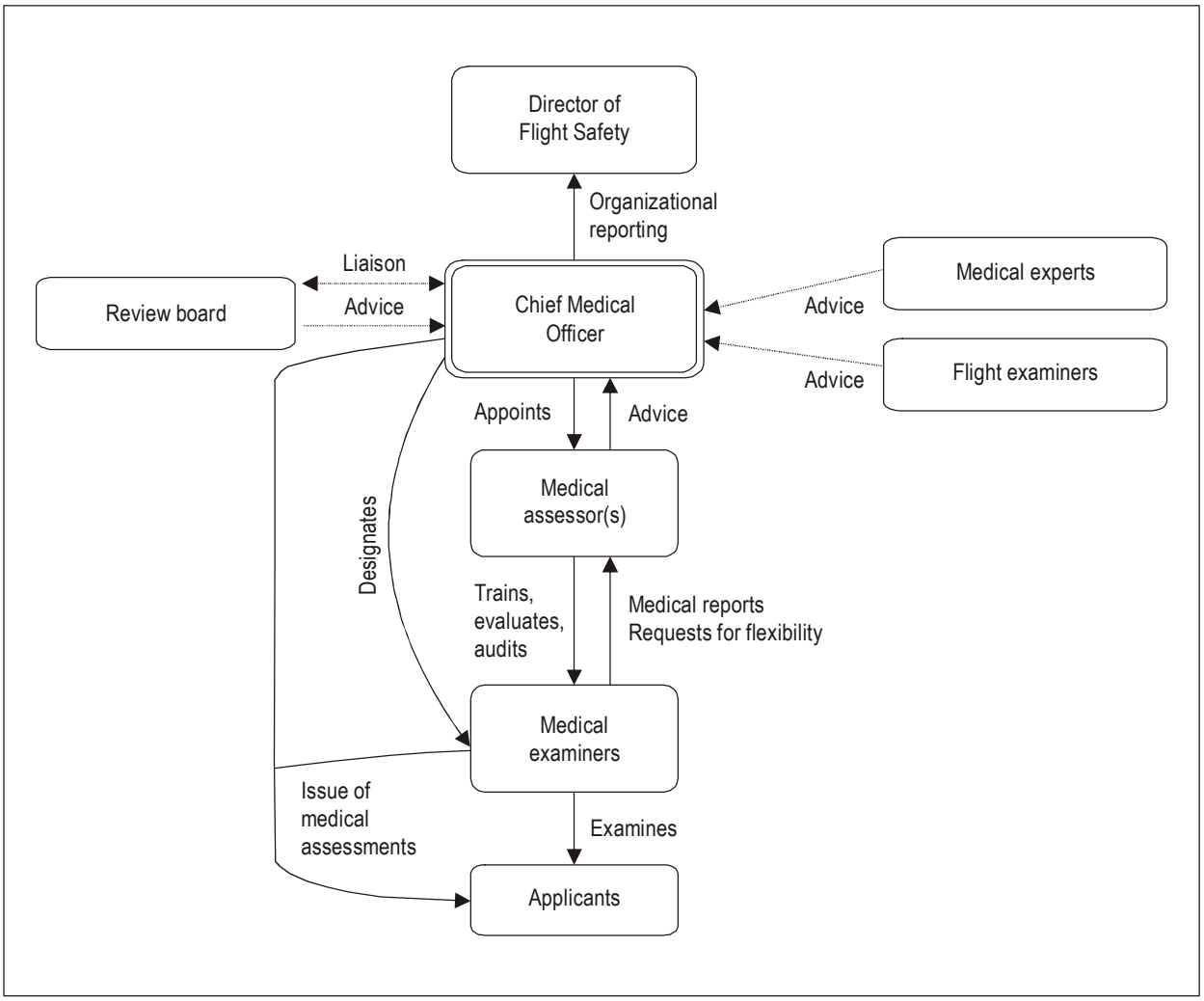

Figure I-5-1. Relationship between the CMO, medical assessors and medical examiners

Chapter 6

DELEGATION OF FUNCTIONS AND RESPONSIBILITIES

6.1 GENERAL

6.1.1 The Chicago Convention allocates to the State of Registry certain functions that the State is entitled and obligated to discharge. However, the State of Registry may not find it possible or convenient to fulfil directly some of the PEL obligations. In such cases, the State of Registry may enter into agreements with other Contracting States, organizations or service providers to fulfil some of its obligations.

6.1.2 The major reasons for which a Licensing Authority may want to delegate some of its functions to another Contracting State or a service provider are:

a) the absence of the necessary human, technical or material resources; or

b) when aircraft on the national registry are leased abroad. In this situation, the State of Registry may find it more convenient to delegate some of its functions to the State of the Operator, which has easier access to the aircraft and their crew members.

6.1.3 It is important to understand that, except as outlined below, the State of Registry's Licensing Authority retains its responsibility for personnel licensing even though it may have delegated some or all of the functions.

6.1.4 A State of Registry can transfer all or part of its personnel licensing functions and duties regarding an aircraft only when those functions and duties are delegated to another Contracting State under the provisions of an agreement under Article 83 *bis* of the Chicago Convention as described in 6.3 below. In that case, the State of Registry is relieved of its responsibility with respect to the transferred functions and duties.

6.2 DELEGATION OF PERSONNEL LICENSING FUNCTIONS TO ANOTHER STATE

6.2.1 States can delegate some of their licensing functions to other States. It is often done on an informal basis by accepting, de facto, some of the personnel licensing certificates issued by other States, such as theory examination certificates, flight test certificates or medical assessment certificates. In most cases, such arrangements are less than satisfactory because the Licensing Authority does not have sufficient knowledge of the basis and conditions under which these certificates are issued to be in a position to ensure that the applicant meets the national and international requirements. Such arrangements can nevertheless be useful and they are acceptable when the Licensing Authority has ascertained that the certificates issued in other States are in full compliance with its own regulations and ICAO Standards and is satisfied of the authenticity of the certificate. In practice, this limits the use of foreign certificates to those issued by specific States.

6.2.2 A preferable approach is to formalize the delegation of functions through an agreement between the two States. Such an agreement should describe in detail the respective responsibilities of the two parties, the regulations that will be used to discharge the functions, the type of service (content and timeliness) provided to the State of Registry, the quality control arrangement and the financial aspects of the agreement.

6.2.3 An example of an agreement between two States on the delegation of personnel licensing functions can be found at Appendix C to this Part.

6.3 DELEGATION OF PERSONNEL LICENSING FUNCTIONS AND DUTIES TO ANOTHER STATE UNDER ARTICLE 83 *BIS* OF THE CHICAGO CONVENTION

6.3.1 Article 83 *bis* of the Chicago Convention allows the transfer of some functions and duties, including flight crew licensing, from the State of Registry to the State of the Operator in respect of specified aircraft. It is the only case where the Chicago Convention provides a mechanism that allows a State of Registry to be relieved of its licensing responsibility through the transfer of its licensing functions and duties. Guidance on the implementation of Article 83 *bis* is contained in Cir 295.

6.3.2 Article 83 *bis* is an important tool in facilitating the control and oversight of leased aircraft. However, it has not been designed and it cannot be used as a mechanism to transfer the whole licensing responsibility from one State to another State. The transfer of responsibility through an Article 83 *bis* agreement can take place only from the State of Registry to the State of the Operator in respect of an aircraft identified in the aeronautical agreement. That agreement shall be registered with ICAO or communicated to the Authorities of all the other concerned States (generally for short-term leases).

6.4 DELEGATION OF LICENSING FUNCTIONS TO A REGIONAL SAFETY OVERSIGHT ORGANIZATION

Note.— Further guidance on how a joint licensing and certification system could work in a regional safety oversight organization (RSOO) is contained in Doc 9734, Part B, The Establishment and Management of a Regional Safety Oversight Organization.

6.4.1 States that are able to dedicate only very limited resources towards safety oversight are encouraged to pool their resources in collaborative arrangements with other States within the same region or sub-region to seek a common solution for resolving aviation safety deficiencies, to build more robust safety oversight systems and to help meet their ICAO obligations. This has resulted in the establishment of a number of regional initiatives, such as projects under the Cooperative Development of Operational Safety and Continuing Airworthiness Programmes (COSCAP) or more institutionalized RSOOs.

6.4.2 Even when States within a particular region or sub-region already have well-established and resourced national Civil Aviation Authorities, it may still be very useful and cost-effective to establish an RSOO in order to achieve greater commonality and regional integration of regulations and operating standards.

6.4.3 RSOOs vary in terms of their complexity, scope of activities and the level of authority delegated by their member States with respect to personnel licensing functions and duties. Thus, an RSOO may undertake a number of personnel licensing and certification activities, ranging from the development of a harmonized or common set of licensing regulations and operating standards and overseeing their implementation by States, to actually being directly involved in licensing, approval and certification processes.

6.4.4 Nevertheless, responsibility for safety oversight always remains with the State as a party to the Chicago Convention. Similarly, the State remains responsible for fulfilling its licensing obligations as determined by the relevant Articles of the Chicago Convention. This applies even where the RSOO is the regulatory or standard-setting body and the national aviation authorities are the implementing and enforcement agencies.

6.4.5 When the RSOO is designated as a regulatory body, it is important that the personnel licensing functions and duties delegated to it are clearly defined in the RSOO's agreement document. In addition, where the scope of licensing activities that an RSOO undertakes on behalf of member States differs between the States, relevant differences should be clearly specified in a subsidiary document established between each member State and the RSOO. Naturally, the RSOO itself should be adequately resourced to accomplish whatever personnel licensing tasks and functions it is delegated to carry out.

6.4.6 At a basic level, the agreement document of an RSOO might provide only for the development of a model set of non-binding licensing requirements and standards to be used by member States for harmonizing or standardizing their different sets of national requirements. In this case, the RSOO might carry out training activities and safety oversight functions, such as auditing the personnel licensing system of its member States, or might conduct other activities, such as inspections, examinations and practical tests leading to the issuance of licences and ratings. Usually, the legal framework of this type of RSOO is determined by a Memorandum of Understanding or Memorandum of Cooperation or, in some cases, a more detailed agreement document outlining specific objectives and the functions delegated by member States. However, at the basic level described in this paragraph, an RSOO typically lacks regulatory authority.

6.4.7 At a more complex level, an RSOO will have its mandate established by means of a constitutional charter, regulation or law clearly spelling out its objectives and the scope of its activities and responsibilities. The RSOO might be responsible for developing common licensing regulations and operating standards that have the force of law. It might also have executive powers with respect to certain licensing and certification activities such as the approval of aviation training organizations on behalf of its member States. In this case, the RSOO, as mandated by a regional legislative body, acts as a legal regulatory authority.

6.4.8 Under this type of RSOO agreement, individual member States might still be responsible for the actual issuance of licences and ratings and for enforcement. However, the RSOO's mandate might give it the competence to be the rulemaking and standard-setting organization for all its members States. In this capacity, the individual national aviation licensing authorities will remain responsible for issuing licences and ratings, as well as approvals and authorizations, subject to monitoring and standardization by the RSOO.

6.5 DELEGATION OF PERSONNEL LICENSING FUNCTIONS TO SERVICE PROVIDERS

6.5.1 States can also delegate some of their licensing activities to service providers. For instance, several Contracting States have delegated or contracted out the development and conduct of written and/or practical examinations, in part or in all, to companies that have the required expertise. The scope of the delegation depends on the State. In some States, the delegation is limited to the delivery of written examinations while in others the contractor provides the full examination system. The reasons for delegating such functions can either be:

a) the lack of expertise within the CAA; or

b) such an arrangement allows the provision of a better and/or more efficient service to the customer when delivered by a service provider under delegation.

6.5.2 The State Licensing Authority retains its responsibility for the personnel licensing functions even when it delegates some of its functions to a service provider. It maintains surveillance of the delegated licensing activities, usually through the conduct of audits. The delegation of functions can be made through an agreement, a contract, an authorization or any appropriate means, but it is important that the following aspects be clearly defined:

a) the respective responsibilities of the parties;

b) the regulations that will be used to discharge the functions;

c) the type of service (content and timeliness) provided to the State of Registry;

d) the quality control arrangement; and

e) the financial aspects.

6.5.3 The contractual arrangements between a CAA and a service provider usually detail all aspects of the delegation of functions. As a result, it is not possible to provide a complete example, but Appendix D contains an outline of an actual instrument of delegation between a Licensing Authority and a company providing examination and flight testing services.

6.6 DELEGATION OF LICENSING FUNCTIONS TO ORGANIZATIONS

6.6.1 Some States have delegated the supervision of recreational flying activities, including the qualification of pilots, to independent bodies such as an aerial sport federation. Such delegation of functions is in most cases compatible with the State's obligation with regard to the Chicago Convention provided that:

a) the flying authorizations issued by the independent bodies are restricted to the national airspace; and

b) these activities do not constitute a hazard to international aviation.

6.6.2 The delegation of functions for glider and free balloon activities presents special challenges because ICAO licensing Standards exist for glider and free balloon pilot licences. For these activities, the Licensing Authority may want to retain the responsibility to issue free balloon and glider pilot licences for those individuals who need to exercise the privileges of the licence internationally, while relying on the system of flying authorizations issued under delegation for domestic operations. It is technically feasible to delegate to the independent body the issuance of an "ICAO licence" that would be recognized internationally. However, this approach is not recommended because it would remove the flexibility that delegated organizations have,[1] and the Licensing Authority would have to exercise a level of oversight of the licensing functions of the independent organization, which would be onerous to both parties.

1. The flexibility consists in developing national authorization requirements for domestic operations, suiting national needs. These requirements may differ from ICAO licensing requirements.

Appendix A to Part I

EXAMPLES OF JOB RESPONSIBILITIES AND QUALIFICATIONS FOR KEY PERSONNEL POSITIONS

This appendix contains examples of responsibilities and, where appropriate, qualifications for key personnel positions. These examples are representative and do not cover the full scope of the related job descriptions.

1. CHIEF OF PERSONNEL LICENSING

Responsibilities:

a) develop and maintain standards, recommended practices and procedures relating to the licensing of flight crew members, aircraft maintenance personnel, air traffic controllers, flight operations officers/flight dispatchers and other specialities. Ensure that those standards, recommended practices and procedures comply with ICAO requirements and, where appropriate, are compatible with foreign licensing practices;

b) promulgate, in civil aviation regulations, civil aviation orders and civil airworthiness requirements, the approved licensing standards as amended from time to time and ensure that guidance material is published in aeronautical information circulars (AICs);

c) ensure that approved standards are being complied with and sound practices and procedures are being applied through regular inspections of approved training organizations by CAA staff;

d) enforce civil aviation regulations, civil aviation orders and civil airworthiness requirements relating to the licensing and maintenance of competency of flight crew members, aircraft maintenance personnel, air traffic controllers, flight operations officers/flight dispatchers and other specialities and submit to the Director recommendations for action to suspend, cancel or amend licences or approvals when appropriate;

e) maintain standardization and encourage coordination between regional offices and the headquarters' units by providing adequate instructions and guidance material, by conducting regular visits and meetings and by, at least annually, completing a formal headquarters' inspection of and report on regional activities;

f) ensure that staffing, facilities and training are adequate and prepare forecasts to facilitate the continued proper functioning of the Personnel Licensing Office;

g) regularly advise the Flight Safety Director of the state of work and significant events and developments within the Personnel Licensing Office;

h) maintain liaison with the Chiefs of the Medical Office, Flight Operations, Airworthiness, etc., regarding licensing standards and facilitate the inspection functions of their staff charged with licensing duties;

i) ensure that the licensing activities are coordinated with other units of the CAA;

j) ensure that departmental officers and other persons approved or designated to conduct flight or practical tests on behalf of the Director are properly appointed, trained, briefed and supplied with adequate guidance and documentation to carry out their tasks, and ensure that an efficient recording system of such approved or designated persons and of all licensing actions is maintained;

k) arrange for the issue and amendment of:

1) personnel licences and ratings;

2) approvals for aviation training organizations and training programmes; and

3) lists of approved or designated persons;

l) ensure that registers of such licences, ratings, approvals and lists are properly maintained and made available to the public;

m) maintain liaison with the International Civil Aviation Organization and, where appropriate, aviation authorities of other States on matters concerning standards applicable to licences and ratings and to examination and test standards and techniques for flight crew members, aircraft maintenance personnel, air traffic controllers, flight operations officers/flight dispatchers and other specialities;

n) act as deputy for the Flight Safety Director when so directed;

o) initiate and direct study and research into licensing matters related to flight crew members, aircraft maintenance personnel, air traffic controllers, flight dispatchers and other specialities;

p) perform such duties as may from time to time be directed; and

q) properly discharge all delegated powers.

2. CHIEF EXAMINER

Responsibilities:

a) direct, maintain and develop, as required, an organization for the examination of applicants for all categories of personnel licences and ratings provided for in the civil aviation regulations and orders;

b) direct the preparation and review of detailed prescriptions and conditions of examination for the various categories of personnel licences and ratings provided for in the civil aviation orders consistent with the privileges granted therein;

c) direct the preparation and review and arrange for the publication of information circulars and requirements relating to the examinations and tests leading to the issue of personnel licences and ratings, of instructor authorizations and of certificates of competency provided for in the civil aviation orders;

d) direct the staff of examiners in the preparation of examination question papers and in the marking of candidates' examination response papers to ensure that standards consistent with current practices and the privileges granted by the licences or ratings in question are established and maintained;

e) maintain close liaison with examiners of the regional offices, as necessary, to ensure harmonization and the feedback of information regarding the oral, written and practical examination of candidates for licences, ratings, approvals, instructor authorizations and certificates of competency;

f) initiate and maintain, where appropriate, liaison with aviation authorities of other States in order to exchange information concerning content of examination syllabi and examining techniques and standards pertinent to the maintenance of effective licensing standards, including adhering to the Standards, Recommended Practices and guidance of the International Civil Aviation Organization;

g) establish and maintain a system for ensuring that oral, written and practical examining techniques are effective and compatible with the current aviation environment;

h) establish and maintain an efficient system for the preparation and recording of examination or test reports;

i) direct the staff of examiners in assessing the extent of examination to be undertaken by applicants for the validation or conversion of foreign licences, approvals or authorizations;

j) in respect of approved training organizations and approved training courses:

1) establish and maintain requirements for approval as provided for in the civil aviation orders, including requirements for the recognition of foreign-approved training organizations;

2) direct the evaluation of applications for approval;

3) establish and maintain standards of knowledge and instructing skills for authorized instructors consistent with the standard and scope of the requirements for the trainee's rating in question;

4) direct the examination and audition of applicants seeking an instructor rating or authorization;

5) direct the regular formal inspection of premises and records of approved training organizations for compliance with standard requirements and recommend such action as considered necessary in cases of non-compliance; and

6) maintain an inspection programme to observe first-hand and evaluate current training and practices;

k) direct the evaluation of applications for exemption from type rating examination from applicants who have completed an approved course of training;

l) direct the evaluation of manufacturers' training course examinations and the examination of type rating training courses approved or required by the CAA of other States with a view to granting exemption from type rating examination to applicants for ratings who successfully complete such training course and examination;

m) direct the evaluation of aircraft maintenance specialty training courses and testing methods that applicants for an endorsement of specialty rating should successfully complete;

n) develop, maintain and direct standards appropriate for the approval of amateur-built aircraft stage inspectors;

o) develop and maintain effective liaison with other organizations conducting training and/or examination of civil aviation personnel;

p) maintain close liaison with examination supervisors to ensure that the supervision is adequate and correct and that a system of reporting on the conduct of examinations is maintained;

q) provide training for examiners to ensure their effectiveness in their allotted duties;

r) supervise the training and performance of designated examiners; and

s) act as deputy to the Chief of Personnel Licensing.

3. EXAMINER (INSPECTOR OR TECHNICAL SUBJECT MATTER EXPERT BUT EXCLUDING MEDICAL EXAMINERS)

Responsibilities of the staff of examiners, which include an individual examiner's responsibilities:

a) prepare and periodically review the syllabi of licence and rating examinations for aviation personnel in their field of speciality, defining the qualifying conditions and standards;

b) produce and arrange for the publication of relevant pamphlets and information circulars for the guidance of applicants for licences and ratings;

c) develop technical manuals, training handbooks, test standards, test items and associated materials for personnel licensing training and testing;

d) prepare examination question papers for licence and rating knowledge examinations and mark candidates' answer papers;

e) maintain a statistical review to determine the effectiveness of licence and rating examinations;

f) evaluate the technical knowledge qualifications presented in support of applications for exemption from examination for licences and ratings;

g) evaluate the technical knowledge level of competency of foreign licences and ratings;

h) assess the extent of the technical knowledge examinations and/or skill tests to be taken by applicants for the validation or conversion of foreign licences and ratings;

i) brief and liaise with examination supervisors and supervise examinations if required; and

j) carry out such other duties as may from time to time be directed.

Qualifications:

a) have high personal integrity;

b) have thorough knowledge of the licensing system;

c) have knowledge of and ability to apply and interpret the regulations, policies and guidance of the State;

d) have no personal or professional conflicts of interest with the examination function;

e) be an experienced and current practitioner in his or her specialist area;

f) have the appropriate grade and level of licence for the assigned examination topic;

g) have a strong background in training and assessment;

h) have excellent written language skills; and

i) be computer literate, as appropriate.

4. EXAMINATION SUPERVISOR (PROCTOR)

Responsibilities:

a) positively identify each applicant for knowledge testing, ensure proper test authorization is presented and ensure proper completion of applicant check-in procedures to the test centre;

b) before beginning the knowledge test, instruct each applicant on the rules of behaviour during the test and the time allowed for the test;

c) provide the applicant with appropriate knowledge test and any supplemental materials needed to take the test;

d) exercise surveillance of the applicant at all times during test administration, including accompanying an applicant during a break;

e) after the test, collect any supplemental materials provided to the applicant for taking the test;

f) if required, mark candidates' answer papers for knowledge tests (if tests are done manually ─ tests might also be graded by an examiner); and

g) provide to applicants graded results of knowledge tests (if reports are computer-generated).

Qualifications:

a) have high personal integrity;

b) have no disqualifying record regarding administering of official exams;

c) have acceptable sight and hearing;

d) have the ability to follow instructions but act decisively when needed;

e) ideally have a teaching or supervisory background;

f) have no personal or professional conflicts of interest with his or her examination supervision function; and

g) be computer literate if supervising computer-based tests, as appropriate.

5. TRAINING ORGANIZATION INSPECTOR

Responsibilities:

a) evaluate applications for approval of a training organization;

b) evaluate ground training curricula and study material submitted by approved training organizations in support of applications for approval to conduct approved training courses;

c) orally examine, in their specialist subjects and audition in the classroom, ground instructors seeking authorization to instruct at approved training organizations or, if suitable for instructor qualification, approve the training and evaluation conducted by an approved training organization;

d) inspect the training facilities, procedures and methods at approved training organizations;

e) determine the strengths and weaknesses of programmes for ground training, practical training, on-the-job training and flight training at approved training organizations and recommend the remedial action to be taken to maintain standards and improve course design;

f) evaluate the effectiveness of the quality assurance system and, if required, of the safety management system; and

g) carry out such other duties as may from time to time be directed.

For the large PEL Office, additional examples of responsibilities and qualifications are provided in paragraphs 6 to 8 to support the Examination Section in delivering a large number of knowledge tests for a suite of licences.

6. EDUCATIONAL EXAMINER

Responsibilities:

a) perform a combination of multiple, varying and complex assignments relating to knowledge test design and to the development, revision and quality assurance of questions;

b) apply experience and comprehensive knowledge of testing systems to plan, analyse and evaluate test items and whole tests and their interrelationship with the programme's overall educational and testing goals;

c) collaborate with statistical subject matter experts to review test items and whole test performance in order to ensure compliance with PEL Office procedures and alignment with organizational objectives;

d) design solutions to multifaceted issues and prepare management reports to recommend improvements in operational efficiency. Identify, organize and make optimal use of resources to accomplish programme activities within established schedules;

e) act as a contributing specialist for assessing previously created test items and for formulating newly-composed test items;

f) provide guidance to aviation subject matter experts to identify learning issues, recommend solutions and implement them;

g) act as a point of contact for subject matter experts, academia and industry representatives in order to receive and determine the validity of inputs and recommendations, and implement improvements in the testing programme;

h) act as point of contact for the Examination Section in discussions, meetings and briefings with internal and external organizations concerning testing system performance, status and plans, as well as current and future business requirements; and

i) develop and recommend, for the Chief Examiner's consideration, approaches to migration to or acquisition of innovative testing methodologies, including possible modifications to existing systems or adoption of new testing system attributes and enhancements.

Qualifications:

a) have high personal integrity;

b) have knowledge of the instructional system and testing design principles, professional learning theory and educational standards;

c) have the ability to research and apply findings in professional learning and training strategies, including knowledge of evaluation and testing techniques;

d) have the ability to apply interpersonal and communication skills to establish effective working relationships; and

e) have at least five years of experience in designing, formulating, finalizing, evaluating, validating, revising and enhancing individual knowledge test items and entire testing instruments.

7. STATISTICAL ANALYST

Responsibilities:

a) apply experience and detailed technical knowledge of statistical data analysis methods and techniques, data collection procedures and computerized statistical software to manipulate and analyse data for the personnel licensing testing and licensing programmes;

b) be responsible for database management, statistical analysis and reporting of individual test items, test scores and other trend data for evaluating personnel licensing knowledge test performance in order to evaluate actual and potential effectiveness;

c) perform statistical analysis using standard techniques and methods of analysis;

d) develop, implement and maintain databases and tracking systems. Collect, compile, organize, analyse and interpret information and data on knowledge test performance for the PEL Office;

e) prepare data products, such as tables, charts and graphical displays, to document data analysis and assess performance improvement of individual test items and test scores;

f) present results from statistical data analysis in briefings, working papers, reports and other informational documents, when requested, to assist management in making decisions regarding the testing and licensing programmes;

g) manage a database of information on approved training organizations (ATOs), to include the list of ATOs, including organizations applying for approval, and their lists of graduates. Perform statistical analysis of the performance of individual ATOs; and

h) participate in forums of industry and aviation education institutions on testing procedures.

Qualifications:

a) have detailed knowledge of, and experience in, statistical data analysis methods and techniques, data collection procedures and computerized statistical software used to manipulate and analyse data;

b) have experience in presenting results from statistical data analysis in briefings, working papers, reports and other informational documents; and

c) have experience in database management.

8. COMPUTER-TESTING MANAGER

Responsibilities:

a) formulate, develop, implement and oversee a computer-based delivery system for personnel licensing knowledge tests;

b) assess emerging technology, processes, procedures and activities in relation to evaluation documents regarding personnel licensing knowledge and skill tests;

c) make recommendations for acquisition of information technology equipment and software and for adoption or modification of equipment to accommodate computer-based testing delivery;

d) lead a team of specialists and experts to programme a system to house question items, to deliver computer tests formatted in accordance with the CAA examination layouts and to provide grading and printouts of knowledge test reports in accordance with CAA requirements; and

e) act as a point of contact for the CAA in discussions, meetings and briefings with internal and external stakeholders concerning computer-based test delivery.

Qualifications:

a) have expert knowledge of advanced principles, processes and techniques of management and the methods used to gather, analyse and evaluate significant and/or controversial information on the management process;

b) have knowledge of CAA personnel licensing programmes and their interrelationship with the other departments of the CAA;

c) have detailed knowledge of, and experience in, information technology as it relates to computer-testing delivery; and

d) have excellent analytical skills and be capable of providing expert advice, guidance and leadership in the development, implementation and management of programmes and/or management studies and techniques at the national level.

Appendix B to Part I

NOTE ON THE NOTIFICATION OF DIFFERENCES TO ANNEX 1 — *PERSONNEL LICENSING* — AND FORM OF NOTIFICATION

(Prepared and issued in accordance with instructions of the Council)

1. INTRODUCTION

1.1 The Assembly and the Council, when reviewing the notification of differences received in compliance with Article 38 of the Chicago Convention, have repeatedly noted that the state of such reporting is not entirely satisfactory.

1.2 With a view to achieving a more comprehensive coverage, this note is issued to facilitate the determination and reporting of such differences and to state the primary purpose of such reporting.

1.3 The primary purpose of reporting of differences is to promote safety and efficiency in air navigation by ensuring that governmental and other agencies, including operators, concerned with international civil aviation are made aware of all national regulations and practices in so far as they differ from those prescribed in the ICAO Standards.

1.4 Contracting States are, therefore, requested to give particular attention to the notification before [date is specified] of differences with respect to the Standards in Annex 1. The Council has also invited Contracting States to extend the above considerations to Recommended Practices.

1.5 Contracting States are asked to note further that it is necessary to make an explicit statement of intent to comply where such intent exists, or where such is not the intent, of the difference or differences that will exist. This statement should be made with respect to the whole of the Annex, i.e. not only to the latest amendment but to the whole Annex, including the amendment.

1.6 If previous notifications have been made in respect of this Annex, detailed repetition may be avoided, if appropriate, by stating the current validity of the earlier notification. States are requested to provide updates of the differences previously notified after each amendment, as appropriate, until the difference no longer exists.

2. NOTIFICATION OF DIFFERENCES TO ANNEX 1, INCLUDING AMENDMENT [LATEST AMENDMENT NUMBER]

2.1 Past experience has indicated that the reporting of differences to Annex 1 has in some instances been too extensive since some appear merely to be a different manner of expressing the same intent.

2.2 Guidance to Contracting States in the reporting of differences to Annex 1 can only be given in very general terms. Where the national regulations of States call for compliance with procedures that are not identical but essentially the same as those contained in the Annex, no difference should be reported since the details of the procedures existing are the subject of notification through the medium of aeronautical information publications. Although differences to Recommended Practices are not notifiable under Article 38 of the Convention, Contracting States are invited to notify the Organization of the differences between their national regulations and practices and any corresponding Recommended Practices contained in an Annex. States should categorize each difference notified on the basis of whether the corresponding national regulation is:

a) *More exacting or exceeds the ICAO Standard or Recommended Practice (SARP) (Category A).* This category applies when the national regulation is more demanding than the corresponding SARP, or imposes an obligation within the scope of the Annex which is not covered by a SARP. This is of particular importance where a State requires a higher standard which affects the operation of aircraft of other Contracting States in and above its territory;

b) *Different in character or other means of compliance (Category B).*[1] This category applies when the national regulation is different in character from the corresponding ICAO SARP, or when the national regulation differs in principle, type or system from the corresponding SARP, without necessarily imposing an additional obligation; and

c) *Less protective or partially implemented/not implemented (Category C).* This category applies when the national regulation is less protective than the corresponding SARP, or when no national regulation has been promulgated to address the corresponding SARP, in whole or in part.

2.3 When a Contracting State deems an ICAO Standard concerning aircraft, operations, equipment, personnel, or air navigation facilities or services to be not applicable to the existing aviation activities of the State, notification of a difference is not required. For example, a Contracting State that is not a State of Design or Manufacture and that does not have any national regulations on the subject, would not be required to notify differences to Annex 8 provisions related to the design and construction of an aircraft.

2.4 For States that have already fully reported differences to Annex 1, or have reported that no differences exist, the reporting of any further differences occasioned by the amendment should be relatively straightforward; however, attention is called to paragraph 1.5 wherein it is indicated that this statement should be made with respect to the whole of the Annex, i.e. not only to the amendment itself but to the Annex as amended.

3. FORM FOR NOTIFICATION OF DIFFERENCES (THROUGH THE FILING WITH ICAO OF A WRITTEN FORM)

3.1 Differences should be notified in the following form:

a) *Reference:* The number of the paragraph or sub-paragraph in Annex 1 as amended which contains the Standard or Recommended Practice to which the difference relates;

b) *Category:* Indicate the category of the difference as A, B or C in accordance with paragraph 2.2 above;

c) *Description of the difference:* Clearly and concisely describe the difference and its effect;

d) *Remarks:* Under "Remarks" indicate any reasons for the difference and intentions including any planned date for implementation.

3.2 The differences notified will be recorded in a Supplement to the Annex, normally in the terms used by the Contracting State when making the notification. In the interest of making the Supplement as useful as possible, please make statements as clear and concise as possible and confine remarks to essential points. Comments on implementation, in accordance with paragraph 4 b) 2) of the Resolution of Adoption, should not be combined with those concerning differences. The provision of extracts from national regulations cannot be considered as sufficient to satisfy the obligation to notify differences. General comments that do not relate to specific differences will not be published in Supplements.

1. The expression "different in character or other means of compliance" in b) would be applied to a national regulation which achieves, by other means, the same objective as that of the corresponding ICAO SARPs and so cannot be classified under a) or c).

NOTIFICATION OF COMPLIANCE WITH OR DIFFERENCES FROM ANNEX 1
(including all amendments up to and including the last Amendment [Amendment number])

To: The Secretary General
International Civil Aviation Organization
999 University Street
Montréal, Quebec
Canada H3C 5H7

1. No differences will exist on [date] between the national regulations and/or practices of [State] and the provisions of Annex 1, including all amendments up to and including Amendment [number].

OR

2. The following differences will exist on [date] between the regulations and/or practices of [State] and the provisions of Annex 1, including Amendment [number] (Please see Note 3) below).

a) Annex Provision (Please give exact paragraph reference)	**b) Difference Category** (Please indicate A, B, or C)	**b) Details of Difference** (Please describe the difference clearly and concisely)	**c) Remarks** (Please indicate reasons for the difference)

3. By the dates indicated below, [State] will have complied with the provisions of Annex 1, including all amendments up to and including Amendment [number] for which differences have been notified in 2 above.

a) Annex Provision (Please give exact paragraph reference)	**b) Date**	**c) Comments**

NOTES

1) If paragraph 1 above is applicable to you, please complete paragraph 1 and return this form to ICAO Headquarters. If paragraph 2 is applicable to you, please complete paragraphs 2 and 3 and return the form to ICAO Headquarters.

2) Please dispatch the form to reach ICAO Headquarters by [one month before applicability date].

3) A detailed repetition of previously notified differences, if they continue to apply, may be avoided by stating the current validity of such differences.

4) Guidance on the notification of differences from Annex 1 is provided in the Note on the Notification of Differences at Attachment D.

5) Please send a copy of this notification to the ICAO Regional Director accredited to your Government.

4. ELECTRONIC FILING OF DIFFERENCES (EFOD)

4.1 Description of the EFOD system

4.1.1 The EFOD system is composed of two components:

a) an online user interface that allows CAA users to view Annex provisions and indicate a State's compliance and/or differences; and

b) an Annex manager that enables ICAO to manage Annex amendments, update the online user interface with the latest amendments as well as to monitor and analyse the global level of the implementation of SARPs; it provides ICAO with the capability to generate electronic Supplements to the Annexes.

4.1.2 Annex provisions including graphics and tables are stored as individual records in a database of the Annex manager, regularly uploaded to the online user interface and displayed together with a data entry field for State's information on compliance and differences. Annex Appendices forming SARPs will not be available in the system until 2012. While the user interface is currently available only in English, the system can capture and process data entered in English, French, Spanish and Russian. It is anticipated that the system will also be able to accommodate Chinese and Arabic in 2012.

4.1.3 The online user interface is available on the USOAP restricted website to which all member States have access through their National Continuous Monitoring Coordinators (NCMCs). There are three different levels of access rights to each Annex that can be given to each user based on his or her roles and responsibilities:

a) read only;

b) read/write; and

c) read/write/validate.

4.1.4 A user who has an access right of "read/write/validate" can view Annex provisions, indicate compliance or differences and provide details. Once the user has entered all relevant data into the system, he or she may generate from the system a "Notification of Compliance with or Differences from" document to be signed by an authorized officer and sent to ICAO for the official notification of compliance or differences.

4.1.5 A tutorial video is available as part of the online help. Instructions on the use of the system were sent with a State letter on 1 April 2011 inviting States to use the EFOD system for the filing of differences.

4.2 Implementation of the EFOD system

4.2.1 The EFOD system will provide a more efficient and timely means for notifying differences to SARPs and disseminating this information.

4.2.2 *Implementation of the system for all Annexes except Annexes 9 and 17.* Starting from April 2011, States were invited to use the system as an alternative means for filing differences that exist between their national regulations and the SARPs of all 16 safety-related Annexes (all Annexes except Annexes 9 and 17). Once the system reaches a full degree of operational maturity and becomes functional in all ICAO languages, probably in the third quarter of 2012, the system will become the official means for filing of differences, replacing the old paper-based process.

4.2.3 *Generation of Supplements.* An official list of differences with respect to the Annexes will include only those of States that have submitted the "Notification of Compliance with or Differences from" document signed by the appropriate officer of the State. The system will generate electronic Supplements to each Annex, replacing the paper-based Supplements published in the past. The text of differences will be provided as entered by States and not translated. States will be given a read-only access to other States' compliance and difference information on an ongoing basis**.**

4.2.4 *Expansion of the system to include Annexes 9 and 17.* The system is functionally ready to include the provisions of Annexes 9 and 17 and will incorporate these two Annexes at a future date.

Appendix C to Part I

EXAMPLE OF AN AGREEMENT BETWEEN TWO STATES

(The text reproduced below is an example of an agreement between two States on the delegation of some personnel licensing responsibilities.)

MEMORANDUM OF UNDERSTANDING BETWEEN THE CIVIL AVIATION AUTHORITY OF STATE "A" AND THE CIVIL AVIATION AUTHORITY OF STATE "B" FOR THE REGULATORY OVERSIGHT OF TRAINING ORGANIZATIONS IN STATE "A" AND THE PROVISION OF TRAINING WITHIN STATE "B" FOR THE ISSUE OF A STATE "A" JAR-FCL LICENCE

1. BACKGROUND

The Joint Aviation Requirements — Flight Crew Licensing (JAR-FCL)[1] require that the State of licence issue shall be the State under whose authority the training and testing for the licence and initial medical certification were carried out. With the agreement of the JAR-FCL Committee, a JAA Member State may make an arrangement with one other JAA Member State to enable some, but not all, requirements to be fulfilled either within that State or within a training organization approved by that State.

2. MEMORANDUM

2.1 The State B Civil Aviation Authority [State B CAA] and the State A Civil Aviation Authority [State A CAA] have agreed that certain requirements for the issue of a JAR-FCL licence or rating by State A, as State of licence issue, may be carried out at training organizations approved by the State B CAA. This Memorandum details the arrangements that will be put in place to enable such activity. The Memorandum is not intended to create legal relations and neither party shall assume a legal obligation. The Memorandum may be varied at any time by the mutual consent of both parties.

2.2 The arrangements will be confined to the following activities:

a) An applicant for a JAR-FCL commercial pilot licence, airline transport pilot licence, instrument rating or instructor rating to be issued or included in a licence by the State A CAA may undergo theoretical knowledge and flight training at any organization approved by the State B CAA to conduct such training.

b) The State B CAA may conduct theoretical knowledge examinations for licences and the instrument rating within State B or, by arrangement in State A, for applications for pilot licences to be issued by State A. The results of such examinations will be advised to the State A CAA.

1. This example contains a historical reference to the European Joint Aviation Authorities (JAA) flight crew licensing requirements to provide the background. The JAA was disbanded on 30 June 2009.

c) Examiners authorized by the State B CAA may conduct skill tests either within State B or State A for licences and ratings to be issued by the State A CAA;

d) If requested to do so by the State A CAA, the State B CAA may approve and maintain regulatory oversight of training organizations located within State B;

e) If requested to do so by the State A CAA, the State B CAA may assist or offer advice on the regulatory oversight of registered facilities offering training for the private pilot licence located within and registered with State A.

3. CONDITIONS APPLIED TO THE MEMORANDUM

The Memorandum is subject to the following conditions:

a) Training and testing carried out under the above arrangements may be credited towards the requirements for the issue of a JAR-FCL licence or rating by the State A CAA as State of licence issue;

b) The State A CAA will retain responsibility for the initial medical assessment of applicants for a JAR-FCL licence where training is to be carried out under the above arrangements. The State B CAA will recognize, without formality, a JAR-FCL Class 1 or 2 medical assessment by the State A CAA as proof of medical fitness to undergo training, including solo flying, within State B;

c) When requested to do so, and provided the individual candidate has consented, the State B CAA will provide or make available to the State A CAA all available documentation required for the issue of a JAR-FCL licence, for those students undergoing training, practical testing and theoretical knowledge training, at organizations approved by the State B CAA, and the results of such tests and examinations as required for the issue of a licence by the State A CAA.

4. FINANCIAL CONSIDERATIONS

4.1 The State B CAA will, if applicable, apply the appropriate charges for the approval and/or regulatory oversight of training organizations and registered facilities in accordance with the State B CAA published Scheme of Charges applicable at the time. These charges will be levied on and be payable by the organization or individual applying for approval. Additional costs associated with travel and subsistence will be charged on a full cost-recovery basis to the organization or individual seeking approval or requesting facilities such as examination sittings outside of State B.

4.2 Individual applicants for theoretical knowledge examinations and skill testing by the State B CAA will be required to meet the costs of such examinations and tests as detailed in the State B CAA published Scheme of Charges.

4.3 No financial consideration will be involved between the State B CAA and the State A CAA under these arrangements except that the State B CAA may not agree to undertake a task requested by the State A CAA in circumstances where it is unable to charge an applicant for, or holder of, an approval, licence, etc., unless the State A CAA undertakes to meet the charges of the State B CAA for the task.

5. EFFECTIVE DATE AND VALIDITY OF THE MEMORANDUM

This Memorandum shall have effect from the date of signature and may be terminated by either party at any time without notice, but each shall use reasonable endeavours to provide appropriate notice to the other so as to enable the State A CAA to undertake any necessary additional tasks.

Appendix D to Part I

DELEGATION OF PERSONNEL LICENSING FUNCTIONS TO A SERVICE PROVIDER

An instrument of delegation from an Authority to a Service Provider is usually a large document that comprehensively covers all the aspects of the services to be provided. Because of the size of an actual document of delegation, it is not possible to provide a complete sample. The following is an actual Instrument of Delegation, with an outline of its Schedules, from a Licensing Authority to a company that provides examination and flight testing services.

INSTRUMENT OF DELEGATION

Pursuant to section xx of the Civil Aviation Act, I [Director's name] Director of Civil Aviation, hereby delegates to:

[Delegate's name]
[Delegate's title]

certain of my functions pursuant to section xx of the Civil Aviation Act relating to examination and flight testing activities, as set out in the Schedules hereto, for the period up to and including [end date of delegation].

Dated this [ ] day of [ ]

(signed)

SCHEDULE 1

SECTION A — GENERAL

1. Interpretation
2. Term of Delegation
3. Conflict of Interest
4. Safety Audit
5. Charges
6. Change of Shareholding
7. Confidentiality
8. Examination and Flight Testing Activities
9. Limitations on the Delegate
10. Amendments to the Exposition
11. Developmental Activities
12. Service Charter

SECTION B — DELEGATION REQUIREMENTS

13. Facility Requirements
14. Personnel Requirements
15. Equipment and Material
16. Examination Activity Procedures
17. Flight Testing Activity Procedures
18. Internal Quality Assurance Procedures

SECTION C — OPERATING REQUIREMENTS

19. Continuing Compliance
20. Certification of Examination Results
21. Certification of Flight Testing Results
22. Records of Personnel
23. Examination and Flight Testing Activity Records
24. Reporting to the Director
25. Examination Types
26. Flight Test Types

SCHEDULE 2 — CONDITIONS OF DELEGATION

1. Facility Requirements
2. Personnel Requirements
3. Examination and Flight Testing Activity Procedures
4. Certification of Examination and Flight Testing Results
5. Written Examination Duration
6. Independent Assessment of Complaints

Part II

PROCEDURES

Chapter 1

PROCEDURES FOR PERSONNEL LICENSING

1.1 GENERAL CONSIDERATIONS

1.1.1 The procedures contained in this manual are consistent with the licensing requirements prescribed in Annex 1. For a number of reasons, a State may be unable to fully comply with Annex 1 Standards and procedures, or may impose more stringent conditions in its national regulations. However, in such a case, the State is obliged, by Article 38 of the Convention, to notify ICAO of the differences between its national regulations and Annex 1 requirements.

1.1.2 All references in this manual to Annex 1 are based on the tenth edition of Annex 1, incorporating Amendments 1 to 170, and the references to PANS-TRG (Doc 9868) are based on the first edition of PANS-TRG, incorporating Amendment 2.

1.1.3 As outlined in Part I of this manual, Contracting States have three fundamental options to discharge their personnel licensing responsibilities. They can:

a) directly issue national licences;

b) issue national licences by converting licences issued by another Contracting State;

c) validate licences issued by another Contracting State.

1.1.4 In addition, States can delegate some licensing functions to other States, regional safety oversight organizations, service providers, national recreational flying bodies, or they may transfer some licensing functions and duties to another State under Article 83 *bis* of the Chicago Convention.

1.2 IMPORTANCE OF PROCEDURES

A personnel licence is evidence that the holder has the specified experience and competence to safely exercise the privileges in the State of issue and worldwide. This system is based on mutual confidence between States, so it is essential that State personnel licensing systems incorporate a high degree of technical accuracy, consistency and integrity. This requires robust procedures for personnel licensing to be established and implemented. To ensure the development and implementation of appropriate procedures and the continuous improvement of licensing activities, the PEL Office should consider implementing a quality management system or, if not possible, implementing a model of quality management concepts.

Note 1.— A quality management system may be established and implemented by the CAA for all or part of its directorates.

Note 2.— The International Organization for Standardization (ISO) 9001:2008 quality management standards provide a suitable model, are generic and are intended to be applicable to all organizations regardless of type, size and product provided.

1.3 ORGANIZATION OF PART II OF THIS MANUAL

1.3.1 Part II of this manual provides guidance for developing licensing procedures required by a State's personnel licensing system. It contains examples of regulations and procedures that may assist a State in developing its own tailored regulations, rules (or specific operating regulations) and procedures. These example regulations and procedures are produced in Attachments to the relative chapter.

1.3.2 These examples, sourced from various States, are not intended to be comprehensive or to reflect "best practice", and alternative regulations or procedures may be equally acceptable and better suited to a State's specific needs. Subsequent chapters are organized as follows:

a) Chapter 2 addresses the three methods of issuance of the standard licences and ratings prescribed by Annex 1 to the Chicago Convention: direct issuance, conversion and validation. The characteristics, advantages and disadvantages of each method are described, along with factors to be considered in selecting a particular method of licence issuance. Recognition of military experience for issuing a civilian licence is also covered.

b) Chapter 3 outlines a range of example tertiary legislation (termed "rules" in this chapter) on which licensing procedures may be based. It covers example rules for:

   1) pilot licences, ratings and certificates;

   2) other flight crew licences; and

   3) ground-based personnel licences and ratings.

c) Chapter 4 describes why the State needs to develop procedures to interpret the national regulations for the aviation system participants and provides one example of procedures.

d) Chapter 5 covers broad examining principles for assessing both theoretical knowledge and practical skills. It covers the importance of objective syllabi and sound examination/test design and delivery; it lists some basic administration considerations and outlines the qualifications required for examining staff.

e) Chapter 6 addresses procedures for assessing language proficiency. It covers:

   1) the rating scale descriptors and holistic descriptors that must be demonstrated for a speaker to meet the ICAO requirements;

   2) considerations for designing and developing a testing system; and

   3) some sample procedures for a semi-direct assessment system.

f) Chapter 7 addresses the approval and ongoing auditing of training programmes and approved training organizations (ATOs). More detailed information on the requirements and functionality of an ATO can be found in Doc 9841.

g) Chapter 8 addresses medical requirements for the organization of an aviation medical system, the designation of medical examiners and the medical assessment process, including the exercise of flexibility and the validity periods of medical assessments.

h) Chapter 9 addresses competency-based training and assessment. It provides some details on multi-crew pilot licence training and assessment as the first application of competency-based training for licences issued in accordance with Annex 1. ICAO recommends and supports competency-based training and assessment for Annex 1 licences and for other aviation personnel.

i) Chapter 10 addresses surveillance of licensed aviation personnel. The Licensing Authority must be confident that licensed aviation personnel can operate in a safe and competent manner within the privileges granted by their licences and/or associated ratings. Licensing risks can be systematically identified and assessed using threat and error management techniques. The Licensing Authority can evaluate the continuing competency of licence holders by conducting a variety of inspections and routine renewal checks, tests or competency demonstrations.

Chapter 2

ISSUANCE OF LICENCES

2.1 GENERAL

2.1.1 The personnel licences described in this chapter are those issued on the basis of the SARPs contained in Annex 1.

2.1.2 Flight crew personnel licensing is different in nature from ground personnel licensing because the requirement to hold a flight crew licence is specified by the Chicago Convention (Article 32 a)). International recognition of a flight crew licence is conditional on full compliance with ICAO Standards (Article 33), and any licence issued that does not fully comply with Annex 1 shall be endorsed accordingly by the issuing State (Article 39 b)).

2.1.3 No-one shall act either as pilot-in-command or as co-pilot of specified categories of aircraft (detailed in 2.2.1 a)) unless he or she holds a pilot licence. The category of aircraft shall be included in the title of the licence itself or endorsed as a category rating on the licence.

2.1.4 Although not specifically covered by the Chicago Convention, licences for some ground personnel are required by Annex 1. The provisions for these licences have been developed as part of the mandate to develop international standards in accordance with Article 37 of the Chicago Convention.

2.2 STANDARD LICENCES AND RATINGS PRESCRIBED BY ANNEX 1

2.2.1 Prescribed licences

International SARPs are established for licensing the following personnel:

a) Flight crew

1) private pilot — aeroplane, airship, helicopter or powered-lift categories;

2) commercial pilot ─ aeroplane, airship, helicopter or powered-lift categories;

3) multi-crew pilot ─ aeroplane category;

4) airline transport pilot ─ aeroplane, helicopter or powered-lift categories;

5) glider pilot;

6) free balloon pilot;

7) flight navigator;

8) flight engineer; and

9) flight radiotelephone operator.

Note.— Where an applicant has demonstrated competence in flight radiotelephony, a Contracting State may endorse a licence already held by the applicant or issue a separate licence as appropriate. Flight radiotelephony requirements are an integral part of all aeroplane, airship, helicopter and powered-lift pilot licences.

In accordance with Chapter 2 of Annex 1, a pilot shall hold a licence of the appropriate category to act as pilot-in-command or as co-pilot of an aircraft in any of the following categories:

- aeroplane;
- helicopter;
- powered-lift;
- airship of a volume of more than 4 600 cubic metres;
- free balloon; and
- glider.

b) Other personnel

1) aircraft maintenance personnel (the various terms for certifying personnel, such as "engineer", "mechanic" or "technician" are all acceptable to ICAO);

2) air traffic controller;

3) flight operations officer/flight dispatcher; and

4) aeronautical station operator.

Note.— Specific licensing regulations, with examples, are covered in Chapter 3 of this Part.

2.2.2 Different levels of pilot licences

Licences for pilots are organized in the following levels:

a) *Private pilot licence* (Annex 1, 2.3), which allows the holder to act, but not for remuneration, as pilot-in-command or co-pilot of aircraft within the appropriate category of aircraft engaged in non-revenue flights.

b) *Commercial pilot licence* (Annex 1, 2.4), which allows the holder:

1) to exercise all the privileges of a private pilot licence in an aircraft within the appropriate aircraft category;

2) to act as pilot-in-command of an aircraft within the appropriate aircraft category engaged in operations other than commercial air transportation;

3) to act as pilot-in-command, in commercial air transportation, of an aircraft within the appropriate aircraft category and certificated for single-pilot operation;

4) to act as co-pilot of an aircraft within the appropriate aircraft category required to be operated with a co-pilot; and

5) for the airship category, to pilot an airship under IFR.

Note.— Paragraph 2.1.10 of Annex 1 limits the privileges of pilots who have attained their 60th birthday and curtails the privileges of pilots who have attained their 65th birthday, when engaged in commercial air transport operations.

c) *Multi-crew pilot licence* (Annex 1, 2.5), which provides for the training of ab initio pilots directly for co-pilot duties, making use of modern instructional systems design (ISD) methodology and flight simulation training devices (FSTDs). The licence applies to the aeroplane category only and allows the holder:

1) to exercise the privileges of a multi-engine turbine-powered aeroplane type rating;

2) to exercise the privileges of the instrument rating in a multi-crew operation; and

3) to act as co-pilot of an aeroplane required to be operated with a co-pilot.

Note.— Paragraph 2.1.10 of Annex 1 limits the privileges of pilots who have attained their 60th birthday and curtails the privileges of pilots who have attained their 65th birthday, when engaged in commercial air transport operations.

d) *Airline transport pilot licence* (Annex 1, 2.6), which allows the holder:

1) to exercise all the privileges of a private or 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

2) 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.

Note.— Paragraph 2.1.10 of Annex 1 limits the privileges of pilots who have attained their 60th birthday and curtails the privileges of pilots who have attained their 65th birthday, when engaged in commercial air transport operations.

e) *Glider pilot licence* (Annex 1, 2.9), which allows the holder to act as pilot-in-command of any glider, provided the licence holder has operational experience in the launching method used.

f) *Free balloon pilot licence* (Annex 1, 2.10), which allows the holder to act as pilot-in-command of any free balloon, provided the licence holder has operational experience in hot air or gas balloons as appropriate.

Note.— Annex 1, 2.2, Student pilot, does not stipulate the requirements for the issue of a student pilot licence. However, it does state that a student pilot shall meet requirements prescribed by the Contracting State concerned and that, in prescribing such requirements for a student pilot authorization, Contracting States shall ensure the privileges granted would not permit student pilots to constitute a hazard to air navigation.

2.2.3 Ratings

2.2.3.1 Each licence should be endorsed with ratings that specify or extend the privileges of the licence. A rating is defined as an authorization entered on, or associated with, a licence and forming part of it, stating special conditions, privileges or limitations pertaining to such a licence.

2.2.3.2 Annex 1 establishes a certain number of ratings that are described in the following paragraphs. In addition, some States have established additional ratings to cater for specific operational conditions (such as landing on a mountain landing strip) or to cover specific activities (such as agricultural operations).

2.2.3.3 Procedures for issuing ratings for pilots and ground personnel are covered in paragraphs 2 and 6, respectively, of the Attachment to Chapter 3 of this Part.

2.2.4 Ratings provided in accordance with Annex 1

2.2.4.1 Annex 1, Chapter 2, prescribes requirements for the issue of the following pilot ratings:

a) *Category ratings* (Annex 1, 2.1.2), when established, shall be for categories of aircraft listed in 2.2.1 a) of this chapter.

b) *Class ratings* (Annex 1, 2.1.3.1) shall be established for aeroplanes certificated for single-pilot operation and shall comprise:

1) single-engine, land;

2) single-engine, sea;

3) multi-engine, land;

4) multi-engine, sea; and

5) other classes as established by the Licensing Authority, e.g. class ratings for those helicopters and powered-lifts certificated for single-pilot operation and which have comparable handling, performance and other characteristics.

c) *Type ratings* (Annex 1, 2.1.3.2) shall be established for:

1) aircraft certificated for operation with a minimum crew of at least two pilots;

2) helicopters and powered-lifts certificated for single-pilot operation except where a class rating has been issued; and

3) any aircraft whenever considered necessary by the Licensing Authority.

The requirements for the issue of class and type ratings are prescribed in Annex 1, 2.1.5.

d) An *instrument rating* (Annex 1, 2.1.7) is required to permit the holder of a pilot licence to act as a pilot-in-command or co-pilot of an aircraft operated under instrument flight rules. The instrument rating is an integral part of the airline transport pilot licence for the aeroplane or powered-lift category, the multi-crew pilot licence, and the commercial pilot licence for the airship category. The instrument rating is not normally included in the airline transport pilot licence (helicopter category) although that is not precluded by Annex 1. Annex 1, 2.7, prescribes the requirements for the issue of the instrument rating for the aeroplane, airship, helicopter and powered-lift categories.

e) A *flight instructor rating* (Annex 1, 2.8.2) allows the holder to supervise solo flights by student pilots and 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.

Annex 1, 2.1.8.1, also provides an alternative to an instructor rating which can be:

1) a specific authorization by the Contracting State; or

2) the authority to act as an agent of an ATO authorized by the Licensing Authority to carry out flight instruction.

Annex 1, 2.1.8.2, states that a person shall not carry out instruction on an FSTD required for the issue of a pilot licence or rating unless such a person holds or has held an appropriate licence, or has appropriate flight training and flight experience and has received proper authorization from the Contracting State.

It is important to note that the instructor rating contained in Annex 1 does not cover airline level training for either the preparation or renewal of the airline transport pilot licence and type ratings. Annex 1 requires (2.1.8.1) that the pilots providing such training be authorized. Annex 6, Part I (9.3.1) and Part III (Section II, 7.3.1) also require that properly qualified flight instructors, as determined by the State of the Operator, be provided for that purpose by the commercial air transport operator.

Annex 1, 2.8, prescribes the requirements for the issue of the flight instructor rating for aeroplane, airship, helicopter and powered-lift categories. Specific provisions for flight instructors carrying out instruction for the multi-crew pilot licence are contained in the PANS-TRG (Doc 9868).

2.2.4.2 Annex 1 does not prescribe a requirement for ratings for flight crew members other than pilots. The holder of a flight navigator licence may act as flight navigator of any aircraft, and the holder of a flight engineer licence may act as flight engineer on aircraft types for which the holder has demonstrated the requisite level of knowledge and skill. These aircraft types may be entered on the flight engineer licence or recorded separately but are not regarded as “ratings” as such.

2.2.4.3 Annex 1, Chapter 4, prescribes the requirements for licences for personnel other than flight crew members but is largely silent with regard to what must be recorded as a rating. For example:

a) Licensed aircraft maintenance personnel may certify as airworthy those aircraft or parts of the aircraft, either specifically or under broad categories, as are entered on the person’s licence although the scope of privileges is not necessarily recorded as a “rating”.

b) Similarly, the privileges of a flight operations officer/flight dispatcher licence are limited to the areas for which the holder meets the requirements specified in Annex 6, Part I, Chapter 10, or Part III, Section II, Chapter 8, but those specific areas do not necessarily have to be recorded as a “rating”.

c) Finally, before exercising the privileges of an aeronautical station operator licence, the holder must be familiar with all pertinent and current information regarding the types of equipment and operating procedures used at that aeronautical station but the equipment and operating procedures do not necessarily have to be recorded as a “rating”.

2.2.4.4 The only ratings for personnel other than flight crew members that are actually prescribed in Annex 1 are those in 4.5 for air traffic control ratings in the following categories:

a) aerodrome control rating;

b) approach control procedural rating;

c) approach control surveillance rating;

d) approach precision radar control rating;

e) area control procedural rating; and

f) area control surveillance rating.

2.2.5 Endorsements and authorizations

2.2.5.1 Article 39 b) of the Chicago Convention requires that any person holding a licence (with its associated ratings) who does not satisfy in full the conditions laid down in the international standard relating to the class of licence or certificate held shall have endorsed on or attached to that licence a complete enumeration of the particulars in which the holder does not satisfy such conditions.

2.2.5.2 Annex 1, Chapter 5, prescribes the specifications for personnel licences including: "Remarks, i.e. special endorsements relating to limitations and endorsements for privileges, including from 5 March 2008 an endorsement of language proficiency, and other information required in pursuance to Article 39 of the Chicago Convention".

2.2.5.3 For example, States may permit a pilot to receive endorsements from an authorized instructor when the pilot satisfactorily accomplishes the required training, such as:

a) complex aeroplane endorsement;

b) high performance aeroplane endorsement; or

c) high altitude aircraft endorsement.

2.2.5.4 The Licensing Authority may issue authorizations when an applicant satisfactorily accomplishes the requirements prescribed in the State's regulations for the authorization sought, such as:

a) a student pilot authorization (Annex 1, 2.2.1);

b) a flight instructor authorization (Annex 1, 2.1.8.1);

c) an instructor authorization for training in an FSTD (Annex 1, 2.1.8.2); or

d) inspection authorizations placed on an aircraft maintenance personnel licence.

2.2.5.5 An example of regulations for a certificate of inspection authorization is provided in Attachment A to this chapter.

2.2.6 Crediting of flight time

2.2.6.1 A certain amount of flight time may be credited towards a pilot licence or rating not held. Annex 1, 2.1.9, prescribes the general rules concerning the crediting of flight time for pilot licences and ratings:

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

b) 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 a Contracting State 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. The Contracting State may authorize that flight time be credited in full towards the total flight time required if the aircraft is equipped to be operated by a co-pilot and the aircraft is operated in a multi-crew operation.

c) 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.

d) 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.

2.2.6.2 Individual Contracting States may then expand on these basic prescriptions to include details of what grades of pilot licences would be involved, crediting of instrument flight time, etc.

2.2.6.3 An example of a State's regulatory requirements concerning crediting of flight time is provided in Attachment B to this chapter.

2.2.6.4 Contracting States may also wish to establish guidelines for the cross-crediting of flight experience as a pilot of aircraft in other categories to meet licence requirements. This is allowed for in Annex 1 (e.g. in 2.4.3.1.2), but requires the State to establish the appropriate specific licensing regulations. For example, to meet the total aeroplane commercial pilot licence experience requirements, a State may allow cross-crediting applications such as those provided in Attachment C to this chapter.

2.3 ISSUANCE OF LICENCES BY A CONTRACTING STATE

2.3.1 General

2.3.1.1 Article 32 a) of the Chicago Convention states that "the pilot of every aircraft and the other members of the operating crew … shall be provided with certificates of competency and licences issued or rendered valid by the State in which the aircraft is registered".

2.3.1.2 This article clearly establishes that a national licence issued by the State of Registry and a validation by that State of a licence issued by another Contracting State grant the same privileges. The responsibility of the State of Registry is the same in both cases. These two processes (issue or validation) give three options for a State to fulfil its personnel licensing function: licence issue by direct issuance, licence issue by conversion, or licence validation.

2.3.1.3 There are, nevertheless, significant differences between the procedures used for the issuance and validation of personnel licences. This paragraph analyses the characteristics of each option and provides guidance on how to best use them.

2.3.1.4 The issuance of a licence requires the issuing State to ensure that the applicant meets all the requirements contained in its national regulations and in the relevant provisions of Annex 1 (such as age, knowledge, experience, skill, training and medical fitness). The two options for the issuance of a licence are direct issuance of a licence or conversion of a foreign licence.

2.3.2 Direct issuance

2.3.2.1 When a State establishes its own system of ensuring compliance with each of the personnel licensing requirements before issuing a licence, the process is referred to as a "direct issuance of licence" or, in short, "issuance of a licence". The methods of ensuring compliance can be diverse. For instance, determination of knowledge requirements includes direct examination by the State, reliance on a designated examiner, or accepting an examination

system administered by an independent service provider or another State. However, the basic criterion for direct issuance of licences is that the State has a system to ensure compliance with all of the personnel licensing requirements before issuing the licence.

2.3.2.2 Direct issuance provides the highest level of control by the issuing State. It requires the Licensing Authority to develop the proper regulations and procedures and to establish a system of ensuring compliance with all the requirements (age, knowledge, experience, instruction, language proficiency, skill and medical fitness) before issuing a licence and medical assessment.

2.3.2.3 In the issuance phase, the CAA licensing inspector or PEL Office staff member confirms all phases of the licensing process (application phase, evaluation phase, demonstration phase (knowledge test), demonstration phase (skill test), and issuance phase) have been completed successfully before issuing the licence, rating or authorization. If it is determined that the applicant is eligible and has successfully demonstrated the knowledge and skills required for the licence, the licence can be issued.

2.3.2.4 Any personnel licence issued by a Contracting State in accordance with the relevant provisions of Annex 1 shall conform to the specifications (detail, material, language and arrangement of items) laid out in Annex 1, Chapter 5. A Contracting State having issued a licence shall ensure that other States are able to easily determine the validity and privileges of the licence and associated ratings.

2.3.2.5 An example of the issuance process is provided in Attachment D to this chapter.

2.3.3 Conversion

2.3.3.1 States can also issue a national licence based on a foreign licence, thus accepting the fact that holding a licence issued by another Contracting State is a way to demonstrate compliance with its own national licensing regulations. The process is referred to as a "conversion of licence".

2.3.3.2 Conversion of a licence from another Contracting State can be done on an individual basis by checking each foreign licence to determine if a converted licence can be issued. Another method is to make an arrangement with another Contracting State where the State converting a licence relies upon the licensing system of the other Contracting State. When dealing with an individual conversion, the State must establish a system to ensure the continuing validity of a converted licence once it is issued and to provide for additional ratings. However, when the State has made an arrangement regarding licence conversion with another Contracting State, the State could also delegate the maintenance of the converted licences to this other Contracting State.

2.3.3.3 The State shall confirm that the licence is valid in the case of a licence with commercial air transport operations privileges, by contacting the foreign CAA that issued the licence. The Licensing Authority should ensure that all applicable national and ICAO requirements have been met.

2.3.3.4 Examples of regulations/procedures for the conversion of flight crew licences is provided in Attachment E to this chapter.

2.3.4 Validation

2.3.4.1 A State can render valid, for use on aircraft on its own registry, licences issued by other Contracting States. The validation of a foreign licence is defined in Annex 1 as "the action taken by a Contracting State, as an alternative to issuing its own licence, in accepting a licence issued by any other Contracting State as the equivalent of its own licence".

2.3.4.2 A validation cannot be used without the supporting licence. The privileges of the validation are always conditional on the continuing validity of the supporting licence and may not exceed the privileges of the supporting licence. Annex 1 requires that the Licensing Authority confirm the validity of the foreign licence prior to issuing a validation for use in commercial air transport operations. The Licensing Authority should ensure that all applicable national and ICAO requirements have been met.

2.3.4.3 Validation of a licence from another Contracting State can be done on an individual basis. Each foreign licence must be checked to assess whether a validation certificate can be issued. As with licence conversion, validation may also be accomplished by arrangement with another Contracting State where the validating State relies upon the licensing system of the other Contracting State.

2.3.4.4 Examples of rules/regulations/procedures for the validation of flight crew licences are provided in Attachment F to this chapter.

2.3.5 State responsibility

2.3.5.1 It is important to note that the method chosen by the Licensing Authority (direct issuance, conversion or validation) does not change the responsibility of a State regarding its obligation under the Chicago Convention.

2.3.5.2 By issuing a licence by direct issuance or conversion or by validating a foreign licence, a State certifies to all the other Contracting States that the person is competent to exercise the privileges of the licence and that he or she meets all the applicable ICAO and national requirements. It is therefore important that, even when the licensing action is based on a licence issued by another Contracting State, the Licensing Authority ensure that all applicable requirements are met.

2.3.5.3 The Chicago Convention gives the responsibility of flight crew licensing to the State of Registry. As a consequence, States have flight crew licensing responsibility only when they have aircraft on their register. Some Contracting States have decided not to accept aircraft on their register and so, for all practical purpose, are relieved from their personnel licensing responsibilities. This is normally a political decision, and States should be aware of the measures which must be taken in the personnel licensing field should the policy on aircraft registry be changed. In a few rare cases, to allow domestic aviation activities in their territory, States without an aircraft registry often enter into an agreement with another State to register these aircraft used in domestic operations and oversee their operations.

2.3.5.4 When a State of Registry is unable or does not want to undertake PEL licensing functions, it may delegate these functions. Examples for which an Authority may want to delegate some of its functions include the absence of necessary human, technical or material resources or situations when aircraft on the national registry are leased abroad. In such cases, the State of Registry may enter into agreements with other Contracting States, organizations or service providers to fulfil some of its obligations. If the State Licensing Authority delegates functions, it still retains responsibility for personnel licensing, except when relieved of that responsibility under an agreement according to Article 83 *bis* of the Chicago Convention (see Part I, Chapter 6, 6.3, of this manual).

2.4 SELECTION OF ISSUANCE METHOD

2.4.1 General

2.4.1.1 The three methods described in 2.3 are equally valid and many States with a large PEL system use them concurrently. The choice between direct issuance, conversion and validation of licences depends on how the competency of the applicant is best assessed for the issue, conversion, validation, renewal or reissue of a licence.

2.4.1.2 The "direct issuance of licence" is the method that provides the highest level of control to the issuing State. It requires the Licensing Authority to develop the proper regulations and procedures and to establish a system of assessing the applicant's knowledge, skill, medical fitness, experience and instruction received in respect of licences, ratings, authorizations and approvals.

2.4.1.3 The "conversion of licence" allows the State to issue its own licences without establishing a full licensing system. Even when a State has a full licensing system, this method can expedite the process for a foreign licence holder to obtain a national licence. In any case, the State must establish a system to ensure the continuing validity of a licence once it is issued and to provide for additional ratings.

2.4.1.4 The "validation of licence" does not require the organization of a system for assessing the competency of the applicants. However, it does require the establishment of a system of assessment of the foreign licence supporting the validation of the licence, to assess its validity and privileges, and to ensure that it is genuine and complies with ICAO Standards.

2.4.1.5 The selection of issuance method depends on a number of factors, including the size of the PEL Office. Typically, PEL Offices of different sizes carry out licensing functions using the methodologies as described in Part I, Chapter 2, 2.3.

2.4.2 Characteristics of each option

From the Licensing Authority perspective, the main difference between direct issuance, conversion and validation of licences is the manner in which the competency of the applicant is assessed for the issue or renewal of a licence. These differences are summarized in Table II-2-1.

2.4.3 Advantages and disadvantages of each option

Table II-2-2 provides some of the advantages and disadvantages of direct issuance, conversion and validation of licences and describes the situation to which each option is best suited.

2.5 RECOGNITION OF MILITARY QUALIFICATIONS AND EXPERIENCE

2.5.1 General

2.5.1.1 The Chicago Convention does not apply to State aircraft, including those used in military, customs and police services. Therefore, depending on the requirements of the State, persons operating State aircraft do not need to hold an ICAO licence. This section details how such personnel (generally serving or former members of military forces) may be granted an ICAO licence.

2.5.1.2 Annex 1 requires applicants for licences to meet specified requirements in respect of age, knowledge, experience, skill and medical fitness. However, each Licensing Authority may determine the manner by which knowledge and skill required for licences or ratings are to be demonstrated. A Licensing Authority may accept certain military qualifications and experience as being equivalent to some or all of the knowledge and skill requirements that must be demonstrated by civilian applicants and may issue a licence or rating on that basis.

2.5.1.3 In order to ensure the integrity of this equivalence, the Licensing Authority must be aware of the training received and of the operations or activities conducted by the armed forces' applicant. In practice, this usually means that more weight is given to qualifications and experience gained in national, or closely aligned, military forces, which can be satisfactorily verified.

Table II-2-1. Main differences between direct issuance, conversion and validation of licences

	Direct issuance	*Conversion*	*Validation*
Issuance	• There is no prerequisite to hold a licence. • The Licensing Authority has established a system of ensuring compliance with all the requirements (age, knowledge, experience, skill, instruction received, language proficiency, medical fitness) before issuing a licence.	• The applicant must hold a licence issued by another Contracting State. • The Licensing Authority accepts the fact that holding a foreign licence from that Contracting State is an acceptable way to demonstrate compliance with its own national licensing regulations and ICAO requirements.	• The applicant must hold a licence issued by another Contracting State. • By issuing a validation certificate, the Licensing Authority accepts that the foreign licence is the equivalent of its own licence.
Licence validity	• The validity of the licence depends on the holder maintaining competency and meeting recent experience requirements set by the State.	• The validity of the licence depends on the holder maintaining competency and meeting recent experience requirements set by the State. • After conversion, the original licence may lapse without impacting the validity of the converted licence.	• The holder must maintain competency and meet recent experience requirements set by the issuing State in order to keep the supporting licence valid. • The validation certificate may be more restrictive (in terms of duration and privileges) than the supporting licence.
Extension of privileges	• Additional ratings can be added in accordance with national requirements.	• Additional ratings can be added to the converted licence in accordance with the national requirements.	• Additional ratings must be added to the supporting licences before they can be taken into account in the validation (a validation certificate cannot provide more privileges than the supporting licence).

Table II-2-2. Advantages/disadvantages of direct issuance, conversion and validation of licences

	Direct issuance	*Conversion*	*Validation*
Advantages	• The personnel licensing process is completely controlled by the State. • Can be tailored to the specific needs of the State.	• Does not require the establishment of a full personnel licensing system. • No need to maintain the supporting foreign licence valid once the conversion is complete. • Ratings may be added to a converted licence.	• The only requirement for the State issuing the validation is to ensure that the supporting licence is genuine and valid and that the privileges and validity to be granted do not exceed those of the original licence.
Disadvantages	• Appropriate licensing regulations and procedures need to be developed. • Requires a system to ensure compliance of an applicant with the requirements for issue of a licence or rating and for licence holders to maintain the validity of their licence and ratings.	• Need to establish procedures required to assess foreign licence validity and compliance with requirements. • Need to envisage the possibility of endorsing new ratings on the licence. • Potential difficulties in establishing the origin of the foreign licence when the conversion process is repeated several times.	• Need to keep the supporting licence valid in accordance with the requirements of the issuing State. • The validity and the privileges of the validation cannot exceed those of the supporting licence. • It is more difficult to add new privileges to the validation because they have to be incorporated first on the supporting licence.
Best suited	• When the State issues a sufficient number of licences (e.g. more than 100 active licences) at the same level in the same category.	• To provide a licence to nationals who have been trained abroad, long-term expatriates (e.g. more than one year) or foreign nationals wishing to work or fly within the State.	• To provide short-term authorization to fly aircraft on the national registry to the holder of a licence issued in another Contracting State.

2.5.1.4 Applicants whose privileges include radiotelephony communication must meet Annex 1 requirements for the demonstration of language proficiency. Also, where holding a current medical assessment is required to exercise the privileges of the licence sought, the applicant should complete an appropriate class of medical assessment prior to licence issue.

2.5.1.5 Most commonly, the recognition policy applies to pilots but it may also apply to other flight crew or ground personnel.

2.5.2 Recognition of military pilot qualifications (not applicable to the MPL)

2.5.2.1 Annex 1 requires applicants for pilot licences to demonstrate, commensurate to the privileges of the licence sought, a level of knowledge and the ability to competently perform specified procedures and manoeuvres as pilot-in-command of an aircraft within the appropriate category of aircraft.

2.5.2.2 It also requires applicants to have completed not less than a specified amount of flight time as a pilot of the aircraft category and, as applicable, appropriate to the class rating for the licence sought. A minimum amount of relevant dual instruction is also required.

2.5.2.3 The Licensing Authority must establish, for each of the following licences, the degree to which various military qualifications would be recognized as meeting the above minimum requirements:

a) *private pilot:* aeroplane, helicopter or powered-lift categories;

b) *commercial pilot:* aeroplane, helicopter or powered-lift categories;

c) *airline transport pilot:* aeroplane, helicopter or powered-lift categories.

2.5.2.4 Equivalence for glider, airship or free balloon military qualifications is not addressed in this section, but if the requirement arises, there is no reason why a Licensing Authority could not provide an equivalence scheme in accordance with the provisions of Annex 1 and the principles outlined in this section.

2.5.2.5 Applicants for recognition of military qualifications should demonstrate, in a manner acceptable to the Licensing Authority, compliance with the Annex 1 language proficiency requirements prior to licence issue.

2.5.2.6 Military pilots may have been trained to treat various aspects of aviation differently from civil aviation requirements, including regulations and procedures, performance calculations and flight planning operational techniques, so that carte-blanche approval is not appropriate. A Licensing Authority may consider that a graduated approach best meets the State's needs; for example it may determine that a PPL — aeroplane may be issued to a current and experienced military aeroplane pilot without any further need to demonstrate knowledge or skill, while a military pilot not currently flying multi-crew aircraft may need to pass examinations in air law and flight planning and pass a skill test to be issued with an ATPL — aeroplane. Training and operations in separate branches of the military may be such that each branch needs to be treated differently.

2.5.2.7 The only way that the Licensing Authority can adequately approve the appropriate equivalence is for PEL staff to develop a good understanding of the aviation theoretical (knowledge) and practical training received by various groups of military pilots as well as the general types of flying conducted.

2.5.2.8 The Licensing Authority should also establish procedures for determining relevance of flight experience. This may differ by various levels of licence or rating being sought, as well as by recency or operational experience as follows:

a) *Currently serving on active duty:* Depending on the current flying duties, maximum permissible credit may be granted for the licence or rating sought.

b) *Currently serving but not on active duty:* This is the period since the last flight check was completed for the appropriate category of aircraft or since active duty ceased. Also, more leeway might be given for a PPL than for a CPL or an ATPL.

c) *No longer serving:* The situation is similar to serving personnel not on active duty although verification of qualifications and experience becomes more difficult. Demonstration of requisite skill by successfully completing the appropriate flight test is generally required.

d) *Foreign military pilots:* In addition to the considerations above, national conditions and requirements should be taken into account. For example, local meteorological patterns and conditions may justify a requirement to pass a theoretical meteorology examination, or the general topography may justify a requirement for mountainous terrain flying training.

2.5.2.9 Full or partial credit for instrument ratings or instructor ratings may be given, although it is very important for the Licensing Authority to take account of the differences between military and civil methodologies.

2.5.3 Recognition of qualifications of other military personnel

2.5.3.1 The principles as detailed in 2.5.2 for military pilots apply to military applicants for flight navigator or flight engineer licences. It is essential that PEL staff understand the training and capabilities of those military personnel so that the correct equivalence can be granted.

2.5.3.2 Military flight engineers and flight navigators should at least be required to pass the respective air law examination and, if not in current flying practice, should be required to pass a skill test.

2.5.3.3 Military flight engineers or navigators often apply for pilot licences, and depending on individual qualifications and circumstances, some knowledge demonstration credits may be given.

2.5.3.4 Military aircraft maintenance personnel generally operate to different maintenance philosophies than their civil counterparts so care needs to be taken in assessing the equivalence. Suitably qualified and experienced military technicians or engineers generally will have sufficient theoretical knowledge of science, aircraft engineering and human performance and be competent to inspect, service and maintain aircraft and components, but probably will not have sufficient knowledge or experience of civil certification processes or civil aviation law. The evaluation of the maintenance personnel's qualifications must consider that such personnel are often specialized in a particular aircraft system, component, engine or structure and not necessarily in the aircraft as a whole. Therefore, policy with respect to recognition of military aviation maintenance qualifications must take account of national civil and military practices and requirements.

2.5.3.5 If military air traffic controllers are not fully familiar with civil operational procedures and operate in accordance with military law and provisions, they should demonstrate the standard of knowledge required by Annex 1 as well as complete no less than three months of satisfactory service engaged in the actual control of civil air traffic, under the supervision of an appropriately rated air traffic controller, before being issued with a licence.

2.5.3.6 Military flight operations officers work in a different environment and generally do not carry out the same duties as civil flight operations officers or flight dispatchers. However, a military flight operations officer might qualify for some knowledge demonstration credits. Before a licence is issued, the applicant should have served under the supervision of a civil flight operations officer/flight dispatcher for at least 90 working days.

2.5.4 Example procedures for the recognition of military pilot qualifications

Paragraphs 2.5.1 and 2.5.2 make it quite clear that the degree of recognition of skill and knowledge accorded to serving or former military pilots depends on a variety of factors, including the form and content of military initial and operational training, type of aircraft flown, recency of experience, and national civil requirements. No single recognition system will be appropriate for all States but example procedures consistent with the principles outlined in 2.5 are provided in Attachment G to this chapter.

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Attachment A to Chapter 2

EXAMPLE OF REGULATIONS FOR A CERTIFICATE[1] OF INSPECTION AUTHORIZATION

a) A certificate of inspection authorization recognizes the more senior aircraft maintenance engineer licence holders and authorizes additional privileges and responsibilities on those persons that include certification of annual reviews of airworthiness and major modifications and repairs.

b) *Eligibility:* To be eligible for a certificate of inspection authorization a person shall:

   i) hold a rated aircraft maintenance engineer licence, issued under this Part in both aeroplane and engine categories, or in both rotorcraft and engine categories, and at the time of application have:

      1) held the licence for a period of at least 60 months; and

      2) met the recent experience requirement prescribed by the Director for a period of at least 60 months; and

   ii) have, within the immediately preceding 24 months:

      1) exercised the privileges of an aircraft maintenance engineer licence; or

      2) supervised, in an executive capacity, the maintenance of aircraft; and

   iii) have passed an examination in airframe overhaul that is acceptable to the Director; and

   iv) have successfully completed a course of instruction and passed a written examination on the inspection of aircraft and components for conformity with the Rule, conducted by:

      1) the holder of an aviation training organization certificate; or

      2) the Director.

c) *Knowledge.* The applicant for a certificate of inspection authorization shall have passed a written examination conducted by the Director covering the following topics:

   i) Inspection authorization

      Eligibility requirements
      Privileges and limitations
      Expiry
      Recent experience requirements
      Conditions

1. The “certificate” in this example is equivalent to an endorsement on the licence for additional privileges.

ii) Airworthiness

Aircraft airworthiness
Certificates of airworthiness
Certification procedures for products and parts
Type certificates
Type certificate data sheets (TCDS)
FAA TCDS
U.K. TCDS
Supplemental type certificates

iii) Annual Review of Airworthiness

Aircraft identification
Modification status
Type certificates conformity inspections
Airworthiness directives
Log book entries
Maintenance records
Inspections and extensions
Progressive inspections
Approved maintenance programmes
Weight and balance
Flight manuals
Aircraft equipment lists
Manufacturers' service information
Aircraft condition inspection
Responsibilities to the aircraft owner under the inspection authorization

iv) Major repairs and modifications

Major modification
Major repair
Recording the certification of conformity
Approved technical data

v) Miscellaneous items

Aircraft parts
Mandatory occurrence reports
Rulemaking procedures
Data plates
Enforcement
Aviation statistical data
Publications information

vi) Forms

CAA Form xy1 "Design change (application for approval of technical data)"
CAA Form xy2 "Conformity certificate (major modification, major repair)"
CAA Form xy3 "Authorized release certificate"
CAA Form xy4 "Domestic part label"

CAA Form xy5 “Application for inspection authorization certificate (initial issue or renewal)”
Log books
Technical log

d) *Recent experience.* The holder of a certificate of inspection authorization shall not exercise the privileges of that certificate unless, within the preceding 12 months, the holder has:

i) performed four annual reviews of aircraft maintenance in accordance with the maintenance rules; or

ii) certified four aircraft or components for conformity with the data listed in the maintenance rules after completion of major repairs or major modifications; or

iii) performed a combination of subparagraphs i) and ii); or

iv) successfully completed a refresher course comprising at least eight hours of instruction that is acceptable to the Director; or

v) successfully completed an examination acceptable to the Director.

e) *Privileges and limitations.* Subject to paragraph f), a certificate of inspection authorization entitles the holder to:

i) perform an annual review of aircraft maintenance in accordance with the maintenance rules; and

ii) certify conformity with the technical data listed in the maintenance rules after completion of major repairs and major modifications.

f) A person shall not exercise the privileges specified in paragraph e) unless that person has available the equipment, facilities, and inspection data necessary to properly inspect airframes, engines, propellers, or any related part or component.

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Attachment B to Chapter 2

EXAMPLE OF A STATE'S REGULATORY REQUIREMENTS CONCERNING CREDITING OF FLIGHT TIME

a) The holder of a current pilot licence, when acting as co-pilot in an aircraft required to be operated with a co-pilot, is entitled to be credited with not more than 50 per cent of the co-pilot flight time towards the total flight time experience required for an airline transport pilot licence.[1]

b) The holder of a commercial pilot licence, when acting as co-pilot on an air transport operation in an aircraft required to be operated with a co-pilot, is entitled to be credited with command practice flight time experience for the flight time during which the co-pilot performs the duties and functions of a pilot-in-command under the supervision of a pilot-in-command designated for the purpose by the operator, but only if:

   i) the co-pilot is responsible for checking the accuracy of the proposed flight plan and the load manifest for the flight, including the computation of fuel; and

   ii) the co-pilot ensures that each crew member has carried out all the applicable checks during the following phases of the flight, and in accordance with the check system established by the operator in the operations manual or other relevant documents: before take-off, on take-off, in flight, on landing and in any emergency; and

   iii) during the flight the co-pilot carries out all the duties and functions of a pilot-in-command so far as is practical from the co-pilot flight station; and

   iv) in the case of operations conducted by automatic means, the co-pilot makes all the decisions relating to the use of the flight and ground systems involved; and

   v) the co-pilot ensures that all problems arising from meteorological conditions, communications and air traffic control procedures are resolved; and

   vi) the pilot-in-command designated to supervise the co-pilot has certified an appropriate entry in the co-pilot's logbook, or a permanent record of the flight has been made by the operator.

c) A pilot who manipulates the flight controls of an aircraft under actual or simulated instrument flight conditions solely by reference to instruments and without external reference points is entitled to be credited with the instrument flight time acquired in this way towards the total instrument flight time experience required for:

   i) a higher grade of pilot licence; or

   ii) an instrument rating; or

   iii) the recent experience requirement of an instrument rating already held.

1. This example is more restrictive than Annex 1, 2.1.9.2.

d) A pilot-in-command, when supervising a co-pilot manipulating the flight controls of a multi-pilot aircraft under actual instrument meteorological conditions, is entitled to be credited with the instrument flight time.

e) A flight instructor, when supervising a pilot manipulating the flight controls of an aircraft under actual instrument meteorological conditions, is entitled to be credited with the instrument flight time.

f) A flight examiner is entitled to be credited with pilot-in-command flight time while carrying out a flight test.

g) A flight instructor is entitled to be credited with pilot-in-command flight time while carrying out a commercial pilot licence cross-country flight test.

h) A pilot may credit flight time recorded as pilot-in-command under supervision (PIC/US) towards the flight time experience requirements for an airline transport pilot licence.

i) A pilot who is designated as pilot-in-command to supervise a pilot undergoing consolidation of operating experience may not credit the pilot-in-command flight time towards the flight time experience requirements for an airline transport pilot licence if the supervision is carried out in a single-pilot aircraft.

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Attachment C to Chapter 2

EXAMPLE OF CROSS-CREDITING APPLICATIONS TO MEET THE TOTAL AEROPLANE COMMERCIAL PILOT LICENCE EXPERIENCE REQUIREMENTS

Where an applicant produces acceptable evidence of piloting experience in aircraft other than aeroplanes, half the pilot-in-command time experienced within the immediately preceding 12 months, up to the maximums that follow, may be credited towards the total flight experience required, but not to the specific flight experience[1] required:

i) for helicopters, 60 hours;

ii) for gliders or powered gliders, 25 hours;

iii) for three-axis microlights, 20 hours; and

iv) for all three categories, 60 hours.

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1. Such as night-time, cross-country experience, etc.

Attachment D to Chapter 2

EXAMPLE OF THE ISSUANCE PROCESS

a) the issue, renewal and reissue of licences, ratings, authorizations, designations and certificates will take place when the applicant meets all the State's documented requirements;

b) the issue, renewal and reissue of licences, ratings, authorizations, designations and certificates will be performed by the Licensing Authority;

c) the application for the issue, renewal and reissue of licences, ratings, authorizations, designations or certificates by the Licensing Authority shall be done by submitting to the Licensing Authority a properly filled out form, which can be obtained from the Licensing Authority;

d) the application form will be reviewed to determine if the skill test has been successfully completed;

e) the report block of the CAA (Licensing Authority) on the application form should have been completed;

f) the licence will be prepared;

g) the licence will be issued to the applicant;

h) a fee will be collected;

i) a rating or authorization will be issued as follows:

   i) the Licensing Authority may issue or reissue a rating or authorization;

   ii) in cases of renewal, the Licensing Authority can select a system where the designated examiner can renew a rating and/or authorization, after the holder has successfully performed a skill test/proficiency check;

   iii) if, in accordance with the PEL system procedures, some authorizations are not endorsed on the licence, a separate authorization document shall be issued, such as a student pilot authorization.

This same process also applies to applicants seeking an additional rating, certification or authorization.

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Attachment E to Chapter 2

EXAMPLES OF REGULATIONS/PROCEDURES FOR THE CONVERSION OF FLIGHT CREW LICENCES

EXAMPLE OF A CONTRACTING STATE'S REGULATIONS FOR THE CONVERSION OF FLIGHT CREW LICENCES

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

   i) the holder shall present to the Licensing Authority the foreign licence, evidence of experience required by presenting the record (e.g. logbook) and current medical certificate;

   ii) the holder shall present to the Licensing Authority evidence of language proficiency in the language used for radiotelephony communications in the State, or in English, as specified by Annex 1 and the State's regulations, or shall demonstrate to the Licensing Authority the language proficiency skills as specified by the State;

   iii) the holder shall obtain a Class 2 medical certificate issued under the State requirements;

   iv) the holder shall demonstrate to the satisfaction of the Licensing Authority knowledge of national air law;

   v) the holder shall complete a PPL skill test;

   vi) the Licensing Authority will verify the authenticity of the licence, ratings, authorization and of the medical certificate with the State of licence issue prior to converting the licence.

b) *Conversion of a PPL/IR, CPL, CPL/IR, MPL, ATPL or flight engineer licence, which has been validated.* The holder of a current and valid foreign PPL/IR, CPL, CPL/IR, MPL, ATPL or flight engineer licence, and corresponding medical certificate, issued by another Contracting State in accordance with Annex 1, may apply for conversion to the appropriate licence and ratings issued by the State provided the following requirements are met:

   i) the applicant is the holder of a current validation certificate issued in accordance with the State's procedures;

   ii) the applicant has completed 200 flight hours in State-registered aircraft, which are operated by an operator established in the State, exercising the privileges granted by the validation certificate;

   iii) the applicant for the conversion shall present to the Licensing Authority the foreign licence and evidence (e.g. logbook) of the 200 flight hours; and

iv) the applicant shall hold or obtain a medical certificate issued in accordance with the State's procedures, appropriate to the level of the licence to be converted.

Ratings listed on a person's licence that have been validated in accordance with the State's procedures may be placed on that person's converted licence.

EXAMPLE OF PROCEDURES FOR THE CONVERSION OF FLIGHT CREW LICENCES ON THE BASIS OF THE LICENSING SYSTEM OF ANOTHER CONTRACTING STATE

a) The Licensing Authority that issues a converted licence based on a licence from another Contracting State assumes responsibility for the converted licence.

b) The Licensing Authority should, before making any agreement (between itself and the other Contracting State about recognition of licences), be satisfied that the other Contracting State issues licences in accordance with the Licensing Authority's own regulatory procedures and requirements by conducting a regulatory comparison of the licensing systems and requirements.

c) An inspector, legal counsel and/or licensing subject matter expert must conduct an evaluation of the other Contracting State's PEL system to be satisfied that the licensing system in the other Contracting State is in accordance with the Licensing Authority's own systems and requirements. A report describing the basis for the decision and the regulatory comparison noted above shall serve as the basis for a government-to-government agreement between the two States regarding use or reliance of the licensing system.

d) Renewal and reissue of converted licences and ratings:

   i) when examiners are available in the State to perform proficiency checks for the renewal of rating(s) or skill tests for the reissue of the licence or rating(s), these tests/checks will be performed by the authorized examiners of the State;

   ii) when examiners are not available in the State to perform proficiency checks for the renewal of the rating(s) or skill tests for the reissue of the licence or rating(s), the availability of examiners for these tests/checks from the other Contracting State may be arranged as agreed by the States.

e) Application for the conversion of a licence from another Contracting State shall be done by submitting to the Licensing Authority a properly filled out form, which can be obtained from the Licensing Authority.

f) The conversion of medical certificates, and/or reliance on medical examinations conducted in the other State, may also be addressed in the agreement between the States.

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Attachment F to Chapter 2

EXAMPLES OF RULES/REGULATIONS/PROCEDURES FOR THE VALIDATION OF FLIGHT CREW LICENCES

EXAMPLE OF A CONTRACTING STATE'S CIVIL AVIATION RULE/REGULATION FOR THE VALIDATION OF FLIGHT CREW LICENCES

a) *General requirements for validation:*

i) 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 the State;

ii) the applicant for the validation certificate shall present to the Licensing Authority the foreign licence and evidence of the experience required by presenting the record (e.g. logbook);

iii) the applicant for the validation certificate shall present to the Licensing Authority evidence that he/she holds either a current medical certificate issued in accordance with the State's procedures or a current medical certificate issued by the Contracting State that issued the applicant's licence;

Note.— The Licensing Authority 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 the State, relevant to the licence held.

iv) the applicant for the validation certificate shall present to the Licensing Authority evidence of language proficiency in the language used for radiotelephony communications in the State, and/or in English, as specified in Annex 1 and the State's regulations or shall demonstrate to the Licensing Authority the language proficiency skills as specified. The validation shall be limited for use on State-registered aircraft within the State if the pilot is not proficient in the English language;

v) the Licensing Authority will verify the authenticity of the licence, ratings, authorizations and of the medical certificate with the State of licence issue prior to issuing the validation;

vi) with the validation of a licence, the Licensing Authority will validate only those ratings or authorizations endorsed on the foreign licence that it considers appropriate; and

vii) the Licensing Authority may issue a validation certificate which will be valid for one year, provided the foreign licence, ratings or authorizations and the medical certificate remain valid.

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

c) *Validation certificate with PPL/IR, CPL, CPL/IR, MPL, ATPL or FE privileges.* In addition to the requirements in a) above, the applicant for a validation certificate for these privileges shall have the relevant foreign licence and meet the following requirements:

i) the applicant for the validation certificate shall demonstrate to the satisfaction of the Licensing Authority knowledge, relevant to the licence to be validated, of:

1) air law;

2) meteorology;

3) operational procedures; and

4) radiotelephony;

ii) the applicant for the validation certificate shall 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

iii) the applicant for the validation certificate shall comply with the experience requirements set out in Annex 1 or the State's regulations.

EXAMPLE OF A SET OF PROCEDURES FOR THE VALIDATION OF FLIGHT CREW LICENCES BY RELIANCE UPON THE LICENSING SYSTEM OF ANOTHER CONTRACTING STATE

a) The Licensing Authority should, before making any agreement (between itself and the other Contracting State about recognition of licences), be convinced that the other Contracting State issues licences in conformity with its own regulatory procedures and requirements by conducting a regulatory comparison of the licensing systems and requirements.

b) An inspector, legal counsel and/or licensing subject matter experts must visit the other Contracting State to ensure that the licensing system in the other Contracting State is in conformity with the Licensing Authority's own systems and requirements. A report describing the bases for the assessment of conformity shall be made to the Licensing Authority. The report and the regulatory comparison noted in item a) above shall serve as the basis for an agreement between the two States regarding use or reliance of the licensing system.

c) An air law knowledge demonstration examination must be arranged if the air law system of the State is different from the air law system of the other Contracting State.

d) Application for the validation certificate shall be done by submitting to the Licensing Authority a properly filled out form, which can be obtained from the Licensing Authority.

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Attachment G to Chapter 2

EXAMPLE PROCEDURES FOR THE RECOGNITION OF MILITARY PILOT QUALIFICATIONS

a) An applicant for recognition of military qualifications and experience must complete and forward to the Licensing Authority a completed application form, available from the Licensing Authority, stating:

   i) applicant's name and contact details;

   ii) current assignment;

   iii) civil licence and rating(s) sought;

   iv) military aviation qualifications and courses passed;

   v) aircraft flown;

   vi) date of last flight;

   vii) applicant's aircraft command status;

   viii) instrument or instructor ratings held;

   ix) hours flown as pilot-in-command;

   x) hours flown as co-pilot;

   xi) hours of dual instruction received; and

   xii) hours pertinent to national requirements (e.g. cross-country navigation or sling load hours).

b) In addition to the application form, the applicant must include his or her logbook (or other acceptable military record), acceptable evidence of qualifying as a military pilot, and the prescribed fee.

c) The PEL staff member assessing the applicant's qualifications and experience should confirm that all information has been supplied. If not, the process should be halted and the missing information sought from the applicant.

d) The applicant's logbook should be assessed to confirm that the applicant has sufficient experience for the licence or rating(s) sought. When the logbook assessment has been completed, photocopies of relevant pages should be taken for file records.

e) If there is inadequate information about any qualifications, clarification should be obtained from the applicant or verification sought from the military authority.

f) Once the assessment has been completed, the PEL staff member should draft a letter for the applicant advising him or her which qualifications have been recognized and what is required for licence issue (theory examinations, skill test, language proficiency assessment, medical assessment

and CAA administrative requirements). If the applicant's experience or qualifications do not qualify for the licence sought, the applicant must be advised of the reasons and the actions that are required to rectify the shortfall. The applicant should be advised if he or she qualifies for credits for, or towards, a lower licence.

g) Skill and knowledge requirements for radiotelephony procedures and phraseology are an integral part of all aeroplane, helicopter and powered-lift pilot licences, and a flight radiotelephone operator rating will be granted as a matter of course with each flight crew licence issued to military personnel.

h) Applicants for PPL (aeroplane):

   i) Pilots who satisfy the assessment criteria are not required to pass either the PPL theory examinations or a PPL (aeroplane) issue flight test.

i) Applicants for CPL (aeroplane):

   i) Pilots who satisfy the assessment criteria are required to pass the following CPL theory examinations: CPL air law; CPL principles of flight and aircraft performance (aeroplane).

   ii) Pilots who are in current flying practice on aeroplanes in the military at the time of application are not required to pass a CPL (aeroplane) issue flight test.

   iii) Pilots currently serving in foreign military forces who are in current military flying practice and seek the issue of a CPL (aeroplane) are required to pass a CPL (aeroplane) issue flight test and gain passes in the following theory examinations: CPL air law; CPL principles of flight and aircraft performance (aeroplane); CPL meteorology.

j) Applicants for ATPL (aeroplane):

   i) Pilots who are in current flying practice in the military at the time of application are required to provide evidence of having reached command status on operational roles in large military multi-crew aeroplanes.

   ii) Pilots who satisfy the assessment criteria are required to pass the following theory examinations: ATPL (aeroplane) air law; ATPL flight navigation general; ATPL flight planning; ATPL advanced aerodynamics performance and systems knowledge.

   iii) All applicants are required to hold a current military instrument rating and pass an ATPL (aeroplane) issue flight test conducted by a CAA flight examiner.

k) Applicants for an instrument rating:

   i) Pilots who hold a military instrument rating that has been issued or renewed within 90 days of the application date will be issued with a civil instrument rating.

   ii) Pilots who hold a military instrument rating that was issued or renewed more than 90 days before the application date are required to pass an instrument rating issue flight test.

   iii) Applicants must provide details of the navigation aids used during the military flight test.

Chapter 3

LICENSING RULES OR SPECIFIC OPERATING REGULATIONS

3.1 GENERAL

3.1.1 The Attachment to this chapter outlines a range of example licensing rules on which procedures may be based as described in Chapter 4. The examples are not intended to be comprehensive or to reflect international "best practice", but aim at assisting a Licensing Authority in developing national rules.

3.1.2 The examples are drawn from many sources and are consistent with Annex 1 requirements, except where a specific explanatory remark or a footnote draws attention to a difference with Annex 1. Such identified differences illustrate how a Contracting State has implemented Annex 1 provisions but elected to introduce a more stringent rule to satisfy identified specific national requirements.

3.1.3 If no such specific national requirement is identified, States should make every effort to implement rules that do not differ from Annex 1 in order to promote global harmonization of rules among States. This is especially important in regions where regional regulatory standardization bodies have been established to assist the States of the region in fulfilling their regulatory responsibilities.

3.2 VALIDITY OF LICENCES

3.2.1 A licence may be issued for a period of time determined by the State. Some States issue a licence valid for the lifetime of the holder while others issue licences for a specific period, at which point the licence requires reissue or re-validation. Whichever method is chosen by the State of issue, the privileges granted by that licence cannot be exercised unless the holder has a current medical assessment, maintains competency and meets the requirements for recent experience established by the State.

3.2.2 When a Licensing Authority renders valid a licence issued by another Contracting State, it shall issue a suitable authorization of validity to be carried with the original licence. This validity will cease to be effective if the original licence expires, is revoked or is suspended.

3.3 CROSS-CREW QUALIFICATIONS (MIXED-FLEET FLYING)

Note.— Cross-crew qualifications also apply to cabin crew members, but this lies outside the scope of this manual. However similar guidance would apply to cabin crew members.

3.3.1 Flight crew members' practices in relation to the operation of more than one type and/or variant of aircraft vary considerably among States. ICAO does not explicitly limit the number of types and/or variants upon which an individual crew member may be qualified to operate. However, Annex 6 requirements[1] for initial and recurrent training programmes and currency on type for cross-crew qualification (CCQ) and mixed-fleet flying (MFF) provide control measures for flight crew.

1. Annex 6, Part I, 9.3 and 9.4, or Part III, Section II, 7.3 and 7.4.

3.3.2 The Licensing Authority should require that operators maintain records of the qualification of pilots and of the manner in which the qualification was achieved and is maintained. Operators shall also check a flight crew member's piloting technique and ability to execute emergency procedures in order to ensure a pilot's competence on each type and/or variant of a type of aeroplane in accordance with Annex 6. Operators shall perform such checks twice within any period of one year, with the restriction that both checks are not performed within a period of four consecutive months.[2]

3.3.3 When a pilot-in-command, co-pilot or cruise relief pilot is flying several variants of the same type of aeroplane or different types of aeroplanes with similar characteristics in terms of operating procedures, systems and handling, the State shall decide if, and under which conditions, pilot proficiency checks for each variant or each type of aeroplane can be combined and under which conditions the recent experience requirements for each variant or each type of aeroplane can be combined.[3]

3.3.4 The Licensing Authority must ensure that the training and checking schedules of operators certificated by the State meet the requirements of CCQ and MFF.

3.3.5 The ICAO Flight Crew Licensing and Training Panel developed the following additional guidance to support CCQ and MFF:

a) Aircraft manufacturers have endeavoured to produce aircraft which have similar characteristics in terms of operating procedures, systems and handling with the objective of allowing flight crew to fly different aircraft of the same or similar family, with a minimum amount of additional initial and recurrent training. Contracting States have accepted this approach and cross-crew qualification, cross-credit for type rating in the same or similar aircraft family and mixed-fleet flying are routinely practised today. The central element of this system is a structured evaluation process that identifies the common elements and the differences between various aircraft and then determines requirements for initial and recurrent training and for maintenance of competency.

b) The flight crew recent experience and proficiency Standards in Annex 6, Part I, 9.4.1, 9.4.2 and 9.4.4, and Annex 6, Part III, Section II, 7.4.1 and 7.4.3, require that, in cases where a pilot is flying several variants of the same type of aircraft or different types of aircraft with similar characteristics in terms of operating procedures, systems and handling, the State of Registry decides if and how the recent experience or proficiency check requirements can be combined for each variant or type of aircraft. Notes are included along with these Standards that reference the guidance material contained in this document. Alternating proficiency checks between different types flown could be beneficial.

c) These Standards reflect contemporary industry practice and permit cross-crew qualification, cross-credits for type ratings obtained in the same or similar aircraft family and mixed-fleet flying. Licensing Authorities can combine the requirements for variants of the same type and for aircraft of different types in the same or similar family. This allows credits to be given for experience and training gained on an aircraft of the same or similar family for the purpose of obtaining a new type rating or for demonstrating recent experience on type. It also allows for the issuance of a "common type rating" for aircraft of the same or similar family.

d) Satisfactory implementation of any cross-crew qualification and/or mixed-fleet programme requires a highly structured evaluation process. Two such processes are the Flight Standardization Board (FSB) of either the United States Federal Aviation Administration (FAA) or Transport Canada and the Operations Evaluation Board (OEB) of the European Aviation Safety Agency (EASA), all of which identify the common elements and differences between various aircraft and determine requirements

2. Annex 6, Part I, 9.4.4.1, or Part III, Section II, 7.4.3.1.
3. Annex 6, Part I, 9.4.1.2 and 9.4.4.2, or Part III, Section II, 7.4.1.2 and 7.4.3.2.

for initial and recurrent training and for the maintenance of competency. In fact, these three processes are almost entirely harmonized with each other for the definition of new aircraft. Other States have the choice of either establishing their own evaluation process or adopting the joint FSB/OEB guidelines.

e) Guidance material of a general nature on cross-crew qualification, mixed-fleet flying and cross-credit can be found in FAA Advisory Circular AC 120-53A and in the EASA OEB ─ Common Procedure Document available on the EASA website. Guidance for specific aircraft types or variants can be found in evaluation reports prepared by the FSBs of the FAA and of Transport Canada, and in the reports by the OEBs on the EASA website.

3.4 CRUISE RELIEF PILOT (ANNEX 1 AND ANNEX 6 REQUIREMENTS)

Note.— There is no guidance in other ICAO documents for cruise relief pilots. This section therefore goes beyond licensing requirements and also contains operational guidance for the maintenance of competency and the recency of experience.

3.4.1 Introduction

3.4.1.1 The term “augmented flight crew” is defined in Attachment A to Annex 6, Part I, as “a flight crew that comprises more than the minimum number required to operate the aeroplane and in which each flight crew member can leave his or her assigned post and be replaced by another appropriately qualified flight crew member for the purpose of in-flight rest”.

3.4.1.2 Practices in relation to the operation of aircraft with augmented flight crews vary considerably among States and operators. Some practices involve a “cruise relief pilot” who is normally assigned only to pilot duties in the cruise portion of a flight, i.e. above a certain altitude (e.g. FL 200) determined by the operator, and generally uses a cockpit observer seat during take-off, climb, descent, approach and landing. Other practices involve using a pilot who is either a pilot-in-command or a co-pilot but is assigned as cruise relief pilot for a flight where an augmented crew is required. Some operators use “cruise relief captains” who are assigned to pilot duties only in the cruise portion of a flight, but are in command under delegation while the pilot-in-command is resting.

3.4.1.3 As part of their safety management system, operators should manage the risks specific to augmented flight crew operations, including those identified when the pilot-in-command is resting. Factors to consider include, but are not limited to, the following:

a) a clear definition of the chain of command and of assigned duties for all operations, including in case the pilot-in-command becomes incapacitated or is unable to return to the cockpit for any reason;

b) procedures and conduct of briefings when any pilot is relieved or returns to duty;

c) required qualifications and competence in the augmented flight crew, e.g. when the pilot-in-command is resting, is there always a pilot at the flight controls qualified as pilot-in-command (except when that pilot’s absence is necessary for the performance of duties in connection with the operation of the aircraft or for physiological needs), or if not qualified as pilot-in-command, what competencies are required to be demonstrated to ensure the pilot second-in-command can take appropriate decisions and safely manage the flight? and

d) the distance of the flight crew rest area from the cockpit.

3.4.2 Type rating

Annex 1 requires a cruise relief pilot to hold at least a valid CPL or MPL, with the appropriate type rating. Annex 1 does not differentiate among the functions of pilot-in-command, co-pilot or cruise relief pilot for type-rating training and checking requirements: all pilots must be fully type-rated. When the national regulations governing type rating allows for the type rating to be obtained through "zero-flight time" training, i.e. entirely trained to proficiency in an FSTD approved for that purpose by the Licensing Authority, a pilot, including a cruise relief pilot, could be qualified on type without conducting "base" training (i.e. without conducting take-offs and landings in the actual aircraft during training). When a type rating is issued limiting the privileges to act as pilot only during the cruise phase of flight, such limitation shall be endorsed on the rating (Annex 1, 2.1.4.1.1). This ensures that any conversion or validation of the licence would carry the appropriate privileges.

3.4.3 Maintenance of competency (after meeting the type-rating requirement)

3.4.3.1 Annex 1, 1.2.5.1, also requires that a pilot exercising licence privileges maintain competency and meet the requirements for recent experience established by the State of Registry. In the case of a cruise relief pilot, Annex 6, Part I, 9.3.1, requires the operator to establish and maintain a ground and flight training programme, approved by the State of the Operator, which ensures that all cruise relief pilots are adequately trained, initially and on a recurrent basis, to perform their assigned duties. Such training may be conducted in an FSTD approved by the State of the Operator for that purpose (Annex 6, Part I, 9.3.2).

3.4.3.2 For the cruise relief pilot, this initial and recurrent training will include the training described in Annex 6, Part I, 9.3.1, e.g. proper flight crew coordination and training in all types of emergency and abnormal situations or procedures caused by aircraft malfunctions, fire or other abnormalities (such as crew incapacitation that would require the cruise relief pilot to perform duties in the approach and landing phases) and training in visual and instrument flight procedures.

3.4.3.3 The initial and recurrent training for a cruise relief pilot shall include an assessment of competency. In addition, pilot proficiency checks shall be performed twice within any period of one year (with a minimum of four months between any two such checks) to ensure competence in piloting technique and in the execution of emergency procedures and, if applicable, the ability to comply with instrument flight rules (Annex 6, Part I, 9.4.4 refers).

3.4.4 Recency of experience

In addition, to be assigned for duty, cruise relief pilots must have within the preceding 90 days (Annex 6, Part I, 9.4.2, refers) either:

a) operated as pilot-in-command, co-pilot or cruise relief pilot on the same type of aeroplane (see also 3.3 of this chapter); or

b) carried out flying skill refresher training including normal, abnormal and emergency procedures specific to cruise flight on the same type of aeroplane (see also 3.3 of this chapter) or in an FSTD approved for that purpose, and practised approach and landing procedures.

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Attachment to Chapter 3

EXAMPLE LICENSING RULES

Notes.—

1. The following extract from a Contracting State's rules uses the concept of junior and senior flight instructor ratings, specific to that State. Such concept is not used in Annex 1, which has a single flight instructor rating.

2. Regarding the recent flight experience requirements, consideration should be given to allowing some requirements to be met by utilizing an approved FSTD (refer to Chapter 6 of this Part and to Annex 6, Part I, 9.4.1 and 9.4.2; Part II, Section 3, 3.9.4.2 and 3.9.4.3; and Part III, Section II, 7.4.1, for further details).

3. A student pilot shall not fly solo on an international flight unless by special or general arrangement between the Contracting States concerned. The following example contains the student pilot rules of a State, with only 1.1 b) and d) reflecting Annex 1 specific requirements. In accordance with Annex 1, the State sets the requirements for a student pilot and ensures that the privileges granted would not permit the student pilots to constitute a hazard to air navigation. This is implemented for this particular State by the other sub-paragraphs of 1.1, to meet the specific national needs.

4. Regarding 1.4, Annex 1 requires that multi-crew pilot licence applicants meet the knowledge requirements for an airline transport pilot licence. This standard should not be literally interpreted to mean that an applicant must successfully complete those same examinations originally designed by the State to be administered to airline transport pilot licence applicants. Since holders of a multi-crew pilot licence are expected to immediately enter into commercial air operator's line-indoctrination programmes without "bridge" or supplemental training, licensing authorities may wish to review their existing examination structures. This analysis may suggest that it would be more beneficial to develop a separate set of qualifying knowledge examinations for the multi-crew pilot licence. This could well provide authorities with a more effective validation process, which more accurately identifies the existence of all those knowledge competencies needed for operating a modern transport category aeroplane in an international commercial air transport operation.

1. PILOT LICENCES

1.1 Student pilot requirements

Solo flight requirements: A person who does not hold a current pilot licence shall not fly an aeroplane, helicopter, powered-lift or airship solo unless:

a) *Age:* The person is not less than 16 years of age.

b) *Medical fitness:* The person holds a current Class 2 medical assessment and complies with all conditions, restrictions and endorsements on the medical assessment.

c) *Language:* The person has sufficient ability in speaking and understanding in the English[1] language to be able to adequately carry out all responsibilities of the pilot-in-command of an aircraft.

d) *Authorization:* The flight is authorized by the holder of a current junior or senior flight instructor rating, except for a first solo flight by day or by night, which shall be authorized by the holder of a senior flight instructor rating. The flight instructor who authorizes a solo flight by a student pilot shall also monitor the actions of the pilot during the solo flight.

e) *Experience:*

i) 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;

ii) the person has had piloting experience in appropriate aircraft within the immediately preceding 30 days; and

iii) if the solo flight is a cross-country flight, the person has completed all theory examinations for a private pilot licence.

f) *Knowledge:* Except as provided in g) below, the holder of a current flight instructor rating has certified that the person has received instruction and demonstrated competence in the following:

i) preparation for flight;

ii) starting and run-up procedures;

iii) taxiing;

iv) straight and level flight;

v) climbing and descending;

vi) level, climbing and descending turns;

vii) take-off, circuit and landing in that type of aircraft;

viii) practical flight radiotelephony;

ix) go-around procedures;

x) in the case of an aeroplane:

1) stall recognition and recovery in that aeroplane type;

2) emergency procedures in the event of engine failure during and after take-off;

xi) in the case of a helicopter:

1. This example licensing rule is from a State where English is the language used for radiotelephony communications. Other States may require such ability in the language, different from English, used for radiotelephony communications.

1) hovering upwind, downwind and crosswind; and

2) emergency procedures (including autorotative approach and landing) in that type of helicopter.

g) In the case of a first solo flight by day, the certification in the person's logbook required in f) above may be made after the completion of the flight if the instructor is satisfied that the requirements have been met.

1.2 Private pilot licence

To be eligible for the issuance of a private pilot licence, the applicant shall meet the following general requirements:

a) *Age:* The applicant is not less than 17 years of age.

b) *Medical fitness:* The applicant holds a current Class 2 medical assessment.

c) *Language proficiency:* The applicant has demonstrated English language proficiency to at least ICAO Operational Level (Level 4) in an approved oral language test.[2]

d) *Experience:* The applicant has a minimum of:

i) 50 hours of flight time experience or, if the applicant is not seeking to exercise private pilot privileges on a cross-country flight, 40 hours of flight time experience, as a pilot in an appropriate category of aircraft comprising solo flight time, dual instruction flight time, instrument flight time, and cross-country flight time acceptable to the Director;[3]

ii) if the applicant seeks to exercise private pilot privileges during night, have night flight experience acceptable to the Director, including dual instruction; and

iii) if the applicant seeks to exercise private pilot (helicopter) privileges in the carriage of sling loads, have flight training on the carriage of sling loads acceptable to the Director.

e) *Knowledge:* The applicant has passed the following private pilot licence theory examinations:

i) air law;

ii) aircraft general knowledge (aeroplane, airship, helicopter or powered-lift as appropriate);

iii) flight performance, planning and loading;

iv) human performance;

v) meteorology;

vi) navigation;

2. This example licensing rule is from a State where English is the language used for radiotelephony communications. Other States may require such demonstration in the language, different from English, used for radiotelephony communications.
3. The flight time experience requirements of this paragraph differ from Annex 1 requirements.

vii) operational procedures;

viii) principles of flight; and

ix) flight radiotelephony.

f) *Skill:* The applicant has demonstrated the following to a flight examiner in a flight test:

i) knowledge of the theory subjects in e) above;

ii) knowledge of the privileges and limitations of a private pilot licence;

iii) technical and operational knowledge relevant to the aircraft type to be used in the flight test;

iv) competence to operate the aircraft within its performance capabilities and limitations in accordance with the aircraft flight manual in all normal, abnormal and emergency conditions and procedures while exercising appropriate levels of judgement and command;

v) competence in radiotelephony procedures and phraseology; and

vi) control of the aircraft at all times in a manner that ensures the successful outcome of a procedure or manoeuvre is never in doubt.

g) *Privileges:* Subject to h) below, the holder of a current private pilot licence may:

i) act as pilot-in-command of an aircraft of the category for which the licence is granted and for which the holder has an aircraft class or type rating, and may carry passengers in that aircraft; and

ii) act as a co-pilot of an aircraft of the category for which the licence is granted and for which the holder has an aircraft type rating, and which is required to be operated with a co-pilot.

h) The holder of a private pilot licence may not act as pilot-in-command or as co-pilot of an aircraft:

i) for remuneration;

ii) if the aircraft is being operated for hire or reward;

iii) unless an appropriately qualified flight instructor has certified that the holder has satisfactorily completed the required flight training, if the aircraft is:

1) being operated at night;

2) being operated on a cross-country flight; and

3) a helicopter carrying a sling load.

i) A holder of a private pilot licence is required to comply with all currency requirements, including those for medical assessment, recent flight experience, and periodic flight reviews before exercising the privileges of the holder's private pilot licence.

1.3 Commercial pilot licence

To be eligible for the issuance of a commercial pilot licence (aeroplane, airship, powered-lift or helicopter), the applicant shall meet the following general requirements:

a) *Age:* The applicant is not less than 18 years of age.

b) *Licence:* The applicant holds a current private pilot licence or an approved equivalent, which includes a current English language endorsement,[4] for the appropriate category of aircraft.

c) *Medical fitness*: The applicant holds a current Class 1 medical assessment.

d) *Experience:* The applicant has the following minimum general flight time experience as a pilot, comprising specific flight experience[5] that is acceptable to the Director for the appropriate category of aircraft:

   i) in the case of an aeroplane, 200 hours or, if undertaking a course of approved training, 150 hours;

   ii) in the case of a helicopter, 150 hours or, if undertaking a course of approved training, 100 hours;

   iii) in the case of a powered-lift, 200 hours or, if undertaking a course of approved training, 150 hours;

   iv) in the case of an airship, 200 hours as a pilot, including 50 hours as a pilot of an airship;[6] and

   v) if the person seeks to exercise commercial pilot privileges during the night, night flight time experience acceptable to the Director.

e) *Knowledge:* The applicant has passed the following commercial pilot licence theory examinations:

   i) air law;

   ii) aircraft general knowledge (aeroplane, helicopter, glider, powered-lift, or airship as appropriate);

   iii) flight performance, planning and loading;

   iv) human performance;

   v) meteorology;

   vi) navigation;

   vii) operational procedures;

   viii) principles of flight, or aerodynamics and aerostatics (airship); and

4. This example licensing rule is from a State where English is the language used for radiotelephony communications. Other States may require such endorsement in the language, different from English, used for radiotelephony communications.
5. Annex 1 sets minimum specific flight time experience for each category of aircraft (in pilot-in-command, cross-country, instrument and night experience).
6. In Annex 1, the commercial pilot licence in the airship category includes the instrument rating.

ix) flight radiotelephony.

f) *Skill:* The applicant has demonstrated the following to the Director in a flight test:

i) knowledge in the theory subjects specified in e) above;

ii) knowledge of the privileges and limitations of a commercial pilot licence;

iii) technical and operational knowledge relevant to the aircraft type to be used in the flight test;

iv) competence to operate the aircraft within its performance capabilities and limitations in accordance with the aircraft flight manual in all normal, abnormal and emergency conditions and procedures while exercising appropriate levels of judgement and command;

v) competence in radiotelephony and phraseology; and

vi) control of the aircraft at all times in a manner that ensures the successful outcome of a procedure or manoeuvre is never in doubt.

g) *Privileges:* Subject to h) and i), the holder of a current commercial pilot licence may exercise the following privileges in aircraft of the same category for which the pilot licence is granted and for which the pilot holds an aircraft class or type rating:

i) any of the appropriate privileges of a private pilot licence;

ii) act as pilot-in-command of an aircraft that is certificated for single-pilot operation and engaged in an operation for hire or reward;

iii) act as pilot-in-command of an aircraft that is certificated for multi-pilot operation and engaged in an operation for hire or reward, that is not a commercial air transport operation;

iv) act as co-pilot of an aircraft that is certificated for multi-pilot operation and engaged in an operation for hire or reward; and

v) for the airship category, pilot an airship under IFR.

h) The holder of a commercial pilot licence may not act as pilot-in-command or as co-pilot of an aircraft at night, unless an appropriately qualified flight instructor has certified that the holder has satisfactorily completed the required night flight training.

i) A holder of a commercial pilot licence is required to comply with all currency requirements, including those for medical assessment, recent flight experience and periodic flight review before exercising the privileges of the holder's commercial pilot licence.

1.4 Multi-crew pilot licence

To be eligible for the issuance of a multi-crew pilot licence, the applicant shall meet the following general requirements:

a) *Age:* The applicant is not less than 18 years of age.

b) *Language:* The applicant has demonstrated English [7] language proficiency to at least ICAO Operational Level (Level 4) in an approved oral language test.

c) *Medical fitness:* The applicant holds a current Class 1 medical assessment.

d) *Experience:* The applicant has completed an approved training course consisting of not less than 240 hours as pilot flying and pilot not flying of actual and simulated flight. Flight experience in actual flight shall include: experience required for issue of a private pilot licence as detailed in 1.1 d); upset recovery training; night flying; and flight by reference solely to instruments.

e) *Knowledge:* The applicant has met the knowledge requirements outlined in 1.5 e) for the airline transport pilot licence appropriate to the aeroplane category in an approved training course.

f) *Skill:* The applicant has demonstrated the skills required for fulfilling all the competency units specified in Annex 1, 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 at least two pilots under VFR and IFR, and to:

   i) recognize and manage threats and errors;

   ii) 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;

   iii) operate the aeroplane in the mode of automation appropriate to the phase of flight and to maintain awareness of the active mode of automation;

   iv) perform, in an accurate manner, normal, abnormal and emergency procedures in all phases of flight; and

   v) communicate effectively with other 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.

g) *Privileges:* The holder of a current multi-crew pilot licence may exercise the following privileges in an aeroplane for which the pilot holds an aeroplane class or type rating:

   i) any of the appropriate privileges of a multi-engine turbine-powered aeroplane type rating;

   ii) use an instrument rating in a multi-crew operation; and

   iii) act as co-pilot of an aeroplane required to be operated with a co-pilot.

h) Before exercising the privileges of the instrument rating in a single-pilot operation in aeroplanes, the licence holder shall have demonstrated to a flight examiner the ability to act as pilot-in-command in a single-pilot operation by reference solely to instruments and shall have met the skill requirement specified in 2.1 e) appropriate to the aeroplane category.

i) Before exercising the privileges of a commercial pilot licence in a single-pilot operation in aeroplanes, the licence holder shall have:

7. This example licensing rule is from a State where English is the language used for radiotelephony communications. Other States may require such demonstration in the language, different from English, used for radiotelephony communications.

i) 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 time as pilot-in-command under supervision;

ii) completed 20 hours of cross-country flight time as pilot-in-command, or made up of not less than 10 hours as pilot-in-command and 10 hours as pilot-in-command under supervision, including a cross-country flight totalling not less than 540 km (300 NM) in the course of which full-stop landings at two different aerodromes shall be made; and

iii) met the experience, knowledge and skill requirements for the commercial pilot licence appropriate to the aeroplane category, specified in 1.3 d) (except for pilot-in-command experience, which is specified in i) and ii) above), 1.3 e), and 1.3 f).

` j) A holder of a multi-crew pilot licence is required to comply with all currency requirements, including those for medical assessment, recent flight experience and periodic flight review before exercising the privileges of the holder's multi-crew pilot licence.

1.5 Airline transport pilot licence

To be eligible for the issuance of an airline transport pilot licence, the applicant shall meet the following general requirements:

a) *Age:* The applicant is not less than 21 years of age.

b) *Licence:* The applicant holds a current commercial pilot licence, a multi-crew pilot licence or an approved equivalent, which includes a current English[8] language endorsement, for the appropriate category of aircraft and, except for the helicopter category, a current instrument rating.

c) *Medical fitness:* The applicant holds a current Class 1 medical assessment.

d) *Experience:* The applicant has the following minimum general flight time experience as a pilot comprising specific flight experience that is acceptable to the Director for the appropriate category of aircraft:

i) in the case of an aeroplane: 1 500 hours;

ii) in the case of a powered-lift: 1 500 hours; or

iii) in the case of a helicopter: 1 000 hours.

e) *Knowledge:* The applicant has passed the following airline transport pilot licence theory examinations:

i) air law;

ii) aircraft general knowledge (aeroplane, helicopter or powered-lift as appropriate);

iii) flight performance, planning and loading;

8. This example licensing rule is from a State where English is the language used for radiotelephony communications. Other States may require such an endorsement for the language, different from English, used for radiotelephony communications.

iv) human performance;

v) meteorology;

vi) navigation;

vii) operational procedures;

viii) principles of flight; and

ix) flight radiotelephony.

f) *Skill:* Subject to g) below, the applicant, in a flight test, has demonstrated to the Director, or an appropriately authorized flight examiner operating under the authority of either a commercial air operator certificate issued by the Authority or an approved training organization certificate issued by the Authority if that certificate authorizes the organization to conduct such flight tests, the following:

i) knowledge in the theory subjects specified in e) above;

ii) knowledge of the privileges and limitations of an airline transport pilot licence;

iii) technical and operational knowledge relevant to the aircraft type used in the flight test;

iv) competence to operate the aircraft within its performance capabilities and limitations in accordance with the aircraft flight manual in all normal, abnormal and emergency conditions and procedures whilst exercising appropriate levels of judgement and command;

v) competence in ATC procedures and phraseology; and

vi) control of the aircraft at all times in a manner that ensures the successful outcome of a procedure or manoeuvre is never in doubt.

g) The flight test required under f) shall be a cross-country flight conducted under IFR in an aircraft that is:

i) a multi-engine aircraft with an MCTOM of 5 700 kg or more; or

ii) a multi-engine aircraft acceptable to the Director; or

iii) an FSTD that is approved for the conduct of flight tests for the issue of an airline transport pilot licence.

h) *Privileges:* The holder of a current airline transport pilot licence may exercise the following privileges in an aircraft of the same category for which the pilot licence is granted and for which the pilot holds an aircraft class or type rating:

i) any of the privileges of a private and commercial pilot licence and, in the case of the aeroplane or powered-lift category, the privileges of the instrument rating; and

ii) act as pilot-in-command of an aircraft that is required to be operated with a co-pilot, in commercial air transportation.

i) A holder of an airline transport pilot licence is required to comply with all currency requirements, including those for medical assessment, recent flight experience and periodic flight review before exercising the privileges of the holder's airline transport pilot licence.

1.6 Glider pilot licence

The issuance of glider pilot licences has been delegated to the National Gliding Association in accordance with the following criteria:

a) *Age:* The applicant is not less than 16 years of age.

b) *Medical fitness:* The applicant holds a current Class 2 medical assessment.

c) *Experience:* The applicant has 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.

d) *Knowledge:* The applicant has demonstrated a level of knowledge appropriate to the privileges granted to the holder of a glider pilot licence in the following theory subjects:

i) air law;

ii) aircraft general knowledge (glider);

iii) flight performance, planning and loading;

iv) human performance;

v) meteorology;

vi) navigation;

vii) operational procedures;

viii) principles of flight; and

ix) flight radiotelephony.

e) *Skill:* The applicant has demonstrated the ability to perform as pilot-in-command, with a degree of competency appropriate to the privileges granted to the holder of a glider pilot licence, the following procedures and manoeuvres:

i) pre-flight operations, including glider assembly and inspection;

ii) techniques and procedures for the launching method used, including appropriate airspeed limitations, emergency procedures and signals used;

iii) traffic pattern operations, collision avoidance precautions and procedures;

iv) control of the glider by external visual reference;

v) flight throughout the flight envelope;

vi) recognition of, and recovery from, incipient and full stalls and spiral dives;

vii) normal and crosswind launches, approaches and landings;

viii) cross-country flying using visual reference and dead reckoning; and

ix) emergency procedures.

f) *Privileges:* Subject to g), h) and i) below, the holder of a current glider pilot licence may act as pilot-in-command of any glider provided the licence holder has operational experience in the launching method used.

g) The holder of a current glider pilot licence may not act as pilot-in-command of a glider carrying passengers unless the licence holder has completed not less than 10 hours of flight time as a pilot of gliders.

h) The holder of a glider pilot licence may not operate an aeronautical radiotelephone transceiver unless the licence holder has passed an approved flight radiotelephony written examination and has evidence of a current English[9] language proficiency demonstration[10] to at least ICAO Operational Level (Level 4) in an approved oral language test.

i)[11] The holder of a glider pilot licence may not act as pilot-in-command of a glider for remuneration or if the glider is being operated for hire or reward unless the pilot:

i) is no less than 18 years of age;

ii) holds a current Class 1 medical assessment; and

iii) has at least 150 hours of flight time experience as a pilot, of which at least 90 hours are in gliders comprising pilot-in-command, dual instruction and cross-country flight time experience acceptable to the Director.

1.7 Free balloon pilot licence

The issuance of free balloon pilot licences has been delegated to the National Ballooning Association in accordance with the following criteria:

a) *Age:* The applicant is not less than 16 years of age.

b) *Medical fitness:* The applicant holds a current Class 2 medical assessment.

c) *Experience:* The applicant has completed not less than 16 hours of flight time as a pilot of free balloons including at least eight launches and ascents of which one must be solo.

d) *Knowledge:* The applicant has demonstrated a level of knowledge appropriate to the privileges granted to the holder of a free balloon pilot licence in the following theory subjects:

9. This example licensing rule is from a State where English is the language used for radiotelephony communications. Other States may require such a demonstration for the language, different from English, used for radiotelephony communications.
10. In Annex 1, this is only a Recommended Practice for glider pilots.
11. This paragraph of the example regulations is not covered in Annex 1.

i) air law;

ii) balloon general knowledge;

iii) flight performance, planning and loading;

iv) human performance;

v) meteorology;

vi) navigation;

vii) operational procedures;

viii) aerostatics; and

ix) flight radiotelephony.

e) *Skill:* The applicant has demonstrated the ability to perform as pilot-in-command, with a degree of competency appropriate to the privileges granted to the holder of a free balloon pilot licence, the following procedures and manoeuvres:

i) pre-flight operations, including balloon assembly, rigging, inflation, mooring and inspection;

ii) techniques and procedures for the launching and ascent, including appropriate limitations, emergency procedures and signals used;

iii) collision avoidance precautions;

iv) control of the free balloon by external visual reference;

v) recognition of, and recovery from, rapid descents;

vi) cross-country flying using visual reference and dead reckoning;

vii) approaches and landings, including ground handling; and

viii) emergency procedures.

f) *Privileges:* Subject to g), h) and i) below, the holder of a current free balloon pilot licence may 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.

g) The holder of a free balloon pilot licence may not act as pilot-in-command at night unless the licence holder has gained, under appropriate supervision, operational experience in free balloons in night flying.

h) The holder of a free balloon pilot licence may not operate an aeronautical radiotelephone transceiver unless the licence holder has passed an approved flight radiotelephony written examination and has evidence of a current English[12] language proficiency demonstration to at least ICAO Operational Level (Level 4) in an approved oral language test.

12. This example licensing rule is from a State where English is the language used for radiotelephony communications. Other States may require such a demonstration for the language, different from English, used for radiotelephony communications.

i)[13] The holder of a free balloon pilot licence may not act as pilot-in-command of a free balloon for remuneration or if the balloon is being operated for hire or reward unless the pilot:

i) is no less than 18 years of age;

ii) holds a current Class 1 medical assessment; and

iii) has at least 50 hours of flight time experience as a pilot, of which at least 35 hours are as a pilot of a free balloon.

2. PILOT RATINGS

2.1 Instrument rating

To be eligible for the issuance of an instrument rating (in the aeroplane, powered-lift, helicopter or airship category), an applicant shall meet the following general requirements:

a) *Licence:* The applicant holds a current pilot licence, which includes the night flying privileges for the pilot licence and a current English[12] language endorsement, for the appropriate category of aircraft.

b) *Medical fitness:* The applicant holds a current Class 1 medical assessment. Notwithstanding this requirement, a holder of a private pilot licence may apply for an instrument rating with a Class 2 medical assessment endorsed that the holder meets Class 1 hearing requirements.

c) *Experience:* The applicant has the following minimum flight time experience:

i) 50 hours of VFR cross-country flight time as pilot-in-command, of which not less than 10 hours shall be in the aircraft category being sought; and

ii) 40 hours of instrument flight time, of which up to 20 hours may be conducted in an approved FSTD under the supervision of an authorized instructor. At least 20 hours of instrument flight time, including at least 10 hours of dual instruction, must be in the appropriate category of aircraft.

d) *Knowledge:* The applicant has passed the following instrument rating theory examinations appropriate to the aircraft category sought:

i) air law;

ii) aircraft general knowledge;

iii) flight performance, planning and loading;

iv) human performance;

v) meteorology;

vi) navigation;

13. This paragraph of the example regulations is not covered in Annex 1.

vii) operational procedures; and

viii) flight radiotelephony.

e) *Skill:* The applicant, in a flight test, has demonstrated to the Director, or an appropriately authorized flight examiner operating under the authority of either a commercial air operator certificate issued by the Authority or an approved training organization certificate issued by the Authority if the certificate authorizes the organization to conduct such flight tests, the following:

i) pre-flight procedures, including the use of the flight manual or equivalent document, and appropriate air traffic service documents in the preparation of an IFR flight plan;

ii) pre-flight inspection, use of checklists, taxiing and pre-take-off checks;

iii) procedures and manoeuvres for IFR operation under normal, abnormal and emergency conditions covering at least: transition to instrument flight on take-off; standard instrument departures and arrivals; en-route IFR procedures; holding procedures; instrument approaches to specified minima; missed approach procedures; and landings from instrument approaches;

iv) in-flight manoeuvres and particular flight characteristics;

v) for non-centreline-thrust multi-engine aircraft, operation of the aircraft solely by reference to instruments with one-engine inoperative or simulated inoperative; and

vi) for single-pilot aircraft, operation of the aircraft to single-pilot standard.

f) *Issuance:* If the Director is satisfied that an applicant for an instrument rating has met the requirements stated in the preceding sub-paragraphs, the Director may issue the rating. An instrument rating is an integral part of ATPL (aeroplane and powered-lift categories), MPL, and CPL (airship category) issuance and is not normally endorsed on such licences.

g) A holder of an instrument rating may apply to the Director to have any additional approach aid or system endorsed on the holder's pilot licence. On receipt of an application and payment of the applicable fee, the Director may endorse the additional approach aid or system on the holder's pilot licence.

h) *Privileges:* Subject to i) below the holder of a current instrument rating may act as a pilot-in-command or co-pilot of an appropriate aircraft operating under IFR.

i) Before the holder of an instrument rating carries out an instrument approach procedure as pilot-in command or co-pilot of an appropriate aircraft operating under IFR, a flight examiner shall have certified in the holder's logbook that the holder has satisfactorily demonstrated competency on that approach aid or system.

2.2 Aeroplane class rating

2.2.1 Ratings for piston-engine, fixed undercarriage/float aeroplanes of less than 1 650 kg MCTOM[14] certificated for single-pilot operation may be issued in the following classes:

14. This State introduced a 1 650 kg MCTOM limit for class ratings to require type ratings for heavier aeroplanes in accordance with Annex 1, 2.1.3.2 c), which states "Type ratings shall be established for: … any aircraft whenever considered necessary by the Licensing Authority". This is to meet the specific needs of this particular State.

a) single-engine, land;

b) single-engine, sea;

c) multi-engine, land; and

d) multi-engine, sea.

2.2.2 To be eligible for the issuance of an aeroplane class rating, the applicant shall:

a) hold a current pilot licence (aeroplane);

b) have flight experience acceptable to the Director;

c) have demonstrated to an appropriately qualified flight instructor satisfactory technical knowledge of the aeroplane class for which the rating is required; and

d) have demonstrated to an appropriately qualified flight instructor the ability to perform competently all normal, abnormal and emergency manoeuvres appropriate to the aeroplane class for which the rating is required.

2.3 Aircraft type rating

To be eligible for the issuance of an aircraft type rating (aeroplane, powered-lift, helicopter or airship categories), the applicant shall:

a) hold a current pilot licence for the appropriate category of aircraft;

b) have conversion instruction flight experience acceptable to the Director;

c) in the case of a turbine-powered aircraft, have passed an approved basic turbine theory examination;

d) have demonstrated to an appropriately qualified flight instructor a satisfactory technical knowledge of the aircraft type for which the rating is required;

e) have demonstrated to an appropriately qualified flight instructor in a type competency demonstration the ability to perform competently all normal, abnormal and emergency manoeuvres appropriate to the aircraft type for which the rating is required; and

f) if applying for an aircraft type rating for an aircraft exceeding 5 700 kg MCTOM or for a multi-engine helicopter:

   i) have completed an approved course of technical training on the aircraft for which the aircraft type rating is required; and

   ii) have passed an approved written examination in the normal, abnormal and emergency procedures for the operation of the aircraft's systems and in the aircraft's performance, weight and balance; or

g) if applying for an aircraft type rating for a single-engine helicopter not exceeding 5 700 kg MCTOM, have passed an approved written examination in the normal, abnormal and emergency procedures for the operation of the helicopter's systems and in the helicopter's performance, weight and balance. In the case of a helicopter of not greater than 1 500 kg MCTOM, an oral examination is acceptable.

2.4 Flight instructor rating or authorization[15]

2.4.1 No person may give flight instruction or exercise any privileges of a flight instructor rating or authorization without holding a current flight instructor rating or authorization. The Director may issue the following ratings or authorizations by endorsing the applicant's pilot licence with the applicable category of flight instructor rating or authorization:

a) junior flight instructor rating;

b) senior flight instructor rating; and

c) airline transport flight instructor authorization.[16]

These endorsements may be issued in accordance with the criteria detailed below.

2.4.2 *Junior flight instructor rating:* To be eligible for the issuance of a junior flight instructor rating, an applicant shall meet the following general requirements:

a) *Licence:* The applicant holds at least a current commercial pilot licence or approved equivalent, including a current English[17] language endorsement, for the appropriate category of aircraft.

b) *Experience:* The applicant has the following minimum flight time experience:

i) 200 hours of flight time experience as a pilot in the appropriate category of aircraft comprising specific flight experience that is acceptable to the Director;

ii) if the applicant seeks to instruct at night, have night flight experience acceptable to the Director;

iii) if the applicant seeks to instruct in multi-engine aircraft, have multi-engine flight experience acceptable to the Director;

iv) if the applicant seeks to instruct in IMC or on an IFR flight plan, hold a current instrument rating for the appropriate category of aircraft and the approach aid or system used; and

v) if the applicant seeks to instruct in spinning or aerobatic manoeuvres in aeroplanes, have aerobatic experience acceptable to the Director.

c) *Instruction:* The applicant has satisfactorily completed an approved course in the practice and theory of flight instruction, including a minimum of 25 hours of dual flight instructor training.

d) *Knowledge:* The applicant has passed oral examinations in the following subject areas:

i) principles of flight;

ii) performance;

15. This example of a State's licensing rules introduces the concept of junior and senior flight instructor ratings which is not a concept used in Annex 1. It also requires a CPL for these ratings, while Annex 1 requires only for the flight instructor rating the experience for the issuance of a CPL and the licence and rating for which instruction is being given.
16. This would be an example of an authorization granted under Annex 1, 2.1.8.1 c).
17. This example licensing rule is from a State where English is the language used for radiotelephony communications. Other States may require such an endorsement for the language, different from English, used for radiotelephony communications.

iii) meteorology;

iv) cross-country navigation techniques; and

v) the practice and theory of flight instruction.

e) *Skill:* The applicant has demonstrated to the Director the ability to give flight instruction in the appropriate category of aircraft in all normal and emergency flight manoeuvres.

f) *Privileges:* Before independently exercising the privileges of an instructor rating, the holder of a junior flight instructor rating shall exercise the privileges under the direct supervision of a current senior flight instructor for six consecutive months and 100 hours of instructional flying. The holder of a current junior flight instructor rating may:

i) give theory instruction;

ii) give flight instruction pertaining to the issue or renewal of PPL, CPL, instrument rating or flight instructor rating;

iii) authorize solo flight except for a first solo flight by day or by night; and

iv) conduct class or type ratings.

2.4.3 *Senior flight instructor rating:* To be eligible for the issuance of a senior flight instructor rating, an applicant shall meet the following general requirements:

a) *Licence:* The applicant holds at least a current commercial pilot licence or approved equivalent, which includes a current English[18] language endorsement and a junior flight instructor rating or approved equivalent for the appropriate category of aircraft.

b) *Experience:* The applicant has the following minimum flight time experience:

i) 500 hours of flight time experience as a pilot in the appropriate category of aircraft comprising specific flight experience that is acceptable to the Director;

ii) if the applicant seeks to instruct at night, night flight experience acceptable to the Director;

iii) if the applicant seeks to instruct in multi-engine aircraft, multi-engine flight experience acceptable to the Director;

iv) if the applicant seeks to instruct in IMC or on an IFR flight plan, a current instrument rating for the appropriate category of aircraft and the approach aid or system used; and

v) if the applicant seeks to instruct in spinning or aerobatic manoeuvres in aeroplanes, aerobatic experience acceptable to the Director.

c) *Instruction:* If not already the holder of an instructor rating, the applicant has satisfactorily completed an approved course in the practice and theory of flight instruction.

18. This example licensing rule is from a State where English is the language used for radiotelephony communications. Other States may require such an endorsement for the language, different from English, used for radiotelephony communications.

d) *Knowledge:* The applicant has passed oral examinations in the following subject areas:

i) principles of flight;

ii) performance;

iii) meteorology;

iv) cross-country navigation techniques; and

v) the practice and theory of flight instruction.

e) *Skill:* The applicant, in a flight test, has demonstrated to the Director the ability to give flight instruction in the appropriate category of aircraft in all normal and emergency flight manoeuvres.

f) *Privileges:* The holder of a current senior flight instructor rating may:

i) give theory instruction;

ii) give flight instruction pertaining to the issue or renewal of PPL, CPL, instrument rating or flight instructor rating;

iii) authorize solo flight;

iv) conduct class or type ratings;

v) conduct periodic flight reviews; and

vi) conduct competency reviews when operating under the authority of an approved training organization certificate.

2.4.4 *Airline transport flight instructor authorization:* To be eligible for the issuance of an airline transport flight instructor authorization, an applicant shall meet the following general requirements:

a) *Licence:* The applicant holds a current airline transport pilot licence, including a current English[19] language endorsement, for the appropriate category of aircraft.

b) *Experience:* The applicant has at least 2 000 hours of flight time experience as a pilot comprising specific flight experience that is acceptable to the Director.

c) *Instruction:* If not already the holder of an instructor rating, the applicant has satisfactorily completed an approved course in the practice and theory of flight instruction.

d) *Skill:* The applicant, in a flight test, has demonstrated to the Director, or an appropriately authorized flight examiner operating under the authority of either a commercial air operator certificate issued by the Authority or an approved training organization certificate issued by the Authority if that certificate authorizes the organization to conduct such flight tests, the ability to give flight instruction in the appropriate category or type of aircraft in all normal and emergency flight manoeuvres.

19. This example licensing rule is from a State where English is the language used for radiotelephony communications. Other States may require such an endorsement for the language, different from English, used for radiotelephony communications.

e) *Privileges:* The holder of a current airline transport flight instructor authorization may:

i) give theory instruction;

ii) give flight instruction pertaining to the issue or renewal of an ATPL;

iii) conduct class or type ratings pertaining to an ATPL; and

iv) conduct periodic flight reviews and competency reviews when operating under the authority of either a commercial air operator certificate issued by the Authority or an approved training organization certificate.

3. PILOT CERTIFICATES

3.1 The issuance of pilot certificates for microlight aircraft, weight-shift-control aircraft, paragliders and powered-parachutes has been delegated to the National Sport Flying Association. No person may act as pilot of such aircraft unless that person:

a) holds an appropriate current pilot certificate or operates under the direct supervision of an appropriate pilot instructor certified by the National Sport Flying Association;

b) complies with the privileges and limitations of the pilot certificate; and

c) complies with the operational standards and procedures of the appropriate member organization of the National Sport Flying Association.

3.2 The holder of a pilot certificate may not operate an aeronautical radiotelephone transceiver unless the licence holder has passed an approved flight radiotelephony written examination and has evidence of a current English[20] language proficiency demonstration to at least ICAO Operational Level (Level 4) in an approved oral language test.

4. OTHER FLIGHT CREW LICENCES

4.1 Flight navigator licence

To be eligible for the issuance of a flight navigator licence, the applicant shall meet the following general requirements:

a) *Age:* The applicant is not less than 18 years of age.

b) *Medical fitness:* The applicant holds a current Class 2 medical assessment.

c) *Experience:* The applicant has completed, in the performance of the duties of a flight navigator, not less than 200 hours of flight time acceptable to the Director in aircraft engaged in cross-country flights, including not less than 30 hours by night.

20. This example licensing rule is from a State where English is the language used for radiotelephony communications. Other States may require such an endorsement or such a demonstration for the language, different from English, used for radiotelephony communications.

i) The applicant has produced evidence of having satisfactorily determined the aircraft's position in flight and used that information to navigate the aircraft, as follows:

1) by night: not less than 25 times by celestial observations; and

2) by day: not less than 25 times by celestial observations in conjunction with self-contained or external-referenced navigation systems.

ii) Where an applicant holds a current pilot licence, the total flight experience required for a flight navigator licence may be reduced as follows:

1) in the case of a PPL: up to 25 hours, including 5 hours by night;

2) in the case of a CPL: up to 75 hours, including 5 hours by night;

3) in the case of a CPL with instrument rating: up to 100 hours, including 15 hours by night; or

4) in the case of an ATPL: up to 100 hours, including 15 hours by night.

d) *Knowledge:* The applicant has passed the following flight navigator licence theory examinations:

i) air law;

ii) flight performance, planning and loading;

iii) human performance;

iv) meteorology;

v) navigation;

vi) operational procedures;

vii) principles of flight; and

viii) flight radiotelephony.

e) *Skill:* The applicant has 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.

f) *Privileges:* The holder of a current flight navigator licence may act as flight navigator of any aircraft.

g) The holder of a flight navigator licence may not operate an aeronautical radiotelephone transceiver unless the licence holder has passed an approved flight radiotelephony written examination and has evidence of a current English[21] language proficiency demonstration to at least ICAO Operational Level (Level 4) in an approved oral language test.

21. This example licensing rule is from a State where English is the language used for radiotelephony communications. Other States may require such a demonstration for the language, different from English, used for radiotelephony communications.

4.2 Flight engineer licence

To be eligible for the issuance of a flight engineer licence, the applicant shall meet the following general requirements:

a) *Age:* The applicant is not less than 18 years of age.

b) *Medical fitness:* The applicant holds a current Class 2 medical assessment.

c) *Experience:* The applicant has completed, under the supervision of a flight engineer operating under the authority of a commercial air operator certificate issued by the Authority, not less than 100 hours of flight time in the performance of the duties of a flight engineer. This total flight time may include up to 50 hours of flight engineer duties conducted in an approved flight simulation training device.

d) Where an applicant holds a current pilot licence, the total flight experience required for a flight engineer licence may be reduced by half of the pilot-in-command time gained in the immediately preceding 12 months, up to a maximum of 20 hours.[22]

e) The applicant has operational experience in the performance of the duties of a flight engineer, under the supervision of a flight engineer operating under the authority of a commercial air operator certificate issued by the Authority, in at least the following areas:

   i) Normal procedures:

      1) pre-flight inspections;

      2) fuelling procedures, fuel management;

      3) inspection of maintenance documents;

      4) normal flight deck procedures during all phases of flight;

      5) crew coordination and procedures in case of crew incapacitation; and

      6) defect reporting.

   ii) Abnormal and alternate (standby) procedures:

      1) recognition of abnormal functioning of aircraft systems; and

      2) use of abnormal and alternate (standby) procedures.

   iii) Emergency procedures:

      1) recognition of emergency conditions; and

      2) use of appropriate emergency procedures.

f) *Knowledge:* The applicant has passed the following flight engineer licence theory examinations:

22. This is an example of a rule determining the credit recognized by the State of licence issue as permitted by Annex 1, 3.3.1.3.1.1.

i) air law;

ii) aircraft general knowledge;

iii) flight performance, planning and loading;

iv) human performance;

v) operational procedures;

vi) principles of flight; and

vii) flight radiotelephony.

g) *Skill:* The applicant has demonstrated the ability to perform as flight engineer of an aircraft with a degree of competency appropriate to the privileges granted to the holder of a flight engineer licence.

h) *Privileges:* The holder of a current flight engineer licence may act as flight engineer of any type of aircraft, on which the holder has demonstrated a level of knowledge and skill to an approved flight engineer operating under the authority of a commercial air operator certificate, on the basis of those requirements which are applicable to the safe operation of that type of aircraft.

i) The types of aircraft on which the holder of a flight engineer licence is authorized to exercise the privileges of that licence shall be recorded in the holder's logbook.

5. LICENCES FOR GROUND-BASED PERSONNEL

5.1 Air traffic controller licence

An air traffic controller licence shall not be issued unless the applicant has also met the issuance criteria for an air traffic controller rating (see 6.1). To be eligible for the issuance of an air traffic controller licence, the applicant shall meet the following general requirements:

a) *Age:* The applicant is not less than 21 years of age.

b) *Medical fitness:* The applicant holds a current Class 3 medical assessment.

c) *Language proficiency:* The applicant has demonstrated proficiency in the language used for radiotelephony communications and, if different, in the English language to at least ICAO Operational Level (Level 4) in an approved oral language test.

d) *Experience:* The applicant has completed an approved training course conducted by an ATO or a certified air traffic service organization and not less than three months of 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 6.1 b) may be credited as part of the experience specified in this paragraph.

e) *Knowledge:* The applicant has passed examinations, conducted by an ATO or a certified air traffic service organization, in the following subjects:

i) air law;

ii) air traffic control equipment;

iii) aircraft general knowledge;

iv) human performance;

v) meteorology;

vi) navigation;

vii) operational procedures; and

viii) radiotelephony.

f) *Privileges:* The holder of a current air traffic control licence may exercise the following privileges:

i) the privileges of a flight service operator licence;[23] and

ii) the privileges of any current air traffic controller rating or validation held.

5.2 Flight operations officer licence[24]

To be eligible for the issuance of a flight operations officer licence, the applicant shall meet the following general requirements:

a) *Age:* The applicant is not less than 21 years of age.

b) *Experience:* The applicant has gained the experience in either i) or ii), and in iii) below:

i) a total of two years of service in one or more of the following capacities, provided that the applicant has gained at least 12 months of experience in individual capacities within the combination:

1) a flight crew member in air transportation; or

2) a meteorologist in an organization dispatching aircraft in air transportation; or

3) an air traffic controller; or a technical supervisor of flight operations officers or air transportation flight operations systems; or

ii) the applicant has either satisfactorily completed a course of approved training or has worked at least one year as an assistant in the dispatching of air transport; and

iii) the applicant shall have served under the supervision of a flight operations officer for at least 90 working days within the six-month period immediately preceding the application.

23. This is not a licence established under ICAO Annex 1.
24. Also known as flight dispatcher licence.

c) *Knowledge:* The applicant has demonstrated a level of knowledge appropriate to the privileges granted to the holder of a flight operations officer licence in the following subjects:

i) air law;

ii) aircraft general knowledge;

iii) flight performance calculation, planning procedures and loading;

iv) human performance;

v) meteorology;

vi) navigation;

vii) operational procedures;

viii) principles of flight; and

ix) radio communication.

d) *Skill:* The applicant has demonstrated the ability to:

i) 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 vicinity of a specific air route and on forecast weather trends pertinent to air transportation with particular reference to destination and alternates;

ii) determine the optimum flight path for a given segment and create accurate manual and/or computer-generated flight plans; and

iii) provide operating supervision and 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 licence.

e) *Privileges:* The holder of a current flight operations officer licence may provide flight dispatch and operational support services for an air transport operator provided the licence holder has satisfactorily completed an operator-specific training course covering those services.

f) The holder of a flight operations officer licence may not operate an aeronautical radiotelephone transceiver unless the licence holder has passed an approved flight radiotelephony written examination and has evidence of a current English[25] language proficiency demonstration to at least ICAO Operational Level (Level 4) in an approved oral language test.

5.3 Aeronautical station operator licence

To be eligible for the issuance of an aeronautical station operator licence, the applicant shall meet the following general requirements:

25. This example licensing rule is from a State where English is the language used for radiotelephony communications. Other States may require such a demonstration for the language, different from English, used for radiotelephony communications.

a) *Age:* The applicant is not less than 18 years of age.

b) *Language proficiency:* The applicant has demonstrated proficiency in the language used for radiotelephony communications and, if different, in the English language to at least ICAO Operational Level (Level 4) in an approved oral language test.

c) Experience: The applicant has either:

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

ii) satisfactorily served under a qualified aeronautical station operator for not less than six months during the 12-month period immediately preceding application.

d) *Knowledge:* The applicant has demonstrated a level of knowledge appropriate to the privileges granted to the holder of an aeronautical station operator licence in the following subjects:

i) aviation general knowledge;

ii) radiotelephony, by passing an approved flight radiotelephony written examination;

iii) rules and regulations; and

iv) telecommunication equipment.

e) *Skill:* The applicant has demonstrated competency in:

i) operating the telecommunication equipment in use; and

ii) transmitting and receiving radiotelephony messages with efficiency and accuracy.

f) *Privileges:* The holder of a current aeronautical station operator licence may operate an aeronautical station, provided that the licence holder is familiar with all pertinent and current information regarding the types of equipment and operating procedures used at that aeronautical station.

5.4 Aircraft maintenance engineer licence[26]

To be eligible for the issuance of an aircraft maintenance engineer licence, the applicant shall meet the following general requirements:

a) *Age:* The applicant is not less than 18 years of age.

b) *Experience:* The applicant has the following experience in the inspection, servicing and maintenance of an aircraft or its components:

i) for the issue of a licence with privileges for the aircraft in its entirety, a period not less than:

26. Also known as aircraft maintenance technician licence or aircraft maintenance mechanic licence.

1) four years; or

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

ii) for the issue of a licence with privileges restricted in accordance with 5.4 f) i) 2) and 3) a period not less than:

1) two years; or

2) one year[27] if the applicant has satisfactorily completed an approved training course.

c) *Knowledge:* The applicant has passed the following aircraft maintenance engineer licence theory examinations:

i) air law and airworthiness requirements;

ii) natural science and aircraft general knowledge;

iii) aircraft engineering;

iv) aircraft maintenance; and

v) human performance.

d) *Skill:* The applicant shall have demonstrated the ability to perform those functions applicable to the privileges to be granted.

e) *Privileges:* The holder of a current aircraft maintenance engineer licence may exercise the following privileges:

i) certify the aircraft or parts of the aircraft as airworthy after an authorized repair, modification or installation of an engine, accessory, instrument and/or item of equipment; and

ii) sign a maintenance release following inspection, maintenance operations and/or routine servicing.

f) The privileges of the holder of an aircraft maintenance licence shall be exercised only:

i) as endorsed on the holder's licence, in respect of:

1) aircraft as are entered on the licence in their entirety either specifically or under broad categories; or

2) airframes and engines and aircraft systems or components as are entered on the licence either specifically or under broad categories; and/or

3) aircraft avionic systems or components as are entered on the licence either specifically or under broad categories;

27. This one-year period is set by the State of licence issue as per Annex 1 provisions in this example (paragraph 4.2.1.3 b) 2)).

ii) provided that the licence holder is familiar with all the relevant information relating to the maintenance and airworthiness of the particular aircraft for which the licence holder is signing a maintenance release, or such airframe, engine, aircraft system or component, or aircraft avionic system or component which the licence holder is certifying as being airworthy.

g) A non-licensed person appointed by an approved maintenance organization to exercise the privileges of an aircraft maintenance engineer licence shall meet the requirements specified for the issue of a licence in 5.4 a), b), c) and d).

h) The holder of an aircraft maintenance engineer licence shall not exercise the privileges of the licence unless, within the immediately preceding 24 months, the holder has:

i) for a period of at least 6 months,

1) exercised the privileges of the licence; or

2) supervised the maintenance of aircraft relevant to the ratings held in an executive capacity; or

3) performed a technical training function relevant to the ratings held in an approved training organization; or

4) been engaged in any combination of 1), 2), 3) or 4); or

ii) passed the examination in c) i).

6. RATINGS FOR GROUND-BASED PERSONNEL

6.1 Air traffic controller ratings

To be eligible for the issuance of an air traffic controller rating, an applicant shall meet the following general requirements:

a) *Licence:* The applicant holds, or qualifies for the issuance of, a current air traffic controller licence, including a current endorsement for the language used for radiotelephony communications and, if different, for the English language.

b) *Experience:*

i) the applicant has satisfactorily completed an approved training course conducted by an ATO or a certified air traffic service organization;

ii) the applicant has satisfactorily provided under the supervision of an appropriately rated air traffic controller:

1) *for an 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; or

2) *for an approach control procedural, approach control surveillance, area control procedural or area control surveillance 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; or

3) *for an approach precision radar control rating:* not less than 200 precision approaches of which not more than 100 shall have been carried out on an approved radar simulator. 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;

iii) if the privileges of the approach control surveillance rating include surveillance radar approach duties, the experience shall include not less than 25 plan position indicator 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; and

iv) the experience specified in ii) shall have been completed within the 6-month period immediately preceding application.

c) *Knowledge:* The applicant has passed examinations, conducted by an ATO or a certified air traffic service organization, in the following subjects for:

i) *an 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 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.

iii) *approach and area control surveillance ratings or an approach precision radar control rating:* the applicant has demonstrated a level of knowledge of the subjects specified in ii) appropriate to the privileges granted to the holder of the rating sought and has passed examinations, conducted by an ATO or a certified air traffic service organization, in the following additional subjects:

1) principles, use and limitations of radar, other surveillance systems and associated equipment, as applicable; and

2) procedures for the provision of approach and area ATS surveillance services, and approach precision radar control services, as appropriate, including procedures to ensure appropriate terrain clearance.

d) *Skill:* The applicant has demonstrated, at a level appropriate to the privileges being granted, the skill, judgement and performance required to provide a safe, orderly and expeditious control service.

e) *Privileges:* The holder of a current air traffic controller rating may:

i) *for an aerodrome control rating:* provide and/or supervise the provision of aerodrome control service for the aerodrome for which the licence holder is rated;

ii) *for an approach control procedural rating:* provide and/or 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;

iii) *for an approach control surveillance rating:* provide and/or supervise the provision of approach control service with the use of applicable ATS surveillance systems 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. Provided the rating holder has the experience specified in b) iii) above, the privileges include the provision of surveillance radar approaches;

iv) *for an approach precision radar control rating:* provide and/or supervise the provision of precision approach radar service at the aerodrome for which the licence holder is rated;

v) *for an area control procedural rating:* 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

vi) *for an area control surveillance rating:* provide and/or supervise the provision of area control service with the use of an ATS surveillance system within the control area or portion thereof, for which the licence holder is rated.

f) The holder of an air traffic controller licence and rating(s) may not provide instruction in an operational environment unless the holder holds a current air traffic service instructor rating.

g) A rating shall become invalid once an air traffic controller has ceased to exercise the privileges of that rating for a period of 180 days.[28]

6.2 Aircraft maintenance personnel ratings[29]

To be eligible for the grant of an aircraft maintenance engineer group or type rating a person shall meet the following requirements:

a) *Licence:* The applicant holds a current aircraft maintenance engineer licence.

b) *Experience:* The applicant has completed 6 months of practical experience on the type or group of aircraft or components for which the rating is sought.

c) *Knowledge:* The applicant has successfully completed:

i) examinations acceptable to the Director; or

ii) a course of training relevant to the type of aircraft or components for which the rating is sought:

1) conducted by an approved training organization that is authorized to conduct such a course; or

2) conducted by the manufacturer of the applicable aircraft or component; or

3) approved by the competent authority of a foreign Contracting State.

d) *Privileges:* The holder of a current aircraft maintenance engineer rating may:

i) *group rating:* exercise the privileges of the aircraft maintenance engineer licence on any aircraft or component as defined in the Regulations; or

ii) *type rating:* exercise the privileges of the aircraft maintenance licence on the type of aircraft or component specified on the rating, unless operating under the authority of an approved maintenance organization, in which case the rating holder shall comply with the requirements of the approved maintenance organization.

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28. This period is set by the State of licence issue as per the Annex 1, 4.5.3.4, provisions in this example.
29. The examples given in this section illustrate how some Annex 1 provisions for aircraft maintenance personnel could be implemented.

Chapter 4

PROCEDURES

GENERAL

4.1 Licensing of personnel engaged in civil aviation is a critical element of maintaining the safety, security, efficiency and effectiveness of both the national and international civil aviation system. A structured process that ensures all essential participants in civil aviation are competent to fulfil their roles within the system is critical for proper control of the aviation industry worldwide.

4.2 This structured process requires the Licensing Authority to establish and promulgate comprehensive sets of procedures covering all aspects of licence issuance. As outlined in Part I, Chapter 3, 3.2, of this manual, procedures interpret primary and subordinate legislation in a hierarchical regulatory system and thus may be considered the "working documents" for most aviation system participants.

4.3 The procedures are frequently based on, and aligned to, tertiary legislation (often called "rules" or "specific operating regulations").

4.4 Internal standard operating procedures are also required for the PEL Office to ensure consistency in the licence issuance process over time and between staff members. One such example procedure for record-keeping is provided in the Attachment to this chapter.

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Attachment to Chapter 4

EXAMPLE OF INTERNAL PROCEDURES FOR LICENSING RECORD-KEEPING

a) *Security:* PEL staff are to comply with the following document control procedures to protect sensitive documents:

   i) *Paper documents:* all individual and organization client material and other sensitive documents held physically are classified as confidential and are stored in lockable cabinets in the PEL Office registry. Client medical records held physically are stored in the Medical Office and are not available to PEL staff. Document storage procedures are as follows:

      1) all cabinets are to be locked by the PEL administration officer on duty at the end of each working day. PEL staff members requiring access to confidential records outside normal working hours may sign out the appropriate keys and are responsible for securing those keys before departure; and

      2) PEL staff requiring access to confidential PEL files or documents during normal working hours may sign them out and are responsible for their safekeeping until the relevant action is complete and the files or documents are returned to the PEL Office registry. Each PEL staff member may store no more than six client files in locked drawers in an individual work station while awaiting action.

   ii) *Electronic documents:* all individual and organization client material and other sensitive records held in electronic format are classified as confidential and are stored in the PEL restricted shared drive. Access is available by individual password as follows:

      1) only examiners and examination staff have access to the examination question bank and other examination material except for examination results and non-identifying statistics, which are available to all PEL staff;

      2) completed medical assessments are held on client PEL files and are available to all PEL staff; and

      3) time-limited access to individual PEL read-only client files or printouts of specific documents may be authorized by the PEL manager or deputy manager for other CAA staff for bona fide purposes.

b) *Content and integrity of records:* All client files represent a complete and accurate record of the client's entry to, involvement in, and exit from the aviation system, as appropriate. Therefore, every licensing action taken by the Authority for each applicant or licence holder is to be correctly recorded and filed. This includes:

   i) *Completeness:* PEL records should be sufficient to provide documentary evidence of each licensing action and allow for reconstruction of the history of each licence issued; and

ii) *Integrity:* in order to preserve record integrity, each record entered in paper or electronic files is to be properly recorded by number and date of entry, as well as details of personnel accessing the files.

c) *Organization of records:* Electronic files are regarded as the master files. Therefore, all documents placed on client paper files are to be scanned and included in the client's electronic file. Client files should contain a summary of all licensing actions taken (including surveillance or enforcement actions and adverse decisions) and all the personal records of the applicant, including medical assessments, flight and written test results and correspondence in chronological order.

d) PEL electronic records are automatically backed up several times daily with copies also being made to a secure offsite server to ensure continuity in case of a major disaster. Any material that is corrupted, lost or inadvertently deleted can be retrieved by IT staff on request. Therefore staff members experiencing a data problem should report it promptly.

e) Electronic client records are to be held indefinitely. Paper files are to be retained for at least seven years after the client exits the aviation system, then securely destroyed after confirming the adequacy of the electronic records. Paper client files of prominent aviators should be transferred to the National Archives.

Chapter 5

EXAMINING PRINCIPLES

5.1 GENERAL

5.1.1 Annex 1 to the Chicago Convention requires that all applicants for licences shall demonstrate an appropriate level of knowledge and skill and meet certain experience requirements. For some licences and ratings, such as the multi-crew pilot licence, a type rating in the powered-lift category, or air traffic controller licence and ratings, satisfactory completion of approved training courses is a prerequisite. For many other licences, such as the private pilot or commercial pilot licence, instruction may also be provided in approved training courses. Where a Licensing Authority approves a training organization to conduct approved training courses, it may also approve it to conduct associated theory and practical examinations. Nevertheless, the Licensing Authority which directly issues national licences will need to provide, directly or indirectly, a range of licensing examinations and practical tests appropriate to the national aviation requirements.

5.1.2 Accurately and fairly determining an applicant's knowledge or skill is a complex, exacting and vital task that requires a high level of experience and expertise in the relevant specialist area as well as an excellent understanding of examination and assessment principles, procedures and techniques. As a result, PEL Offices in many Licensing Authorities augment their resources with specialist personnel from other directorates of the CAA to carry out some of the examination tasks.

5.1.3 Licensing Authorities may delegate some or all of the testing functions to a service provider, make an agreement with the CAA of another State to provide the service, or even accept certified copies of examination or test results provided by specified Licensing Authorities. When an outsourcing option is chosen, it is important to note that the PEL Office still retains overall responsibility for the integrity and effectiveness of the testing systems for theoretical knowledge and practical skills.

5.1.4 Therefore, regardless of how the services are provided, staff members responsible for determining if licence applicants have demonstrated the requisite knowledge and skill should understand the principles involved, which is the subject of this chapter. Of necessity, the treatment is broad so that specific implementation details will need to be determined by the individual Licensing Authority.

5.1.5 The issue of a licence is evidence that the State is satisfied that the holder has demonstrated an internationally acceptable degree of competency. However, that competency is the result of the applicant's training and capability, not of the examinations or tests passed. Rather, the examination system should be considered an audit of an applicant's knowledge and skill to confirm that the training system has succeeded. By implication, a well-designed system of theoretical examination and practical testing will drive the training system to produce licence applicants of the appropriate standard.

5.2 THEORETICAL KNOWLEDGE EXAMINATIONS

5.2.1 General

Annex 1 to the Chicago Convention broadly outlines the subjects of which applicants shall demonstrate appropriate knowledge. For example, applicants for pilot licences must demonstrate knowledge in nine subjects, applicants for air

traffic controller licences must demonstrate knowledge in seven subjects, and applicants for aircraft maintenance personnel licences must demonstrate knowledge in five subjects.

5.2.2 Syllabi

5.2.2.1 The topics in these subjects are often re-distributed for ease of examination. For example, the navigation subject for pilots may be subdivided into two areas: visual navigation and radio navigation. On the other hand subjects may be combined: for example, at the private pilot level, some Authorities examine aircraft general knowledge, flight performance, planning and loading as one subject; and some Licensing Authorities choose to combine all subjects at the private pilot level into one broad examination. Once the Licensing Authority has determined the optimum division of examination subjects for national requirements, a syllabus should be developed and promulgated for each one.

5.2.2.2 An objective syllabus is a key component in determining a candidate's level of theoretical knowledge of a subject because it prescribes the elements that must be able to be demonstrated and the performance required (e.g. by "describing", "listing", "without aids, calculate"). Often, the Licensing Authority may require different levels of knowledge to be demonstrated within a subject. For example, the applicant may be required to be broadly familiar with some elements of a subject, have a good grasp of the theoretical concepts of other elements, and have a detailed knowledge of others, including practical application. A sound syllabus helps to focus teaching and study. Equally important is that items not in the syllabus may not be examined.

5.2.2.3 As outlined in Doc 9841, the continuous improvement of training programmes offered by approved training organizations is captured within their quality assurance programme. But as a general principle, syllabi should be reviewed periodically, no less frequently than once every three years, to ensure that they remain relevant and reflect current legal requirements, technology, terminology, operational practices, etc.

5.2.3 Examination design and development

5.2.3.1 Once the syllabi have been determined, and accepted by industry, the Licensing Authority should design appropriate examinations. Well-designed and objective examinations require careful consideration of the optimum syllabus coverage, the examination format and duration, the number and type of questions and the pass mark.

5.2.3.2 Most syllabi are too extensive for every item to be covered in a single examination so an examination for a subject normally covers only a representative sample of the syllabus. Even so, in each examination, all major topics should be covered as well as individual syllabus items that are considered indispensable, and all items should be examined over a period of time or series of examinations.

5.2.3.3 Theory examinations may be in written or oral form although, for practical reasons, most licensing theoretical examinations are written. Oral examinations require an experienced examiner with an in-depth knowledge of the specialist subject matter to conduct a one-on-one examination of a candidate, and sound processes, including statistical analyses, should be put in place to ensure consistency and objectivity. Most commonly, an oral theory examination is a component of a practical test (such as a flight test) although some States require an oral airworthiness examination for aircraft maintenance personnel licences or ratings. Written examinations are provided in paper form by many Licensing Authorities although computer-based examinations are increasingly popular.

5.2.3.4 Computer-based examinations have the benefit of potentially providing unique but equivalent examinations for every candidate, drawing on an extensive database of questions (to combat cheating); they can deal with large numbers of candidates at once, who do not necessarily have to start and finish at the same time; they can be marked and results provided almost immediately; and they can potentially explore knowledge more effectively than paper-based examinations. On the other hand, computer-based examinations are expensive to set up, require built-in security systems to avoid compromising the questions, and require ready access to trained computer technicians to maintain hardware and software.

5.2.3.5 Ideally, the duration of an examination should be between one and three hours, depending on the syllabus content and required coverage. If, after taking all factors into account, an examination requires more than three hours to complete, consideration should be given to alternatives, such as subdividing the syllabus requiring two shorter examinations.

5.2.3.6 There are many types of theory examination questions, including essay, short answer, diagrammatic, calculations, true/false and multiple-choice types. The particular type selected for a particular examination will depend on a number of factors, including the need to determine a candidate's ability to write concisely and coherently, and more than one question type may be included in an examination. Multiple-choice questions are commonly used for standardization purposes, to elicit precise answers and for ease of marking. However, multiple-choice questions need to be constructed thoughtfully to counter the influence of uninformed guesswork.

5.2.3.7 Procedures for the preparation of examinations, describing the frequency of reviewing and updating the questions, etc., should be formally developed by the Licensing Authority, taking into account the size and complexity of the national bank of questions. The discussion below illustrates some points that the Licensing Authority may consider in developing those procedures.

5.2.3.8 Questions must be written by an appropriate specialist with a background in training and testing. In addition to writing the question (with model answers, calculations, correct answer and distracters, etc.), the writer should indicate a syllabus item and study reference. The new question should be peer-reviewed by a moderator and changes made in consultation. Then a third moderator should answer the question under "examination" conditions and provide further feedback. Sometimes, questions are written by a committee but care should be taken with this technique to avoid "group-thinking", where a group seeking consensus tends to override realistic appraisal of alternative courses of action (e.g. introducing questions about new technology or new procedures).

5.2.3.9 External question writers or moderators should have no potential conflicts of interest; for example, they should not be associated with any training organization or with persons intending to sit an examination. Precautions should also be taken not to compromise the security of examinations or questions worked on outside the Licensing Authority. Questions lost, mislaid or stolen are considered to be compromised and should be withdrawn from use.

5.2.3.10 Marks should be allocated to each question and the pass mark determined for the subject. In an examination, different marks may be allocated per question, depending on the question type, complexity, importance or degree of difficulty. While candidates are expected to know the complete subject, the pass mark should not be 100 per cent. Various factors such as candidate writing errors or forgetfulness or unintended question ambiguity mean that a 100 per cent pass mark is unrealistic. Commonly, pass marks for licensing examinations are set between 70 per cent and 80 per cent. A statistical review of historical pass rates and pass mark distribution will help refine the appropriate pass mark.

5.2.3.11 When a new question is first used in licensing examinations, its performance should be closely scrutinized to confirm that it is achieving the desired objective. However, written examinations generally reuse questions many times because smaller Licensing Authorities do not have the resources to develop extensive question banks and because larger Licensing Authorities need to provide a large number of examinations, perhaps on a daily basis. Therefore, performance of all questions should be periodically reviewed, both by statistical analysis and by considering examination candidate feedback.

5.2.3.12 Examination questions that are correctly answered more frequently (e.g. over 95 per cent) or less frequently (e.g. below 50 per cent) are not necessarily compromised or deficient but warrant evaluation by a moderator. Questions that are technically faultless but which are the subject of significant candidate criticism should be further reviewed and possibly withdrawn. If the question is not properly understood by a significant proportion of the target population then it is not fulfilling its design purpose.

5.2.3.13 Where examinations are provided from a set of master papers, performance of examinations as a whole should also be reviewed. Every effort should be made to ensure that all examinations used in a subject are well-balanced, of equal degree of difficulty (as measured by pass rates and candidate feedback), and require a similar amount of effort (as measured by average completion times and candidate feedback). Computer-based examination systems should include subroutines to ensure that each unique examination compiled from the question bank is similarly equivalent to all others.

5.2.4 Examination administration and delivery

5.2.4.1 Sound administration and delivery are both important components in ensuring the integrity of the theory examination system. The main elements of each are described below.

5.2.4.2 An annual timetable of examination sittings should be established and promulgated well in advance of actual delivery, using historical trends modified to take account of anticipated demand as well as input from training organizations about planned course types and sizes. The frequency of sittings at a particular location depends on demand and other factors. Regular sittings should be provided to ensure applicants are given reasonable opportunities to demonstrate theory knowledge and then apply for licence issue in a timely manner. Provision should be made for non-timetabled sittings, normally for an additional fee.

5.2.4.3 Examination fees should be set and periodically reviewed. The fees should reflect the total direct and indirect costs of providing the examinations. Where the examination service is outsourced, the cost may also include a reasonable commercial return.

5.2.4.4 Information should be made readily available about all aspects of the examination system, particularly for the benefit of candidates who are entering it for the first time, including:

a) examinations that must be passed for each licence, rating, approval or authorization;

b) syllabi and examination details (format and duration);

c) sample examination questions and model answers;

d) sitting requirements (including identification procedures, permitted material, whether eating or drinking is permitted and if leaving the room is allowed during examinations);

e) sitting dates and venues;

f) procedures for dealing with alleged unauthorized conduct or cheating and penalties if proven;

g) recount and review procedures;

h) number of examination attempts permitted within a specified period;

i) validity periods of examination passes;

j) fees and refund conditions;

k) additional services (e.g. late entry, priority marking, special sittings);

l) application forms and procedures; and

m) general information and customer service matters (including complaint procedures).

5.2.4.5 A very effective and economical way of promulgating this information is for it to be published on the Authority website, but an alternative is to issue an information booklet or series of information sheets covering the same material. Whatever method is chosen, it is important that the information be regularly reviewed and amended as soon as any changes are made to the examination system.

5.2.4.6 Often Licensing Authorities are asked what textbooks are recommended, and great care should be taken when answering to avoid appearing to endorse particular textbooks over others. Also, instructors and candidates should be encouraged to refer to the syllabus rather than simply follow one particular textbook since few textbooks coincide with a complete syllabus.

5.2.4.7 Examination applications should be processed promptly. The PEL staff members' workload for this will vary, depending on whether the applications are made electronically and what degree of automation is built into the system. However, even if a Licensing Authority provides a fully automated electronic booking system, manual processes must be available to cater for candidates who do not have ready access to computers or to the Internet or who cannot pay electronically. The system should check relevant personal details of the examination candidate, ensure the application is permitted, check that there is an available seat at the requested sitting, check payment is for the correct amount, then process the application and issue a receipt/examination booking notice.

5.2.4.8 If paper-based examinations are provided, once the closing date for registering to a sitting has passed, an appropriate examination paper must be printed for each candidate. Individual papers must be checked to ensure that they are for the correct candidate, that there are no missing pages and that all printing is legible. If the examinations are not to be conducted in the PEL Office, the papers must be sent, via a secure means, to the chief supervisor at the sitting location.

5.2.4.9 Examination supervisors (sometimes called proctors or examination conducting officers), if not members of the Licensing Authority staff, must be carefully selected and vetted. Not only must they be of impeccable character but they must have acceptable sight and hearing, follow instructions, but act decisively when needed, and ideally have a teaching or supervisory background. An example of the responsibilities of, and qualifications for, the examination supervisors is contained in Appendix A to Part I.

5.2.4.10 External examination venues must also be carefully selected:

a) they must be of an adequate size to cater for the planned number of candidates with the designated spacing between desks;

b) the room must allow the examination supervisor(s) an unobstructed view of all candidates;

c) they must have adequate lighting and temperature control;

d) there must be space for bags and personal effects to be stored during the sitting (candidates should not take bags to their desks); and

e) there should be adequate male and female toilet facilities.

5.2.4.11 Examination delivery procedures and instructions for candidates should be comprehensive and thoroughly understood by all supervisors. In particular, procedures should include provisions to prevent cheating, copying or unauthorized communication. It is strongly recommended that a candidate who leaves the room during a session of examination (e.g. to go to the toilet) not be permitted to re-enter because of the break in continuity of supervision. Eating or drinking can be very disruptive to other candidates and should be prohibited. Candidates who disobey examination instructions (e.g. commencing before being authorized or continuing to write after being told to stop) should be reported and follow-up action taken by the PEL Office because, for a number of reasons, it is best for the examination supervisor to avoid confrontation.

5.2.4.12 Minimum ratios of examination supervisors to candidates should be determined for each type and format of examination so that the actual number of supervisors at a sitting will depend on the number of candidates. A back-up supervisor should also be available in case of sickness or other contingency. An examination should not proceed without the requisite number of supervisors.

5.2.4.13 Supervisor ratios should be determined by the requirements to effectively oversee the candidates during the examination and to efficiently carry out all administrative tasks, such as confirming identification, assigning candidates to seats (candidates should never be allowed to choose their own seat), recording candidate signatures, checking candidate equipment or material, and gathering completed scripts. Computer-based examinations generally require a lower ratio of supervisors to candidates because less administration is required.

5.2.4.14 Computer-based examinations will be marked immediately after the examination is completed and results should be available shortly afterwards. Results should not be provided in the examination room.

5.2.4.15 For paper-based examinations, once completed scripts or answer books are collected, they should be returned promptly to the PEL Office for marking. In the case of multiple-choice examinations using pro forma answer sheets, marking can be done automatically or semi-automatically using a reader. Otherwise, scripts will have to be marked by trained marking staff.

5.2.4.16 Examination result notices, showing the result, marks gained and knowledge deficiency statements for incorrectly answered questions, should be provided to the candidate as soon as practicable within the specified time frame. Results should not be released to third parties unless it is with the express written permission of the candidate and is permitted by domestic law.

5.2.4.17 All paper material related to the examinations should be stored for the prescribed period then securely destroyed (shredding/burning). Computer records should be held for a longer period in case they are required at a later stage in respect of the licence holder.

5.2.4.18 Finally, PEL staff members should treat all examination candidates as customers and aim to provide the best level of service consistent with their regulatory obligations. Customer-service procedures (including a publicly available "service charter") should be developed and followed. In particular, the process for receiving and dealing with disputes and complaints needs to be clearly understood by all PEL staff members.

5.3 FLIGHT TESTS AND OTHER PRACTICAL EXAMINATIONS

5.3.1. General

5.3.1.1 The most common type of practical examination for licence issuance is flight testing for flight crew members although air traffic controllers, aircraft maintenance personnel and other ground personnel are required to undergo practical testing of a different nature. Language proficiency assessments are covered in more detail in Chapter 6.

5.3.1.2 The basic concepts of conducting flight testing and practical examinations are very similar to those of theory examinations but the different format and method of delivery results in some important and significant differences.

5.3.2 Syllabi

5.3.2.1 The practical skills to be demonstrated by a successful applicant for a licence or rating must be set out in syllabi. Conceptually, a syllabus for demonstrating practical skills is little different from one for demonstrating theoretical

knowledge: each task must be described, including the conditions under which the task must be demonstrated and the level of performance required. However, while some practical aspects can be described objectively, some necessarily require a degree of subjectivity.

5.3.2.2 For example, Annex 1 requires a CPL applicant to demonstrate competency in flying at critically slow airspeeds, but the standards and conditions for this are determined by each Licensing Authority. The assessment criteria in a national syllabus for this task may include the objectives to demonstrate straight and level flight at a nominated altitude, ±50 feet, at a nominated airspeed (not less than 1.2 V_s) within ±5 knots, and in balanced flight with no more than 1/4 ball sustained deflection in slip or skid. The candidate might also be required to pilot the aircraft with smoothness and accuracy, exercise appropriate judgement and decision making and maintain situational awareness throughout as assessed by the flight examiner. However, providing the candidate has not made an imprudent decision to continue flight in unsuitable conditions, some latitude may be permitted to compensate for weather factors such as turbulence or up and down draughts.

5.3.2.3 Several authorities have published flight and other test syllabi, for example:

a) New Zealand: see www.caa.govt.nz/pilots/pilots.htm#FTSG;

b) Canada: see http://www.tc.gc.ca/eng/civilaviation/publications/tp13462-menu-2309.htm;

c) United States: see http://www.faa.gov/training_testing/testing/airmen/test_standards/.

5.3.3 Practical/skill test design

Because flight tests and other practical examinations are generally assessed by a single examiner, it is important that the test is designed and specified to ensure fairness and consistency: all tests of the same type should be assessed according to standardized criteria, regardless of where they are conducted, by whom, and what equipment (or aircraft) is used. Syllabi detail test coverage and performance criteria but other test design specifications should include:

a) *The maximum and minimum durations of an individual test and the proportion of time allocated to each task or element.* The maximum duration has two aspects to it: the examiner cannot unnecessarily protract a test because that may unfairly degrade the candidate's performance, and a candidate must be able to perform all practical tasks and answer all questions within a reasonable time frame.

b) *How minimum experience requirements are to be verified.* Normally, this is done by reference to the candidate's logbook.

c) *The tasks that may be re-attempted if criteria are not met, how many re-attempts may be allowed and under what conditions.* Some tasks (e.g. completing the correct actions for a practice engine failure after take-off) may be designated as "critical" and must be successfully completed on the first attempt while others (e.g. maintenance of altitude during a steep turn) may be re-attempted if criteria are exceeded on the first attempt. There should also be a limit to the overall number of re-attempts permitted.

d) *The respective roles of examiner and candidate at all stages, particularly with respect to real or simulated emergencies.* For flight tests, there must be no doubt who is pilot-in-command, and the procedures for handing/taking over control of the aircraft must be clear.

e) *The type of equipment that may be used.* Most flight tests for the issue of a licence are conducted in appropriate aircraft, but approved flight simulation training devices may be acceptable in some

circumstances. All ATC practical examinations are preferably conducted in a synthetic training device although that may not be possible or feasible for some States.

f) *The type of assessment that is required.* The most appropriate type of assessment to employ for a licence issue test is "summative evaluation", where the only intended outcome is to certify, or not, the applicant's mastery of the intended learning outcomes.

g) *The type, content and duration of the debrief.* At the conclusion of testing, the candidate should be advised of the result and, if applicable, advised of fail points or skill deficiencies, as well as aspects that were particularly well executed. It is not normally appropriate for examiners to provide formative or diagnostic evaluation (training feedback). However, the candidate should be encouraged to self-criticize his or her performance and to provide feedback on the conduct of the test.

h) *The examiner report.* The information that is to be recorded should be detailed as well as how the form should be processed, particularly if the examiner is not employed by the Licensing Authority. The candidate should be given a duplicate copy of the report.

5.3.4 Practical test administration and delivery

5.3.4.1 Practical test administration is similar to theory examination administration but with some important differences. The nature of practical tests means that costs for individual candidates are significantly higher than for theory examinations. Hence, on a "user-pays" basis, fees must be set appropriately, but the high cost of practical tests should have no bearing on the outcome. Similarly, fair consideration should be given to when refunds may be made and to when fees are forfeited.

5.3.4.2 A broad annual timetable may be established and promulgated, but flexibility should be provided for individual test candidates to cater for practical matters such as inclement weather, aircraft or equipment unserviceability or verifiable and incapacitating medical problems. Many of the costs for a practical test are incurred even if the test does not proceed, so robust arrangements should be promulgated and implemented for cancellations or postponements for other than the foregoing reasons.

5.3.4.3 In the same manner as for theoretical examinations, sufficient information should be made readily available about all aspects of the practical tests. The best method of promulgation is via the Licensing Authority's website.

5.3.4.4 Once an examiner is assigned to an individual candidate, the examiner should make contact with the candidate to finalize detailed arrangements for the test. Actual test delivery will proceed on the assigned date and at the assigned location in accordance with the particular test syllabus and specifications.

5.4 QUALIFICATIONS FOR EXAMINERS

5.4.1 In practical terms, examiners are the main arbiters of entry standards for the aviation system. As such, they should set the example for their respective professions and must have a thorough knowledge of the licensing system and high personal integrity.

5.4.2 Whether they are responsible for theoretical examinations or practical tests, they must be experienced and current practitioners in their specialist area and have a strong background in training and assessment. Their requirement for the prescribed standard of performance from personnel being tested should not be in doubt. They should also have no professional or personal conflicts of interest with their examining function.

5.4.3 Licensing Authorities should specify the minimum qualifications for appointment as examiners. For example, a flight examiner must hold the appropriate level and category of licence for the flight tests to be conducted (e.g. commercial pilot — aeroplane) and hold or have held a flight instructor rating or authorization and have impeccable personal flying standards. Examples of the responsibilities of, and qualifications for, examiners are contained in Appendix A to Part I.

5.4.4 Initial or indoctrination training is necessary for all new examiners, to cover their new roles and responsibilities with the shift in emphasis from training to assessment only.

5.4.5 Technical personnel involved with theoretical examination development or assessment should also have excellent written language skills and be computer literate. Examples of responsibilities of, and qualifications for, such personnel are contained in Appendix A to Part I.

5.4.6 All examiners must ensure that the qualifications appropriate to their area of responsibility remain current. In addition, the Chief Examiner should normally arrange recurrent or refresher training to help examiners remain current and to assist with standardization. This is particularly important for practical examiners who normally operate individually (such as flight examiners).

5.4.7 Once the Licensing Authority has appointed a CAA examiner or has designated a non-CAA person as examiner, it is responsible for closely supervising the subsequent activities of the examiner. There should be requirements for minimum annual numbers of examinations to be conducted by each examiner. There should also be requirements, on a periodic basis, for the observation of examinations, especially practical checks, conducted by the examiner so that the Licensing Authority can monitor performance and apply remediation measures (e.g. training) as necessary. An examiner is to demonstrate competency in evaluating the performance of applicants or licence holders during the conduct of checks.

Chapter 6

PROCEDURES FOR ASSESSMENT OF LANGUAGE PROFICIENCY

6.1 GENERALITIES AND REQUIREMENTS

6.1.1 All licence holders who use the radiotelephone for air-ground communications should be proficient in speaking and understanding the language used for radiotelephony communications. Moreover, aeroplane, airship, helicopter and powered-lift pilots, flight navigators required to use the radiotelephone aboard an aircraft, air traffic controllers and aeronautical station operators must have demonstrated their proficiency and have it endorsed on their licence.

6.1.2 Air-ground radiotelephony communications may be conducted in the language normally used by the station on the ground or in English. However, English shall also be available at all stations on the ground serving designated airports and routes used by international civil aviation (it is a Standard in Annex 10, Volume II, Chapter 5). In effect, this means that all air traffic controllers involved with international civil aviation must be proficient in speaking and understanding English.

6.1.3 All licences for which Annex 1, 1.2.9, requires a language proficiency demonstration in the language normally used for radiotelephony communications should be endorsed either with a statement of compliance with requirements (as per 5.1.1.2 XIII) of Annex 1) or with a statement of non-compliance (as per Article 39 b) of the Chicago Convention). Examples of licence endorsements for language proficiency can be found in Attachment A to this chapter.

6.1.4 Standardized ICAO phraseology retains its importance and should always be used when applicable. However, a finite list of phraseology cannot cover every conceivable situation and thus must be augmented by plain language, especially to describe unusual events or for when clarification or explanation is required.

6.1.5 To meet ICAO language proficiency requirements, an applicant for a licence or a licence holder (in this chapter, the term "licence"[1] refers only to air traffic controller, aeronautical station operator, flight navigator and aeroplane, airship, helicopter and powered-lift pilot licences) must demonstrate, in a manner acceptable to the Licensing Authority, compliance with the holistic language descriptors contained in Annex 1 to at least the ICAO Operational Level (Level 4).

6.1.6 Doc 9835 contains technical details of the ICAO language proficiency requirements and aviation language training and testing.

6.2 DEMONSTRATION OF PROFICIENCY

6.2.1 ICAO language proficiency requirements apply to speaking and listening proficiency only and do not address the ability to read or write. In assessing a person's language proficiency, it is necessary to analyse individual categories of that person's language use (a discrete approach), as well as assess the person's overall ability to communicate in a relevant context (a holistic approach).

1. Air traffic controllers and aeronautical station operators may or may not be licensed. Unlicensed State employees may operate as air traffic controllers and aeronautical station operators on condition that they meet the same requirements as licensed personnel. Therefore unlicensed State employees should have a similar endorsement as licensed personnel in their records.

6.2.2 In terms of effective aviation communication, Annex 1 requires proficient speakers to be able to:

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.

6.2.3 It is important to note that the ICAO Rating Scale does not refer to "native" or "native-like" proficiency, a philosophical decision that "native" speech should not be privileged in a global context. All participants in aeronautical radiotelephone communications must conform to the ICAO proficiency requirements, and there is no presupposition that first-language speakers necessarily conform. It is to be noted that, for international civil aviation operations, English has a clear role as an international language: it is a first language or widely used national language in about sixty countries and is an important second language in many more.

6.2.4 In addition to the holistic descriptors in 6.2.2 a) through e), a person must demonstrate a minimum standard of linguistic proficiency in each of the following five specific categories: pronunciation; structure; vocabulary; fluency; comprehension; and interactions. A summary of how these categories are used in Doc 9835 is as follows:

a) *Pronunciation (phonological competence).* The basic elements of pronunciation (therefore of accent) are the individual sounds (phonemes) of the language, the patterns for stressing and unstressing syllables and words, and the patterns governing the rhythm and intonation of sentences or utterances. Pronunciation is particularly susceptible to the influence of a first language or regional variations and plays a very important role in the intelligibility of messages. The learning processes involved in the development of pronunciation include:

   1) listening and perception of meaningful phonemes and patterns;

   2) reproduction through repetition and rehearsal; and

   3) adjustment in accordance with overt correction or feedback on communicative success.

b) *Structure (grammatical competence).* This skill addresses the accurate and appropriate use of basic and complex syntactic structures and grammatical features of the language, such as tenses and modality. Grammar and syntax are fundamental to conveying meanings and intentions. The accuracy of their use is a strong indicator of proficiency. The learning processes involved in the development of grammatical competence are:

   1) discovery of syntactic and grammatical rules by presentations and explanations or by induction;

   2) productive use of structures in isolation; and

   3) productive use within context.

c) *Vocabulary (lexical competence).* The elements of vocabulary are words and fixed expressions comprising several words. They are often separated into function words (usually fulfilling a grammatical role) and content words related to topics being discussed. The level of proficiency will be apparent in the accuracy, range and speed of access to the vocabulary required in a given situation. This skill also includes paraphrasing skills. The learning processes involved in the development of lexical competence are:

1) identification and memorization of new items;

2) recognition and retrieval in context;

3) application of rules for word formation (morphology);

4) application of “collocational” knowledge (words frequently occurring together in pairs or in word clusters); and

5) correct use of words in their grammatical and syntactic context.

d) *Fluency.* This skill addresses the ability to produce unrehearsed speech at an appropriate pace. Non-functional hesitations and fillers, due to language processing or excessive self-monitoring, gradually diminish as proficiency increases. Also speakers increase their ability to guide listeners through their discourse using lexical, structural and phonological resources of the language. The learning processes involved in the development of fluency are:

1) mastery of other subskills;

2) rehearsal and repetition; and

3) production practice with reduced monitoring.

e) *Comprehension.* This skill addresses the ability to recognize and understand speech. Development of this skill will result in decreasing difficulty when dealing with complex discourse, with unexpected or unfamiliar topics, unfamiliar accents or delivery styles and with unfavourable conditions of reception (due to background noise, etc.). Proficiency in comprehension can be characterized by the degree of detail and speed of understanding. The learning processes involved in the development of comprehension are:

1) mastery of other subskills;

2) progression from simplified to natural speech; and

3) graduated listening tasks (word recognition, overall meaning, complex meanings and inferences).

f) *Interactions.* This skill addresses the ability to engage in spontaneous spoken dialogue and to successfully achieve communicative goals. Increasing proficiency in this skill results in reduced allowance or effort on the part of an interlocutor to maintain a conversation. It is characterized by the rapidity and appropriateness of responses, the ability to volunteer new information, to take conversational initiatives, to be responsive to feedback from an interlocutor, and to detect and to resolve misunderstandings as they occur. The learning processes involved in the development of interaction are:

1) exercises to acquire fluency and comprehension;

2) observation of interaction by others; and

3) active situational practice with varied interlocutors.

6.2.5 The ICAO language proficiency requirements apply to native and non-native speakers alike, and the burden for improved communications should not be seen as falling solely on non-native speakers (see Doc 9835, 5.3.1). In a language proficiency demonstration, each ICAO linguistic category is assessed as meeting one of the following descriptor levels:

Level 1 (Pre-elementary): Indicates proficiency below the ICAO minimum required standard. It serves as a benchmark for training.

Level 2 (Elementary): Indicates proficiency below the ICAO minimum required standard. It serves as a benchmark for training.

Level 3 (Pre-operational): Indicates proficiency below the ICAO minimum required standard. It serves as a benchmark for training.

Level 4 (Operational): The minimum required language proficiency standard for radiotelephony communication. Recurrent assessment is required.

Level 5 (Extended): Indicates proficiency more advanced than the ICAO minimum required standard. There is a reduced requirement for recurrent assessment.

Level 6 (Expert): Indicates proficiency more advanced than the ICAO minimum required standard. There is no requirement for recurrent assessment.

6.2.6 A person's language proficiency is determined by the lowest level achieved in any category. For example, a person's language categories might be individually assessed as follows:

Pronunciation	Level 3
Structure	Level 4
Vocabulary	Level 5
Fluency	Level 4
Comprehension	Level 5
Interactions	Level 4.

6.2.7 This person's overall language proficiency would be assessed as Level 3 (Pre-operational), despite having been assessed as Level 5 in two categories, because the person's pronunciation, stress, rhythm and intonation are influenced by first language or regional variation and frequently interfere with ease of understanding. In order to reach Level 4, training for that person should focus on improving pronunciation.

6.2.8 It should also be clear that in order to meet the minimum required proficiency level for radiotelephony communication (Level 4 rating) a person must demonstrate proficiency at Level 4 in all language categories.

6.2.9 It is well known that some deterioration occurs in the language proficiency of individuals who do not use their second or foreign language for a long time (although people do not normally lose fully acquired first languages). Therefore, a licence holder whose English language proficiency is below Level 6 and who does not regularly speak English is likely to experience some loss in proficiency over time and require recurrent language testing. Annex 1, 1.2.9.6, stipulates that individuals who demonstrate language proficiency below Expert Level (Level 6) on the ICAO Rating Scale shall be formally evaluated at intervals in accordance with an individual's demonstrated proficiency level, as follows:

a) those individuals demonstrating language proficiency at the Operational Level (Level 4) should be evaluated at least once every three years; and

b) those individuals demonstrating language proficiency at the Extended Level (Level 5) should be evaluated at least once every six years.

6.2.10 Recurrent testing is not required of anyone, native or non-native speaker, who is able to demonstrate language proficiency at Expert Level (Level 6).

6.2.11 Because it is not difficult to recognize Level 6 or "Expert" (including native or native-like) proficiency, the assessment at Level 6 should be carried out by a trained and qualified rater, but not necessarily by a language testing specialist, and does not require the use of a fully developed specialized language test.

6.2.12 Procedures should be developed and implemented for the formal validation of Level 6 proficiency. These procedures should be identified as assessment "events" rather than tests. They should involve a trained and qualified rater or rating team and should include assessment of language used in a work-related context with reference to the ICAO Rating Scale. The rater may be an operational flight or ATC examiner, and the procedure may be carried out through operational assessments which include a language proficiency component. Although the relative ease of assessing proficiency at the Expert Level allows flexibility in the way such assessments may be made, it is essential that each State establish appropriate procedures to ensure that the results of the assessment are properly documented.

6.2.13 Finally, taking into account that language proficiency assessment criteria are standardized, a State may consider recognizing the language proficiency assessments conducted by another State (as evidenced by a licence endorsement), after satisfying itself that the other State conducts formal assessments in compliance with Annex 1. As a prerequisite to recognition, the level of language proficiency demonstrated to the other State by the holder of a foreign licence should be determined (as indicated in the foreign licence endorsement or through contacting the PEL Office of the other State).

6.3 ASSESSMENT DESIGN AND DEVELOPMENT

6.3.1 There is no single test that can adequately assess the language proficiency of all radiotelephone users. Rather, a "testing service", either in-house or outsourced, that can continually provide new test items and/or a large number of raters and administrative services is required. Specific-purpose tests are required in which test format, methods and content are derived from an analysis of a specific-purpose target language use situation.

6.3.2 As noted in 6.2, ICAO language requirements apply only to speaking and listening proficiency so that reading, grammar, writing or vocabulary tests do not provide evidence of meeting those requirements. A person who can read and write English well may not necessarily speak it likewise. Conversely, a person who is not a good reader or writer of English may be a competent speaker.

6.3.3 Therefore, each aviation language test needs to meet the following criteria:

a) it must be a proficiency test of speaking and listening;

b) it must be based on the ICAO Rating Scale and holistic descriptors;

c) it must test speaking and listening proficiency in a context appropriate to aviation; and

d) it must test language use in a broader context than in the use of ICAO phraseologies alone.

6.3.4 Traditionally, language tests did not test language skills directly but instead tested discrete features of the language thought to underlie language skills (i.e. knowledge about language). Such indirect tests are not appropriate to assess aviation language proficiency.

6.3.5 Instead, direct, communicative proficiency tests of speaking and listening abilities and performance are appropriate assessment tools. Proficiency tests are administered directly, through face-to-face contact (or over the telephone, which simulates the radiotelephone environment) between tester and candidate or semi-directly, through recorded speaking prompts and recorded responses.

6.3.5.1 In *direct-testing* procedures, the test-taker interacts with a "live" interlocutor, who may also be an examiner or rater. The person-to-person interaction in a direct-testing procedure may be directly observed and assessed in real time by a rater or can be recorded for subsequent rating. Test-takers are asked to perform language tasks based on a set of elicitation prompts. A prompt may be a question asked by, or a topic given by, an interlocutor. The test-taker may be asked, for example, to engage in a conversation-like interview with the interlocutor or to perform in a role play.

6.3.5.2 In *semi-direct testing*, speech samples are elicited through pre-recorded and thereby standardized prompts. This is a significant benefit in that every test-taker receives the same or similar prompts, facilitating fairness. Another advantage of semi-direct testing is that the test can be administered in an audio or computer laboratory so that a larger number of test-takers can be tested at the same time.

6.3.6 Each testing format has its own advantages and disadvantages (see details in Doc 9835, 6.2.7). The direct test can be made more natural, more flexible or more communicative, but it tends to be more time and human resource intensive than semi-direct testing and requires particular attention to the standardization of design and administration procedures. In the semi-direct test, every test-taker receives the same prompts, ensuring a greater degree of fairness. It can be a more cost-effective method of testing. However, the standardized prompts can quickly become compromised and therefore need frequent updating.

6.3.7 In both testing formats, either audio or video recording of the test performance, even if not necessary for subsequent rating, is strongly recommended for verification and record-keeping purposes.

6.3.8 Aviation language tests carry high stakes because they can significantly impact the lives and careers of the candidate or other stakeholders. Consequently they should be designed, developed and delivered in accordance with international best practice. Best practice in language test design and development requires representatives from all stakeholders to participate in the process: pilots, controllers, administrators, operational trainers and aviation language trainers, guided by and working with applied linguists having a specialist background in language test development.

6.3.9 Tests prepared without the expert input of professional test developers can be adequate for diagnostic purposes (e.g. in order to place someone within a training programme or to judge progress) but the need for reliability and validity in the aviation licensing context is such that authorities and administrators should turn to language test development professionals in order to ensure that the tests used or developed for compliance with ICAO language proficiency standards will provide reliable and valid results.

6.3.10 The overriding concern of such "high-stakes" language test development is fairness, in terms of validity (i.e. a test indeed tests what it is supposed to test) and reliability (i.e. the test gives consistent and fair results). The test should also be practicable (it should not place an unreasonable demand on available resources) and affordable for the candidates.

6.3.11 In order to ensure that the validity and reliability criteria are met, test developers should follow, and document, the following basic steps during test development:

a) needs analysis;

b) test construction;

c) item-writing;

d) trialling and data analysis;

e) revising, re-trialling and data analysis; and

f) benchmarking and standard setting.

Consideration should also be given to how to assess candidate performance.

6.3.12 It may be true that laypersons or inexpert raters (people with no academic training or qualifications in language teaching or testing) can make informal judgements about language proficiency, particularly in a “pass” or “fail” sense. However, test-takers who do not pass a high-stakes test will demand, and will deserve, accurate information about how their performance did not meet the target performance (in this case, Level 4 language proficiency) and the areas in which they should focus their efforts to improve performance. In case of successful outcome of the test, detailed justifications for giving a test-taker a passing score (in this case, an overall language proficiency score of 4, 5 or 6) will need to be documented and archived. Qualified language raters can provide such information to candidates in case of failure and the necessary justifications in case of success.

6.3.13 Best practice in language proficiency assessment calls for at least two trained and calibrated raters, at least one of whom is a language specialist.

6.3.14 Computer-aided language learning creates new possibilities for both training and testing, and there have been some interesting recent developments. First, however, it is useful to distinguish the role that computers can have in the administration of language tests from the potential role computers may have in the assessment of language proficiency. The application of computers in the delivery of tests is far-reaching; computerized tests may, for example, allow for a combination of role play or simulation with easy, practical delivery to a much greater degree than previously possible.

6.3.15 Using computers to rate speech entails a distinct group of considerations. The attractions are obvious: reducing cost and time constraints. However, any test methodology must take into account every facet of the ICAO Rating Scale. It is very difficult, for instance, to establish a degree of authentic interactivity or to evaluate the quality of interactions through computerized rating so that great care needs to be taken if using computerized voice recognition technology for aviation language testing.

6.3.16 An example checklist from Doc 9835 that can be used by a Licensing Authority to audit a service provider delivering semi-direct aviation language testing services is included in the Appendix to this Part. The checklist can be for external audits in similar circumstances or can be adapted for internal audit purposes where aviation language testing is conducted by the Licensing Authority itself.

6.4 AVIATION LANGUAGE ASSESSMENT PROCEDURES

6.4.1 There are many types of aviation language assessments employed throughout the world. Some predominantly English-speaking States rely on documented evidence of English language proficiency for the majority of licence applicants and employ direct or semi-direct tests for applicants whose first language is not English. Some States require all applicants to undergo a direct language proficiency test.

6.4.2 At least one Licensing Authority of a predominantly English-speaking State requires all new applicants to have demonstrated aviation language proficiency to at least Level 4 or higher prior to licence issue, and the example procedures in Attachment B to this chapter are based on that model. As a transitional measure, pilots and controllers who had been issued with a licence before 5 March 2008 and had been satisfactorily participating in the national civil aviation system were considered to have demonstrated sufficient English language ability to adequately exercise the privileges of that licence within the domestic flight information region. All applicants and licence holders who demonstrate language proficiency to at least Level 4 have that endorsed in Item XIII of their licence.

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Attachment A to Chapter 6

EXAMPLES OF LICENCE ENDORSEMENTS FOR LANGUAGE PROFICIENCY

1. WHAT ARE THE ICAO PROVISIONS GOVERNING THE ENDORSEMENT OF LICENCES FOR LANGUAGE PROFICIENCY?

There are two provisions: ICAO Annex 1, 5.1.1.2, XIII, and Article 39 b) of the Chicago Convention.

a) Annex 1, 5.1.1.2, XIII, states, under Remarks, that the following shall appear on the licence: "special endorsements relating to limitations and endorsement for privileges, including from 5 March 2008 an endorsement on language proficiency, and other information required in pursuance to Article 39 of the Chicago Convention." Annex 1, 5.1.1.2, XIII, applies if a State has established a regulatory framework for language proficiency and conducted language assessments. Paragraph 5.1.1.2, XIII, does not specify the wording to be used for endorsement of licences related to language proficiency.

b) Article 39 b) states that "any person holding a licence who does not satisfy in full the conditions laid down in the international standard relating to the class of licence or certificate which he holds shall have endorsed on or attached to his licence a complete enumeration of the particulars in which he does not satisfy such conditions." Article 39 b) applies if a State has not yet established a regulatory framework for language proficiency, if language assessments have not yet been conducted, or if a licence holder has failed to demonstrate a language proficiency of at least ICAO Operational Level 4 (for the licences listed in Annex 1, 1.2.9.4, and, as applicable, 1.2.9.3).

2. HOW SHOULD THE ENDORSEMENT FOR LANGUAGE PROFICIENCY BE WORDED ON THE LICENCES?

As indicated above, Annex 1, 5.1.1.2, XIII, governing the endorsement of licences for language proficiency does not specify the wording to be used. The wording below should be considered as a guideline for licensing authorities. In the endorsement, a validity period should be indicated only for proficiency Levels 4 and 5 in accordance with Annex 1, 1.2.9.7.

2.1 For pilots

Endorsements under Annex 1, 5.1.1.2, XIII

2.1.1 If a pilot has been assessed to Level 4 or higher in English, the licence should indicate the following:

Meets language proficiency requirement in accordance with
1.2.9.4 of ICAO Annex 1 for English valid until [DATE].[1]

1. The words "valid until [DATE]" should be included only for proficiency Levels 4 and 5.

2.1.2 If other languages are used in radiotelephony communications and a pilot has been assessed to Level 4 or higher in those languages, the licence should indicate:

Meets language proficiency requirement
in accordance with 1.2.9.4 of ICAO Annex 1 for:

– [LANGUAGE 1] valid until [DATE][1]
– [LANGUAGE 2] valid until [DATE].[1]

Endorsement under Article 39 b) of the Chicago Convention

2.1.3 If a pilot fails to meet Level 4 or higher in English, the licence should indicate the following:

Does not meet language proficiency requirement in accordance with
1.2.9.4 of ICAO Annex 1 for radiotelephony communications in English.

2.1.4 If the pilot has not been assessed as meeting the language proficiency requirement to at least ICAO Operational Level 4 in a language used for radiotelephony communications, the licence should indicate the following text:

Does not meet language proficiency requirement
in accordance with 1.2.9.4 of ICAO Annex 1.

2.1.5 If the pilot has not been assessed because the Licensing authority has not yet conducted an assessment or assessments for the relevant language or languages used in radiotelephony communications, the above endorsement should appear on the licence and the Civil Aviation Authority should provide a reference to its implementation plan, as described in Assembly Resolution A37-10, in an attachment or a letter.

2.2 For air traffic controllers/aeronautical station operators

Air traffic controllers and aeronautical station operators may or may not be licensed. Unlicensed State employees may operate as air traffic controllers and aeronautical station operators on condition that they meet the same requirements as licensed personnel. Therefore unlicensed State employees should have in their records a similar endorsement as the licence endorsement of licensed personnel. For air traffic controllers/aeronautical station operators, an endorsement for proficiency in all languages used for radiotelephony communications including English should appear on their licence or record.

Endorsements under Annex 1, 5.1.1.2, XIII

2.2.1 If an air traffic controller/aeronautical station operator has been assessed to Level 4 or higher for English and/or other languages, the licence or record should indicate:

Meets language proficiency requirement
in accordance with 1.2.9.4 of ICAO Annex 1 for:

– English valid until [DATE] [1]
– [OTHER LANGUAGE] valid until [DATE].[1]

1. The words "valid until [DATE]" should be included only for proficiency Levels 4 and 5.

Endorsement under Article 39 b) of the Chicago Convention

2.2.2 If an air traffic controller/aeronautical station operator has failed to meet Level 4 in English, the licence or record should indicate:

Does not meet language proficiency requirement
in accordance with 1.2.9.4 of ICAO Annex 1 for English.

2.2.3 If no assessment has been carried out successfully for proficiency in any language, the licence or record should state:

Does not meet language proficiency requirement
in accordance with 1.2.9.4 of ICAO Annex 1.

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Attachment B to Chapter 6

AN EXAMPLE OF AVIATION LANGUAGE TEST PROCEDURES

1. Different assessments are offered for pilots and air traffic controllers in one of two forms:

   a) *Proficient English speakers.* Applicants who are confident that they can meet all ICAO Level 6 language criteria (native speakers or very proficient non-native speakers) may undertake an assessment "event" to demonstrate proficiency at Level 6. This assessment event involves a trained and qualified rater or rating team and includes the assessment of language used in a work-related context with reference to the ICAO Rating Scale. The rater may be an operational flight or ATC examiner, and the procedure may be carried out through operational assessments which include a language proficiency component. Because of its potential safety impact and since the outcome of a Level 6 assessment is that no further demonstration of language proficiency will be required throughout a career, it is essential to follow the appropriate established procedures to ensure that the results of the assessment are properly documented. The only outcomes of this demonstration are "Level 6" or, if there is any doubt, "not determined" (the test is not designed to conclusively discriminate between a low Level 6 and a high Level 5). A "not determined" result on the first attempt will require the candidate to undergo a more comprehensive formal language evaluation.

   b) *Speakers of English as a second language.* All other applicants, plus those who fail the Level 6 proficiency demonstration, must attempt a more comprehensive formal language evaluation that complies with all ICAO recommendations. It consists of a semi-direct assessment delivered by telephone to evaluate pronunciation, structure, vocabulary, fluency and comprehension, immediately followed by a brief direct telephone assessment with a trained interlocutor, specifically to evaluate comprehension and interactions. The outcome is the overall level achieved plus the levels achieved in each language category. Because this licensing test is a summative evaluation and is not for placement or diagnostic purposes, a FAIL grade is for all performances of Level 3 or less (i.e. the test does not differentiate between Levels 1, 2 and 3 for any language category).

2. Language proficiency assessments are made available nationwide, at scheduled times and at approved venues that meet specified examination criteria. All assessments are directly supervised by proctors designated by the Licensing Authority, and test candidates must provide acceptable evidence of identity.

3. Because the tests are set in an aviation context, all test candidates must either hold a licence or have passed theory examinations (e.g. private pilot licence (or equivalent) for pilots, and air traffic service organization or ATO theory examinations and a flight radiotelephone operator rating for air traffic controllers).

4. The Level 6 proficiency demonstrations are normally rated by one trained and certified rater while the formal language evaluations are rated by two raters, with another rater arbitrating in case of any discrepancies. The assessments are rated and results provided electronically to the candidates within five working days of the sitting.

5. Figure II-6-B-1 outlines a simplified flow chart for the assessment and endorsement processes.

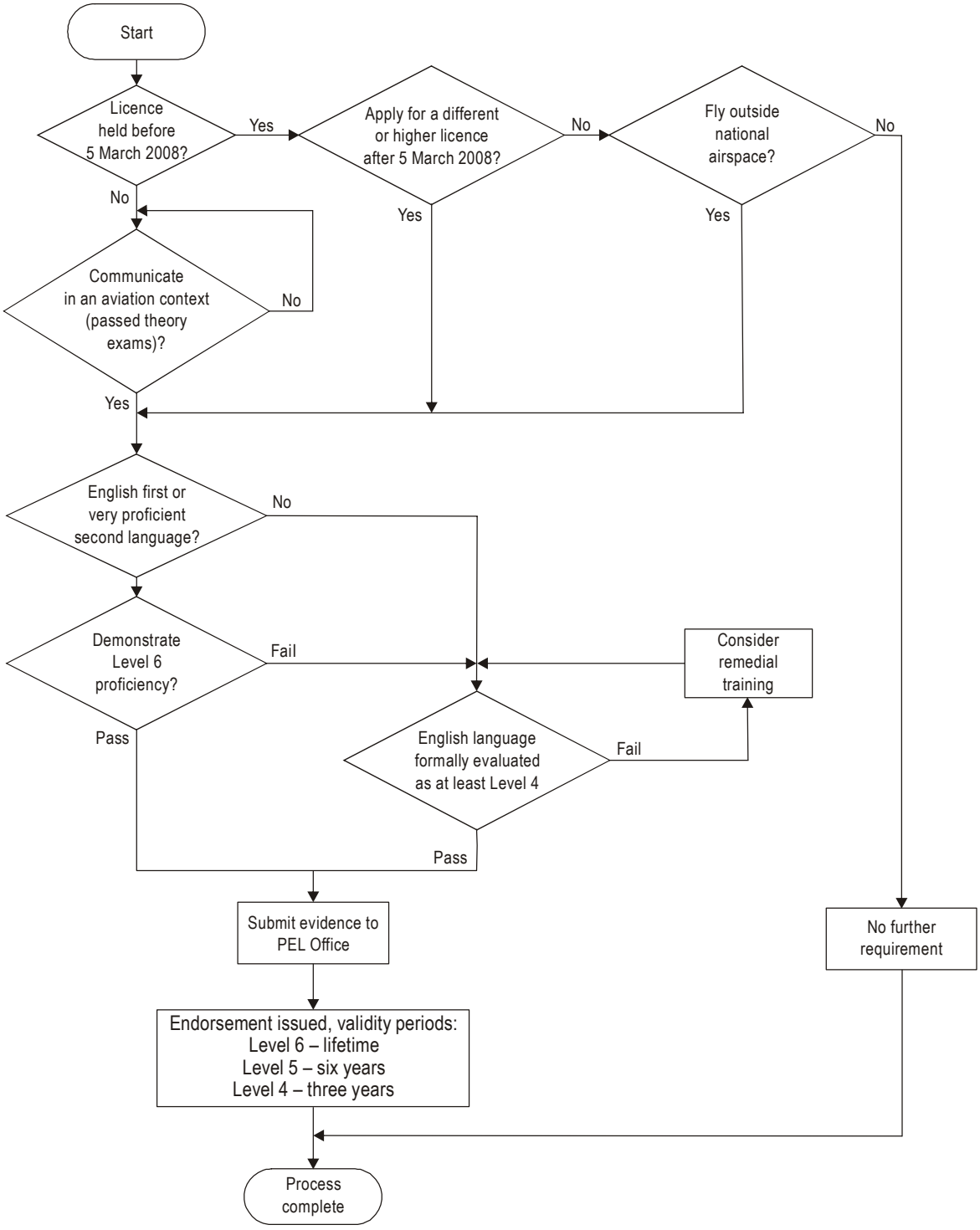

Figure II-6-B-1. Simplified flow chart for the assessment and endorsement processes

Chapter 7

TRAINING

7.1 GENERAL

7.1.1 This chapter briefly outlines the initial and ongoing approval of training programmes. It provides guidance on how to meet the training requirements of Annex 1 but does not provide specific details of ab initio training, initial training, recurrent training, transition training or training to maintain competency. For information about the flight crew member training programmes that a commercial air transport operator is required to establish, refer to Annex 6, Part I (9.2 and 9.3) and Part III (Section II, 7.3). Further information is available in the following references:

a) Guidance material to design training programmes to develop knowledge and skills in human performance can be found in Doc 9683.

b) Guidance material to design professional flight crew training programmes can be found in Doc 9376.

c) Guidance material on the different means used to assess competence can be found in the Attachment to Chapter 2 of the PANS-TRG (Doc 9868).

d) Guidance material on the requirements and oversight of approved training organizations can be found in Doc 9841.

e) Guidance material for the qualification of flight simulation training devices and their suitability for training tasks can be found in Doc 9625.

f) Provisions for training in the transport of dangerous goods are contained in Doc 9284, Part I, Chapter 4.

g) Information for pilots and flight operations personnel on flight procedure parameters and operational procedures is contained in PANS-OPS (Doc 8168), Volume I. Criteria for the construction of visual and instrument flight procedures are contained in PANS-OPS, Volume II.

Note.— Obstacle clearance criteria and procedures used in certain States may differ from PANS-OPS, and knowledge of these differences is important for safety reasons.

7.1.2 Annex 1, 1.2.8, states the benefits of approved training delivered by an ATO. The qualifications required for the issue of personnel licences can be more readily and speedily acquired by applicants who undergo closely supervised, systematic and integrated 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 Annex 1 in respect of an applicant who has satisfactorily completed a course of approved training provided by an ATO. Paragraph 3.1 of Appendix 2 to Annex 1 provides further clarification to Licensing Authorities on this issue.

7.1.3 The fundamental requirements for approval of training programmes and ATOs by the Licensing Authority are contained in Annex 1, 1.2.8 and Appendix 2. ICAO does not certify or approve any ATO or training programme. However, ICAO has adopted a training policy concerning training or related testing activities undertaken directly by ICAO or by a third party using the ICAO name or logo. An ICAO endorsement indicates that the delivered training programmes, facilities and instructors meet the criteria of quality and relevance needed to ensure that the skills and knowledge

necessary to implement SARPs are provided. The endorsement indicates that training programmes, facilities and instructors are managed in such a way as to effectively support learning for performance improvement. Endorsement is used to extend ICAO's ability to implement key activities derived from strategic objectives involving training and testing. Institutions endorsed for a training activity remain responsible for fully meeting ICAO requirements and for obtaining the approval of the training organization and of the training programmes by the relevant Licensing Authority, if required.

7.1.4 Appendix 2 to Annex 1 is supported by guidance material, most importantly Doc 9841 and 9625. Doc 9841 deals with training organizations delivering training for licensed aviation personnel. Doc 9625 comprises two volumes: Volume I — *Aeroplanes* and Volume II — *Helicopters*.

7.2 REQUIREMENT FOR QUALITY ASSURANCE (QA) AND SAFETY MANAGEMENT SYSTEMS (SMS)

7.2.1 Appendix 2 to Annex 1, paragraph 5, requires the training organization to establish a quality assurance system, acceptable to the Licensing Authority granting the approval, which ensures that training and instructional practices comply with all relevant requirements. The structure and functionality of this quality assurance system is covered in some depth in Doc 9841, with detailed guidance provided in its Appendix B.

7.2.2 Paragraph 4.1 of Appendix 2 to Annex 1 prescribes that States shall require an ATO that is exposed to safety risks (related to aircraft operations) during the provision of its services to implement an SMS acceptable to the State.[1] Safety risks in this instance apply only to those ATOs that, during the course of their training, are exposed to operational risks, which directly impact the safe operation of aircraft. This requirement is covered in detail in Doc 9841.

7.2.3 The framework for the implementation and maintenance of an SMS is contained in Appendix 4 to Annex 1.[2] The framework includes four components and twelve elements representing the minimum requirements for SMS implementation. The appendix includes a brief description of each element of the framework. The implementation of the framework shall be commensurate with the size of the organization and the complexity of the services provided.

7.2.4 Guidance on SMS is also contained in Doc 9859. Appendix B to Doc 9841 also provides detailed guidance on the quality assurance system of the ATO.

7.3 APPROVAL OF TRAINING PROGRAMMES

7.3.1 General

7.3.1.1 Approved training is defined in Annex 1 as "training conducted under special curricula and supervision approved by a Contracting State". Approved training for flight crew and air traffic controllers shall be conducted within an approved training organization. Competency-based approved training for aircraft maintenance personnel shall also be conducted within an approved training organization. Appendix 2 to Annex 1 states that a Licensing Authority may approve a training programme for a private pilot licence, commercial pilot licence, an instrument rating or an aircraft maintenance (technician/engineer/mechanic) licence that allows an alternative means of compliance with the Annex 1 experience requirements. However, the ATO must demonstrate to the satisfaction of the Licensing Authority that the training provides a level of competency at least equivalent to that provided by the Annex 1 experience requirements.

1. This SMS requirement will be transferred in November 2013 to the new Annex 19 — *Safety Management*.
2. The framework will be transferred in November 2013 to an Appendix to Annex 19 — *Safety Management.*

7.3.1.2 Guidance on the approval of training programmes can be found in Doc 9841. Course contents are not specified in detail in Annex 1; however examples of course curricula can be found in Doc 7192. For example, Doc 7192, Part B-5, Volumes 1 and 2, deal with an integrated commercial pilot course.

7.3.1.3 Annex 1 refers the reader to the PANS-TRG (Doc 9868) for further guidance material. Guidance material to design training programmes to develop knowledge and skills in human performance can be found in Doc 9683, e.g. for crew resource management (CRM) training or threat and error management (TEM) training (Part II, Chapter 2).

7.3.2 Multi-crew pilot licence

7.3.2.1 Multi-crew pilot licence (MPL) training programmes are complex and demand a significant effort from Licensing Authorities, training programme developers, ATOs and operators. The real challenge comes from the requirement that the graduate from an MPL training programme must be capable of completing the airline initial operational experience phase with a high probability of success and within the time frame traditionally expected. PANS-TRG (Doc 9868), Chapter 3, provides the elements for a competency-based MPL with which ATOs and Licensing Authorities should comply. The PANS-TRG provides guidance to States and ATOs on the measures that could be taken to facilitate safe and efficient implementation of the MPL standards and of the requisite training programme.

7.3.2.2 If the Licensing Authority decides to implement MPL, it should establish MPL licensing regulations and develop the related procedures for use by its staff. Personnel approving MPL programmes or assessing training delivery and student performance need to be appropriately trained because of several new concepts underpinning the licence. This is discussed in greater detail in Doc 9841.

7.4 APPROVED TRAINING ORGANIZATIONS

7.4.1 General

7.4.1.1 An ATO is an organization staffed, equipped and operated in a suitable manner offering flight crew, aircraft maintenance personnel, flight dispatchers or air traffic controllers practical and/or theoretical instruction for specific aviation training programmes approved by the Licensing Authority. An ATO is distinguished from a non-approved training organization by the approval process and the oversight provided by the Licensing Authority.

7.4.1.2 The Licensing Authority will issue an approval certificate to conduct the specified training courses upon successful conclusion of the initial assessment process. The issuance of an approval for a training organization and the continued validity of the approval shall depend upon the training organization being in compliance with the requirements of Appendix 2 to Annex 1 and, after 14 November 2013, the relevant requirements contained in Annex 19. The approval document shall contain at least the following:

a) the organization’s name and location;

b) the date of issue and period of validity (where appropriate);

c) the terms (conditions and/or limitations) of the organization’s approval; and

d) a list of the approved training programmes.

7.4.1.3 Some States issue a training organization approval for a set period while other States issue an open-ended approval that remains valid as long as the conditions under which the approval has been granted are fulfilled. Where an approval is given for a set period, the Licensing Authority will need to establish the renewal process and procedures.

7.4.2 Approval of foreign ATOs and their training programmes

7.4.2.1 There may be a need for a Licensing Authority to approve ATOs that are located outside the national territory. This may be driven by cost considerations or simply because the national market does not support certain types of specialized aviation training locally. However, there is no difference between the approval of training organizations based in the State and those based in another Contracting State. The principles and procedures that are described in both Annex 1 and Doc 9841 fully apply to foreign-based ATOs.

7.4.2.2 In practice, there are difficulties linked to the fact that States may not have the necessary means to ensure proper oversight of ATOs located abroad. To overcome these difficulties, many States have found it convenient to rely on the approval and oversight system of the host State to issue the approval using a process that is similar to the validation of pilot licences. This approach is efficient but requires the States that accept the approval given by another State to fully understand the conditions and the regulatory basis of the original approval. This may lead to the establishment of supplementary conditions. Guidance for this approach is contained in Doc 9841.

7.5 FLIGHT SIMULATION TRAINING DEVICES (FSTDs) AND OTHER SYNTHETIC TRAINING DEVICES

7.5.1 FSTDs are defined in Annexes 1 and 6 as "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 crew members, 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."

7.5.2 An FSTD is a very powerful training tool because training in an FSTD gives pilots and other flight crew members hands-on experience with the information taught in ground schools and allows self-paced training with the option to review/repeat lessons. The availability of advanced technology has permitted greater use of FSTDs for training, testing and checking of flight crew members. The complexity, cost and operating environment of modern aircraft also have encouraged broader use of advanced simulation. FSTDs can provide more in-depth training than can be accomplished in aircraft and provide a safe and suitable learning environment. Fidelity of modern FSTDs is sufficient to permit pilot assessment with assurance that the observed behaviour will transfer to the aeroplane. Fuel conservation and reduction in adverse environmental effects are important by-products of FSTD use.

Note.— Guidance on the qualification of FSTDs and on the training tasks for which an FSTD may be approved is contained in Doc 9625. The manual defines seven types of FSTDs that characterize the simulation features of the specific apparatus, as a function of the particular training course (e.g. training for PPL or for type rating). FSTDs can also be qualified for specific training tasks using the guidance of Doc 9625.

7.5.3 For more information on flight simulation training devices, Licensing Authorities should consult:

a) Doc 9625;

b) Annex 1;

c) Doc 9841;

d) IATA publications: *Flight Simulator Design and Performance Data Requirements*, 7th edition, 2009; and *Simulated Air and Ground Traffic Environment for Flight Training*, Rev. 2, June 2002; and

e) RAeS publications: *The Aeroplane Flight Simulator Evaluation Handbook*, Volume I and Volume II.

7.5.4 Other synthetic training devices are used in the training of air traffic controllers and aircraft maintenance personnel and have proven to be effective training tools. The qualification and approval of such devices for the related approved training programmes need to be conducted by the Licensing Authority.

7.5.5 There may be a need for a Licensing Authority to qualify FSTDs that are located outside the national territory. This may be driven by the fact that the amount of training conducted on a particular FSTD does not justify the acquisition of an FSTD. However, there is no difference between the qualification of FSTDs based in the State and those based in another Contracting State. Because an FSTD needs periodic inspections to maintain its qualification, this results in significant expenditure of resources for the Licensing Authority, the FSTD operators and the FSTD users.

7.5.6 In practice, there are difficulties linked to the fact that States may not have the necessary means and technical expertise to ensure proper qualification of FSTDs located abroad. To overcome these difficulties, many States have found it convenient to rely on the qualification system of another Contracting State to issue an FSTD qualification using a process that is similar to the validation of pilot licences. This approach is efficient but requires States that accept the qualification given by another State to fully understand the conditions and the regulatory basis of the original qualification. This may lead to the establishment of supplementary conditions. In any case, the Licensing Authority needs to approve the FSTD use for a national approved training programme but may also rely on the approval granted by another Contracting State for a training programme to be conducted on a particular FSTD. The Licensing Authority retains responsibility for the qualification of the FSTD and for its approval to conduct an approved training in that FSTD, even if this is based on the qualification and approval of another Contracting State. Therefore, the State needs to ensure that the other Contracting State grants that qualification and approval in accordance with ICAO requirements. Guidance on the qualification and approval of foreign-based FSTDs is contained in Doc 9841.

7.6 TRAINING OVERSIGHT

7.6.1 Appendix 2 to Annex 1 requires that Contracting States shall maintain an effective surveillance programme of the ATO to ensure continuing compliance with the approval requirements.

7.6.2 The surveillance and inspection programme should provide a comprehensive and conclusive assessment of the maintenance of competency of licence/rating/certificate/approval holders. Moreover, the associated inspection reports should indicate whether the inspection and surveillance system and the procedures employed by the Civil Aviation Authority are effective in determining the licence/rating/certificate/approval holder's competence, record of compliance and overall capability.

7.6.3 A framework for the implementation and maintenance of a State safety programme is contained in Attachment C to Annex 1,[3] which prescribes four components of the State safety programme: State safety policy and objectives; State safety risk management; State safety assurance; and State safety promotion. The four components of the State safety programme include 11 elements, which are briefly described in Attachment C to Annex 1.

3. The framework will be transferred in November 2013 to an Attachment to the new Annex 19 — *Safety Management.*

7.6.4 The State safety assurance component prescribes the safety oversight element of the framework as follows:

> "The State has established mechanisms to ensure effective monitoring of the eight critical elements of the safety oversight function. The State has also established mechanisms to ensure that the identification of hazards and the management of safety risks by service providers follow established regulatory controls (requirements, specific operating regulations and implementation policies). These mechanisms include inspections, audits and surveys to ensure that regulatory safety risk controls are appropriately integrated into the service provider's SMS, that they are being practised as designed, and that the regulatory controls have the intended effect on safety risks."

7.6.5 This effectively means that surveillance is the responsibility of the Licensing Authority. This oversight ensures that the ATO is operating within the terms of its approval. It therefore must include a review of the ATO's quality assurance and, when applicable, safety management systems, as well as its administrative, technical and training records, and operational activities.

Chapter 8

MEDICAL PROCEDURES

8.1 ORGANIZATION

8.1.1 The Chief Medical Officer, or CMO, is the central figure in the civil aviation medical system (see 2.3.4 of Part I of this manual). Sometimes the final legal responsibility for licensing decisions, including medical decisions, lies with the Director of Flight Safety,[1] or equivalent. In such cases, where the Director of Flight Safety has the responsibility, the Director will rely on the technical judgement of the CMO who may act on behalf of the Director. Considerations or decisions on medical matters are always made by medical officers.

Note.— In States with limited aviation activities, the Medical Office may be small. Guidance on arrangements for a small Medical Office is contained in 8.8.

8.1.2 The CMO is responsible for managing the Medical Office, establishing procedures and issuing guidelines. If the CMO is not the only medical officer in the CAA, other officers may be appointed as medical assessor(s). A medical assessor evaluates medical reports submitted to the Licensing Authority by medical examiners.

8.1.3 The CMO also makes final decisions on the medical fitness of applicants, although the authority for routine decisions is usually delegated to medical examiners. In order to reach a sound decision, the CMO may take advice from appropriate medical experts or, in some cases, from flight examiners, e.g. in cases of physical deficiency.

8.1.4 As outlined in Chapter 5 of Part I of this manual, medical examinations are commonly carried out by medical practitioners from outside the Licensing Authority. In order to maintain the integrity of the licensing system, such examiners must be appropriately qualified, experienced and trained. They are designated and subsequently submitted to surveillance (normally through audits and periodic evaluation of competence) by the Authority. If needed, suitable medical examiners residing outside the State may be designated and supervised in the same way as local examiners.

8.1.5 Medical examiners are normally designated[2] or otherwise approved by the CMO for a finite period (e.g. three years), after which the designation must be renewed.

8.1.6 Relationships between key participants in the medical assessment system are shown in Figure II-8-1 .

8.2 QUALIFICATION CRITERIA FOR MEDICAL EXAMINERS

8.2.1 To be eligible for designation as a medical examiner, a licensed medical practitioner shall have received aviation medicine training acceptable to the CMO. To be eligible to conduct medical examinations for Class 2 medical assessments, prospective medical examiners should have completed at least basic aviation medicine training while those wishing to conduct medical examinations for Class 1 or Class 3 medical assessments should have undergone

1. See Part I, paragraph 2.3.
2 The ICAO term “designated” is used throughout this chapter to describe all such mechanisms, although several States use the term “authorized”.

more advanced aviation medicine training. Previous experience as a Class 2 medical examiner, with an evaluation of the related activities, may be taken into account when considering the designation of a medical examiner for Class 1 or Class 3 assessments. The medical examiner shall receive refresher training at regular intervals. "Acceptable training" should be described by the CMO, and medical examiners should have their training reviewed by the Licensing Authority from time to time (e.g. every three years) to ensure compliance.

8.2.2 In addition to completing specified training, a prospective medical examiner shall have demonstrated adequate relevant aviation medical competencies.

8.2.3 A medical examiner shall have practical knowledge of and experience with the conditions in which the holders of licences and ratings carry out their duties. Examples of practical knowledge and experience are flight experience, simulator experience, on-site observation or any other hands-on experience deemed by the Licensing Authority to meet this requirement. A medical examiner should thus be familiar with the operating environments in which applicants for medical assessments may exercise the privileges of their licences.

8.2.4 Medical examiners should have access to clinical, administrative and communication facilities adequate for the purpose of carrying out medical examinations to the required standards.

8.2.5 Guidance on training of medical examiners can be found in Part V of Doc 8984.[3] Chapter 1 provides guidance on aeromedical training for medical examiners, including competency-based training and a competency framework. The Appendix to Chapter 1 lists the minimum foundation knowledge required for a medical examiner, which can be acquired as an integral part of a competency-based training programme for medical examiners or through a separate training programme acceptable to the Licensing Authority.

8.2.6 Once a medical practitioner has been designated as a medical examiner, the CMO should issue, in writing, a designation to that effect. The designation should authorize the medical examiner to conduct medical examinations for the purpose of issuing (including renewing or reissuing) Class 1, 2 or 3 medical assessments for the Licensing Authority. The medical examiner may also be empowered to directly issue the assessments on behalf of the CMO, depending on State-specific legislation.

8.2.7 It is incumbent on the medical examiner to maintain the required level of competence. Designation criteria often include the requirement to conduct a minimum number of aviation medical examinations per year and to undergo continuing professional education. Refresher training is a requirement of Annex 1.

8.2.8 In addition, the competence of a medical examiner should be evaluated periodically by a medical assessor. For this reason, a medical examiner shall be required to submit sufficient medical information to the Licensing Authority for audit purposes. Procedures should be in place to ensure that feedback from the medical assessor is provided to individual medical examiners regarding the results of audits of their reports.

8.3 MEDICAL ASSESSMENT PROCESS

8.3.1 Because medical examiners not employed by the CAA usually conduct most medical examinations and issue most medical assessments, the Licensing Authority's most important function in the assessment process is to ensure that medical examiners comply with all requirements. This requires clear guidance reinforced by initial and periodic training and surveillance (through evaluation of competence and auditing) by the medical assessor(s) and Medical Office administrative staff.

3. This document is available for download at http://www.icao.int/publications/Pages/doc-series.aspx.

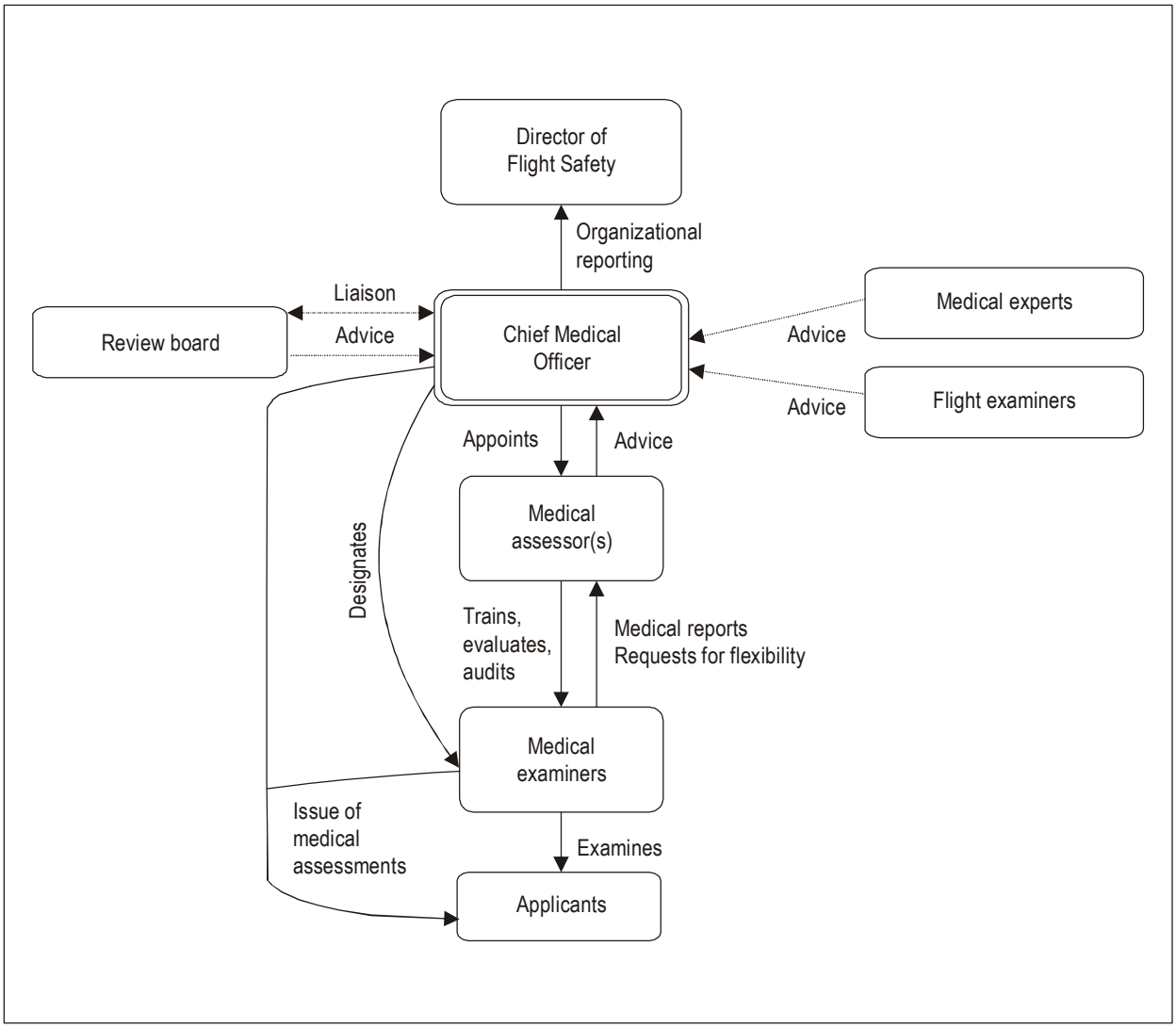

Figure II-8-1. Relationships between key participants in the medical assessment system

8.3.2 The CMO must issue guidance and instructions to medical examiners, preferably in the form of a CAA medical manual, regarding material relevant to the consideration of applications for medical assessments. The manual should include general directions and information or advisory material concerning clinical, administrative and legislative matters. Doc 8984 provides good resource material and can be used as the basis for such a manual.

8.3.3 An applicant for a medical assessment must furnish adequate proof of his or her identity as a prerequisite for an assessment. The documentation required to verify identity will vary from State to State and is particularly important when the medical examiner does not personally know the applicant. In case of a renewal, the current licence and last issued medical assessment should be reviewed by the medical examiner at each examination.

8.3.4 The actual assessment commences with the identified applicant providing the medical examiner with a personally certified statement of medical facts concerning personal, familial and hereditary history. A reliable assessment requires that statement to be complete and accurate, and the applicant should be advised that any false or misleading information in the statement could have far-reaching consequences.

8.3.5 The statement of medical facts is normally included in the application form for a medical assessment. An example medical assessment application form and instructions for filling out the application may be found in Attachment B to Chapter 2, Part I[4] of Doc 8984. Note the acknowledgement that must be signed by the applicant at paragraph 32.

8.3.6 It is good practice to encourage licence holders to remain healthy and to avoid preventable disease or injuries by taking care of themselves and making appropriate lifestyle choices. In the longer term this is likely to have beneficial effects on flight safety as well as on the individual's health. Licensing Authorities should therefore consider, for Class 1 applicants less than 40 years old, allowing medical examiners to omit certain routine examination items related to the assessment of physical fitness and instead increase the emphasis on health education and prevention of ill health.

8.3.7 After reviewing the medical history and completing the examination, the medical examiner will either:

a) issue a medical assessment if the applicant is found fit in all respects;

b) deny the application if the applicant is found unfit; or

c) defer the action to the Licensing Authority if the applicant does not meet all the medical criteria to be assessed as fit, but his or her condition is not considered by the medical examiner to be detrimental to flight safety.

8.3.8 Whatever the outcome, a medical report should also be produced and sent to the CAA for evaluation by the medical assessor and for recording and auditing purposes. The reports are normally required to be evaluated by a medical assessor whenever an aeromedical decision needs to be made that affects the medical fitness of the applicant; in addition, a sample of other reports should be evaluated by the medical assessor(s) for auditing purposes. An example medical report and related instructions for use may be found in Attachment B to Chapter 2, Part I, of Doc 8984.

8.3.9 If an application for a medical assessment is denied, the applicant may:

a) accept the decision; or

b) appeal the decision.

8.3.10 An appeal request should be addressed to the CMO, with suitable supporting data. The CMO will then review the case, often convening a medical review board (consisting of relevant specialists) to provide expert advice. The responsibility for the final aeromedical decision rests with the CMO, who should have autonomy in making this decision.

8.3.11 An applicant who does not meet all the medical criteria to be assessed as fit but whose condition is not considered by the CMO to be detrimental to flight safety may still be issued with a medical assessment after due consideration by the Licensing Authority (see 8.5). The first step may include a thorough examination by a specialist, including relevant investigations and an evaluation of whether or not the condition is progressive, to what extent function is impaired and whether there is any risk of further deterioration or incapacitation.

4. Available for download at http://www.icao.int/publications/Pages/doc-series.aspx.

8.3.12 In the case of relatively static physical conditions (e.g. poor function or absence of a limb, or deficiency of visual acuity or hearing), if the medical examiner considers that the applicant's condition is not necessarily detrimental to flight safety, the medical examiner may recommend additional testing to assess the applicant's performance during a carefully designed flight test with a flight examiner designated for that kind of specific flight test, in order to verify that the applicant is capable of safely performing duties under normal, non-normal and adverse conditions expected to be encountered in operations.

8.3.13 Finally, the Licensing Authority may, for medical reasons justified and notified to the applicant, limit or deny a medical assessment. Also if it is established that an applicant or an assessment holder has not met or no longer meets the medical requirements, the Authority can suspend or revoke a medical certificate that has been issued. Suitable procedures should be implemented to notify the person of any such decision by the Licensing Authority. The opportunity for a person to appeal a medical decision may or may not be included in the process, as decided by the Contracting State. However, a Licensing Authority should ensure that a procedure is in place to enable new information to be considered, which may have a bearing on the original decision.

8.3.14 An example letter advising the suspension of a medical assessment may be found on the New Zealand CAA website at: www.caa.govt.nz/Forms/24067-401.pdf while an example letter advising cancellation of the suspension of a medical assessment may be found at www.caa.govt.nz/Forms/24067-404.pdf. Less formal notification may be appropriate for short-term periods of incapacity.

8.3.15 A simplified diagrammatic representation of the medical assessment processes is shown in Figure II-8-2.

8.4 VALIDITY PERIODS OF MEDICAL ASSESSMENTS

8.4.1 The predictive power of even a very thorough and comprehensive medical examination is limited. The validity periods for all classes of medical assessment are consequently reduced for older licence holders, who have increased medical risks.

8.4.2 The validity period of a medical assessment always commences from the day on which the regulatory medical examination was conducted. If there is a postponement in the issue of the medical assessment (e.g. awaiting laboratory test results or specialist evaluation) the validity period still commences from the day on which the regulatory medical examination was conducted. The validity period is based on the age at which the examination is undertaken. This is important if an examination is undertaken near the age at which the validity period changes. For example, an examination for a Class 2 medical assessment undertaken when the applicant is 39 years of age is valid for five years, whereas if the applicant is 40 years old on the day of examination, it is valid for just two years.

8.4.3 If a licence holder undergoes a medical examination to renew his or her medical assessment no more than 45 days before it expires, the validity period of renewed medical assessment may be extended by a corresponding amount. This allows the medical assessments to expire on a constant date of the year. It also allows licence holders and medical examiners a sufficient period of time to arrange an examination without disrupting work schedules.

8.4.4 Subject to an extension of up to 45 days as described above, the maximum periods of validity of the medical assessment for various categories of licence holders are provided in 8.4.5 to 8.4.7.

8.4.5 A Class 1 medical assessment is valid for a period of:

a) 12 months; or

b) 6 months if:

1) the applicant is engaged in single-crew commercial air transport operations carrying passengers and, on the date of the medical examination, is more than 40 years old; or

2) the applicant is engaged in commercial air transport operations and, on the date of the medical examination, is more than 60 years old.

8.4.6 A Class 2 medical assessment is valid for a period of:

a) 60 months; or

b) 24 months if, on the date of the medical examination, the applicant is more than 40 years old and less than 50 years old; or

c) 12 months if, on the date of the medical examination, the applicant is 50 years of age or older.[5]

8.4.7 A Class 3 medical assessment is valid for a period of:

a) 48 months; or

b) 24 months if, on the date of the medical examination, the applicant is more than 40 years old and less than 50 years old; or

c) 12 months if, on the date of the medical examination, the applicant is 50 years of age or older.[5]

8.4.8 The period of validity of a medical assessment may be reduced when clinically indicated. For example, a medical condition, although compatible with licensing, may be of a nature where medical check-ups are required at a frequency greater than normal. In such cases, the period of validity of the medical assessment may be reduced so as to ensure adequate monitoring of the medical condition.

8.4.9 A Licensing Authority has the discretion to defer a medical examination, on an exceptional basis, if a flight crew member is operating in an area distant from designated medical examination facilities. The deferral should not exceed:

a) in the case of a flight crew member of an aircraft engaged in non-commercial operations, a single period of six months;

b) in the case of a flight crew member of an aircraft engaged in commercial operations, two consecutive periods, each of three months, provided that in both cases a favourable medical report is provided to the Licensing Authority after examination by a designated medical examiner of the area concerned or, if not available, a physician in that area; or

c) in the case of a private pilot, a single period not exceeding 24 months provided that a medical examination is carried out by a designated medical examiner of the Contracting State in which the applicant is temporarily located, and a report is sent to the Licensing Authority.

8.4.10 Experience has shown that deferral of a medical examination is only rarely needed, and every effort should be made to provide access to a medical examiner to enable the normal period of validity to be followed.

5. This is an Annex 1 Recommended Practice (1.2.5.2.5).

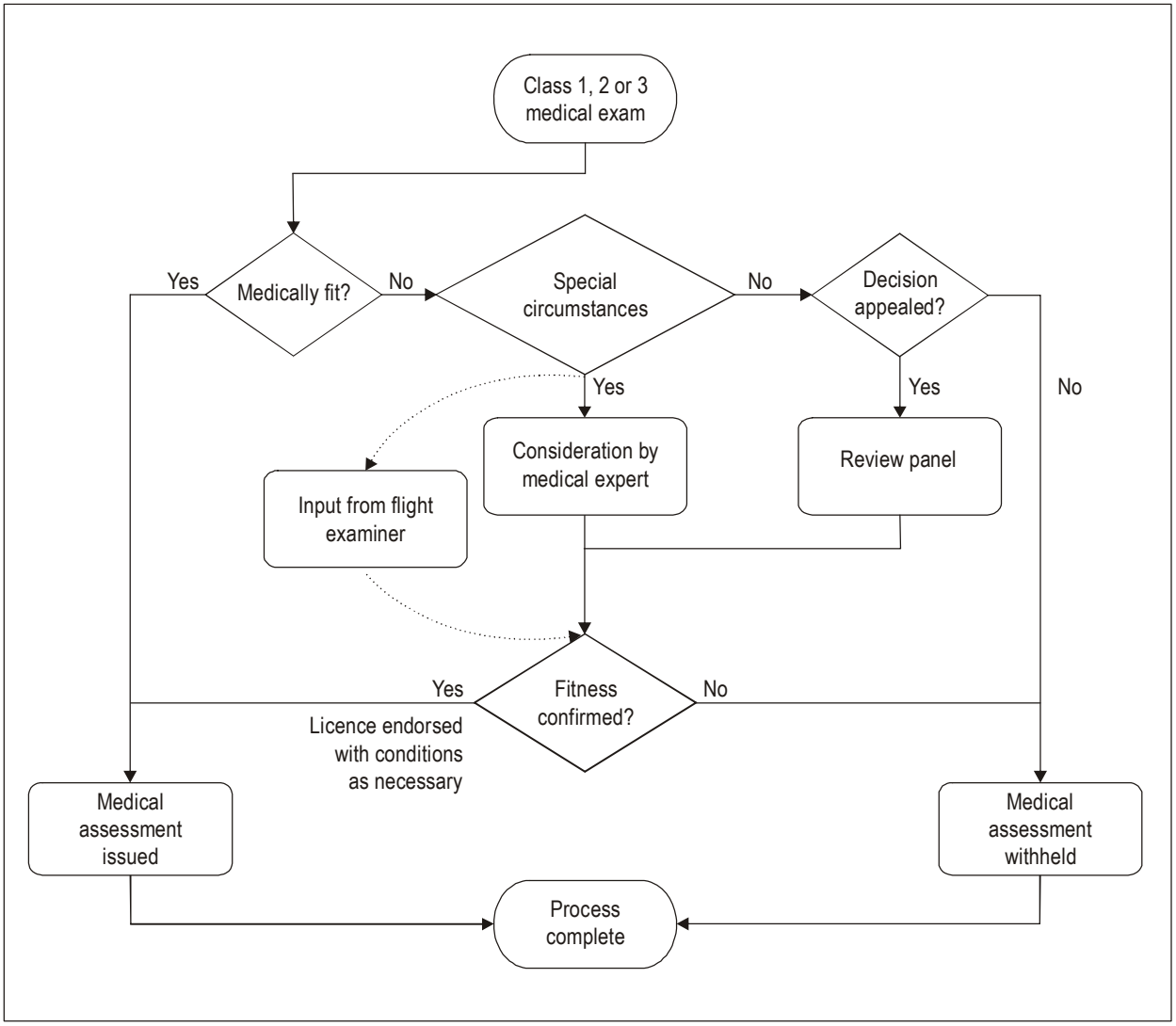

Figure II-8-2. A simplified diagrammatic representation of the medical assessment processes

8.5 FLEXIBILITY

8.5.1 The range of variation between individuals is such that if medical standards were laid down rigidly they would inevitably exclude a number of applicants who, though not meeting the standards in all respects, might nevertheless be considered capable of performing duties safely in the aviation environment. Therefore, Annex 1, 1.2.4.9, allows States to exercise a degree of flexibility in the application of medical standards. This paragraph may be applied in consideration of an individual case and must not lead to a situation where its use becomes the rule rather than the exception.

8.5.2 A medical assessor usually makes decisions under the flexibility provision. Decisions to exercise flexibility should always be backed by an accredited medical conclusion,[6] which implies that they have been taken following close examination and assessment of all the medical facts and their relationship to occupational demands and personal performance.

8.5.3 The estimation of risk imposed by the individual upon flight safety is a difficult task and may require consideration by both medical and operational experts. Guidance on such a decision-making process is contained in Part I, Chapter 2, of Doc 8984. Examples and guidance on the use of flexibility for various physical or mental conditions are contained in Part III[7] of that document.

8.5.4 Where a medical condition exists, the extent to which flight safety is affected is the vital factor, rather than the extent to which failure to attain the medical requirements is capable of being compensated. In some cases the question of compensation for a deficiency will be irrelevant (e.g. where the risk is one of sudden incapacitation rather than inability to physically carry out a required task due to a static physical disability). In other cases, the ability to compensate (e.g. for an orthopaedic dysfunction) may be an important factor in the overall assessment of the effect on flight safety. Previously acquired skills may similarly be irrelevant or important to the overall assessment of the safety risk.

8.5.5 In summary, if the medical standards prescribed for a particular licence are not met, the medical assessment must not be issued or renewed unless all of the following conditions, as indicated in Annex 1, 1.2.4.9, are fulfilled:

a) an 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.

8.6 LICENCE HOLDER RESPONSIBILITIES

8.6.1 Annex 1, 1.2.6.1, states: "Holders of licences provided for in this Annex 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."

8.6.2 CAA publications and public material should disseminate guidance on licence holder responsibilities as widely and as frequently as possible.

8.6.3 Licence holders should be given clear guidelines on medical considerations that may be relevant to flight safety. Because some conditions, or treatments, or prescribed or non-prescribed medications may have significantly greater consequences in an aviation environment than in ordinary circumstances, common sense cannot be relied upon.

---

6. An "accredited medical conclusion" is a basic concept defined in Annex 1 as "the conclusion reached by one or more medical experts acceptable to the Licensing Authority for the purposes of the case concerned, in consultation with flight operations or other experts as necessary".
7. Both Parts are available for download at http://www.icao.int/publications/Pages/doc-series.aspx.

Therefore, if a licence holder has any concerns that his or her condition could potentially affect flight safety, he or she should consult, or seek clarification from, a medical examiner or the Licensing Authority before exercising licence privileges. Such matters can be discussed and investigated at routine medical examinations, but the individual licence holder bears responsibility for ensuring that he or she is fully fit when exercising licence privileges, should a medical condition first become known in between medical examinations (which is the usual case).

8.6.4 A person who holds a current medical assessment must not exercise licence privileges if he or she is aware of, or has reasonable grounds to suspect, any change in his or her medical condition or the existence of any previously undetected medical condition that may interfere with the safe exercise of the privileges to which his or her medical assessment relates.

8.6.5 This obligation applies if there is a decrease in medical fitness attributable to the effects of intercurrent disease, injury, alcohol or other psychoactive substances, medication or fatigue, which might render the holder of a licence or rating incapable of meeting the medical requirements of his or her licence or rating.

8.6.6 Licence holders must not exercise the privileges of their licences and ratings while under the influence of any psychoactive substance which might render them unable to safely and properly exercise these privileges. Similarly, non-licensed crew and other persons whose output is safety-sensitive should not operate while under the influence of any psychoactive substance which might render them unable to safely perform their functions and duties. Aviation organizations should have procedures in place to minimize the likelihood of such an occurrence. Guidance on the prevention of problematic use of substances is contained in Doc 9654.

8.6.7 While pregnancy is a natural event, it can result in physiological changes or medical complications that have the potential to affect aviation safety. Accordingly, pregnancy, including its consequences, is considered a medical condition, and a licence holder who becomes pregnant must advise the Licensing Authority. Normally, a licence holder with a low-risk, uncomplicated pregnancy, after obstetrical evaluation and under continued medical supervision, may be assessed as fit between the end of the 12th week until the end of the 26th week of gestation.

8.7 ADMINISTRATIVE AND RECORDING PROCEDURES

Medical Office staff procedures should be promulgated following principles similar to the administrative and recording procedures for a PEL Office outlined in the Attachment to Chapter 4 of this Part. All Medical Office staff members should be aware of the importance of maintaining confidentiality of medical information, and a specific confidentiality agreement should form part of their employment conditions. Medical records must be stored in the Medical Office and be inaccessible to any person outside the Medical Office staff. However, limited, medically related information may need to be released to operational staff in order to enable an operational assessment to be made. The medical assessor shall determine to what extent pertinent medical information is presented to relevant officials of the Licensing Authority when justified by operational considerations. A confidentiality agreement is usually inserted at the foot of the medical declaration that is signed by the applicant during routine medical examinations, to cover such situations.

8.8 SMALL MEDICAL OFFICES

8.8.1 The above guidelines refer primarily to Licensing Authorities that have a Medical Office incorporated into, or close to, the premises of the Licensing Authority and which designate medical examiners to undertake routine examinations elsewhere. However, not all Authorities work to such a model, and some may have only a small number of physicians trained in aviation medicine, or sometimes only one, due to having limited aviation activities in the State. In such cases the above model does not work well.

8.8.2 In the case of a small Medical Office, the preceding guidelines can be adapted, but there are two basic principles that should be followed. These are:

a) unless delegated to another State, the SOLI retains responsibility for ensuring that the applicant is medically fit and that he or she does not exercise licence privileges without a valid medical assessment; and

b) all physicians with responsibility for the issuance of medical assessments should have their work audited.

8.8.3 The above principles lead to some additional considerations. A medical assessment does not have to be issued by a medical examiner designated by the SOLI. The medical assessment may be issued by a medical examiner designated by a State other than the SOLI, with two options:

a) *Medical examiner designated by another State using the SOLI procedures*. The medical examiner may issue a medical assessment/certificate on behalf of the SOLI in the same way as a medical examiner designated by the SOLI, using the same paperwork/forms. In this case the medical assessor of the SOLI must audit the medical examination forms, and the SOLI retains full responsibility for the decision of aeromedical fitness resulting in a medical assessment. The SOLI must ensure that the medical examiner has received adequate instructions (and training, if necessary) from the SOLI in the medical assessment procedures and paperwork used by the SOLI. In addition, the SOLI must assure itself that the medical examiner issuing the medical assessment is properly designated by the State of designation, which maintains oversight of the medical examiner's training and competence in aviation medicine, and that procedures are in place for the SOLI to be notified if this should change. A variation of this process occurs when the assessment is not issued directly to the applicant by the medical examiner, but the medical examination forms are sent to the SOLI for assessment issue.

b) *Validation of a foreign medical assessment*. The medical examiner may issue a medical assessment in accordance with the requirements of the Medical Office that has designated him or her, which is different from the Medical Office of the SOLI. Such an arrangement must be approved by the SOLI after ensuring through available means (USOAP audit results, State audit, etc.) that the Medical Office designating the examiner has assessment requirements compliant with Annex 1. In this situation the State designating the medical examiner takes responsibility for ensuring that the licence holder is fit to exercise licence privileges. A copy of the medical assessment issued should be sent to the SOLI. Since this system will result in a medical assessment issued by a State which is not the SOLI, the SOLI must issue a letter of validation (or equivalent) to the applicant authorizing the applicant to utilize his or her licence with a (valid) medical assessment issued by the other State. This can be compared to a validation or conversion of the medical assessment issued by another State.

Since the SOLI might not receive the medical examination forms in this situation, the process is open to potential difficulties in tracking the medical history of the applicant, who, having been refused an assessment by one examiner on the basis of his or her medical history, could seek another examiner's examination (possibly in a third State) and withhold his or her history in order to obtain an assessment. For this reason it is recommended, if possible, that copies of the medical examination forms are forwarded to the SOLI for checking and recording by the SOLI (especially when a medical examiner has found an applicant to be medically unfit) together with a copy of any assessment issued. It is also recommended that only a small number of medical examiners outside the SOLI are approved to undertake medical examinations on behalf of the SOLI.

8.8.4 Where there are only a small number of medical examiners in a State, this may cause difficulties in ensuring an adequate audit of performance. Where there are at least two medical examiners, it may be possible to devise an audit system whereby a medical examiner checks the work of the other medical examiner(s) in a defined audit

process (e.g. by random sampling) and is audited by the other or another medical examiner. Where there is only one medical examiner, who is also the CMO and medical assessor, it is recommended that an arrangement be developed whereby a CMO from another State is invited on a planned basis to audit the medical procedures and medical decisions. This is particularly important in the case of application of the flexibility Standard (Annex 1, 1.2.4.9). It may be useful for this principle to be developed for a number of neighbouring States with limited aviation activities, which could provide support/audit to each other when each State by itself cannot justify increasing the size of its Medical Office. It can also be a responsibility delegated to an RSOO to organize for such audits to take place.

8.9 SAFETY MANAGEMENT OF THE AEROMEDICAL RISK

8.9.1 Safety management principles were recently introduced into Annex 1 to apply, among others, to the medical assessment process, with a new Recommended Practice stating:

> 1.2.4.2 **Recommendation.—** *From 18 November 2010 States should apply, as part of their State safety programme, basic safety management principles to the medical assessment process of licence holders, that as a minimum include:*
>
> *a) routine analysis of in-flight incapacitation events and medical findings during medical assessments to identify areas of increased medical risk; and*
>
> *b) continuous re-evaluation of the medical assessment process to concentrate on identified areas of increased medical risk.*

8.9.2 To adequately manage the aeronautical risk, the Medical Office needs to record and analyse in-flight incapacitation events and medical assessment findings that may lead to incapacitation. In addition, in States where such data are limited, the analysis should take into account related data from other States' Medical Offices, with which the Medical Office exchanges information, to identify trends and operational incapacitation risks.

8.9.3 Based on the data analysis and using guidance on the incapacitation risk in Part I — *Licensing Practices* of Doc 8984, available at http://www.icao.int/publications/Pages/doc-series.aspx, the medical assessment process can be re-evaluated "to concentrate on identified areas of increased medical risk".

Chapter 9

COMPETENCY-BASED TRAINING AND ASSESSMENT

9.1 GENERAL

9.1.1 Delivery and assessment of aviation training is evolving towards competency-based training and assessment with emphasis on standards of performance and their measurement, ideally within a training programme specifically designed to meet identified job/task performance standards. The first step of this evolution has been the introduction into Annex 1 of the multi-crew pilot licence (MPL), which uses competency-based training to prepare aspiring co-pilots to operate effectively in a modern multi-crew commercial air transport flight deck. A second step has been the introduction of competency-based training for the private pilot, commercial pilot and aircraft maintenance personnel licences as an alternative means of compliance with the experience requirements of Annex 1. Competency-based training for the MPL and aircraft maintenance personnel is supported by provisions in the PANS-TRG (Doc 9868), and those provisions will be gradually expanded to include other categories of aviation personnel.

9.1.2 Traditional training methods are based on accumulating prescribed hours of experience and mastering more advanced manoeuvres as training progresses. Emphasis is placed on developing independence of thought and individual skill. The acquired knowledge and skill levels are then confirmed during discrete progress and final tests. In this instance, student performance levels while undergoing training are measured against tolerances imposed by the Licensing Authority. The risk in this case is that the training syllabus may simply focus on preparing the applicant to meet the licence, rating or endorsement "testing criteria", and on little else. For example, while this approach may be appropriate for addressing the needs of single-pilot operations flying less complex aeroplanes, the limited knowledge and skills learned can impede a smooth transfer to multi-crew commercial air transport operations. Consequently, many airlines are forced to provide new hires with supplemental training to bridge the gaps in required competencies.

9.1.3 On the other hand, competency-based training programmes incorporate continuous assessment of achievement against set performance derived through detailed job/task analyses, broken down into competency units consisting of a number of competency elements. Trainees do not progress until each element within each unit is satisfactorily achieved. Particular emphasis is placed on dealing with human factors, and on the effective application of sound threat and error management and crew resource management principles.

Note.— Definitions of the terms associated with competency-based training are listed in Chapter 1 of PANS-TRG (Doc 9868)*.*

9.2 COMPETENCY-BASED TRAINING AND ASSESSMENT

9.2.1 Initially, introduction of competency-based training will rely upon professional training programme designers who have the expertise to properly develop the training syllabi and supporting courseware utilizing instructional system design methodologies. ATOs that wish to provide such training will need to have a well-defined and efficient organizational structure with specially trained staff to effectively deliver the training and manage the continuous assessment and "absolute grading" processes.

9.2.2 Chapter 2 of the PANS-TRG (Doc 9868) provides general provisions for competency-based training and assessment. Guidance for ATOs wishing to provide competency-based training is detailed in Doc 9841.

9.2.3 Licensing Authorities should develop general requirements concerning the management of examiners and provide guidance on the:

a) selection of examiners and the description of competency-based assessment training;

b) performance criteria to be considered by the examiner when assessing each competency; and

c) tolerances applicable to all competency-based tests.

9.2.4 Detailed competencies for instructors, examiners, inspectors and course developers are contained in the Attachment to Chapter 5[1] of the PANS-TRG (Doc 9868). Inspectors who are responsible for managing the oversight of competency-based training programmes must have the various competencies to carry out the following:

a) Assess an ATO's application to conduct a competency-based training programme:

1) validate the ATO background data;

2) review the application;

3) evaluate the SMS, where required, and quality assurance system implementation; and

4) document the findings.

b) Evaluate the competency-based training programme:

1) assess the training needs analysis;

2) assess the curriculum design;

3) assess the courseware (ground, synthetic training device, FSTD and flight, as applicable);

4) assess the evaluation procedures;

5) confirm the required qualifications and competencies of instructors and designated/delegated examiners; and

6) document the evaluation findings.

c) Inspect the competency-based training programme:

1) inspect the ground school facilities;

2) inspect the FSTD and synthetic training device facilities, as applicable;

3) inspect the flight or practical training facilities;

4) inspect the record-keeping system;

5) evaluate the conduct of training; and

1. This chapter number is valid for Amendment 2 to Doc 9868.

6) document the inspection findings.

d) Conduct surveillance:

1) carry out a risk assessment;

2) establish an initial surveillance plan;

3) conduct an operational review of the training programme;

4) instigate follow-up rectification/enforcement action;

5) conduct a review of the functionality and effectiveness of the ATO's quality assurance (QA) practices while training is under way;

Note.— Doc 9841 provides additional details on QA.

6) document the surveillance findings; and

7) establish an ongoing surveillance plan.

e) Conduct trend analysis of approval/surveillance activity.[2]

2. Depending on the size of the Civil Aviation Authority, individual inspectors may or may not be responsible for this competency unit.

Chapter 10

SURVEILLANCE OF LICENSED AVIATION PERSONNEL

10.1 GENERAL

10.1.1 Annex 1, 1.2.5.1, states that: “A Contracting State, having issued a licence, shall ensure that the privileges granted by that licence, or by related ratings, are not exercised unless the holder maintains competency and meets the requirements for recent experience established by that State.” That requires each Contracting State to define in its regulations the related requirements and to have a system for continuing surveillance and supervision of licence holders to ensure continued safe operations.

10.1.2 In many States, responsibility for continuing surveillance is given to CAA flight operations inspectors or PEL inspectors. Areas of interest for the surveillance activities include:

a) the degree of compliance with regulations and safe operating practices;

b) the competency level in terms of specified minimum knowledge and skill standards; and

c) an individual’s continued suitability to hold an aviation document (“fit and proper person” criteria).

10.1.3 Where deficiencies or incidents are observed, inspectors should determine if they are isolated instances or indicative of systemic failure. Sometimes, apparently isolated events may reveal a trend over an extended period, so it is important to properly document all observations and actions for subsequent analysis.

10.2 RISK ASSESSMENT PROCESS

10.2.1 In order to construct a surveillance plan, a risk assessment should be undertaken to identify critical elements of the aviation system and indicate where resources could be most effectively deployed.

10.2.2 Doc 9859 details how to establish and manage a safety management system (SMS) for aviation-related organizations. Doc 9841 details how to conduct an organizational risk assessment for ATOs, which governs their risk mitigation strategies. The Licensing Authority should consider asking the ATO for a copy of its commensurate risk management plan. This will provide excellent insight for the Authority to map out its surveillance plan for all ATOs, whether or not they operate aircraft (or conduct training for air traffic controllers in an operational environment) in their training programmes. A threat and error management (TEM) approach is a valid method to adopt for risk identification, assessment, categorization and mitigation by the Licensing Authority. TEM, part of required knowledge and skill competencies for a licence holder, focuses on identifying and managing the interrelationships between safety and human performance in dynamic operational contexts. Examples of threats include adverse weather conditions, stressful ATC activities, aerodrome problems, terrain and traffic awareness, errors in aircraft handling and ground navigation, technical problems, incorrect aircraft configurations, etc.

10.2.3 The TEM model in relation to the flight crew environment is explained in detail in Attachment C to Chapter 3 of the PANS-TRG (Doc 9868), and the relationship between TEM and crew resource management (CRM) is further

explained in Part II, Chapter 2, of Doc 9683. The TEM model in relation to the air traffic control environment is explained in Circular 314. In summary, the TEM model is broken down into: threats; errors; undesired aircraft states in a flight crew environment or undesired states in another environment; and countermeasures. It can be used in several ways:

a) *as a safety analysis tool:* it can focus on a single event, as is the case with accident/incident analysis, or can be used to understand systemic patterns within a large set of events, as is the case with operational audits;

b) *as a licensing tool:* it helps clarify human performance needs, strengths and vulnerabilities, allowing the definition of competencies from a broader safety management perspective; and

c) *as a training tool:* it helps an organization improve the effectiveness of its training interventions and, consequently, of its organizational safeguards.

10.2.4 TEM is a valuable tool for licensing personnel to help identify potential ways in which the licensing system could be improved and strengthened. It provides a systematic method to address potential threats by identifying them, categorizing them by level of threat and then putting in place countermeasures to ensure that they no longer pose a threat to the system.

10.3 PERIODIC INSPECTIONS AND RENEWAL CHECKS

10.3.1 Annex 1 refers to competency and recency, but the specific competency and recency requirements must be determined by individual Contracting States (taking into account the need to comply with Annex 6 requirements for pilots engaged in international commercial air transport). The determination of such requirements should be based on a systematic approach to accident prevention and should include a risk assessment process and analysis of the State's current operations. Commonly, recency is defined by the requirement to perform a certain number of procedures (e.g. take-offs and landings or instrument approaches) within the immediately preceding specific period (for example, 90 days in the case of take-offs and landings). Consideration should be given to allowing some requirements to be met by utilizing an approved FSTD (refer to Chapter 7 of this Part and to Annex 6, Part I, 9.4.1 and 9.4.2; Part II, 3.9.4.2 and 3.9.4.3; and Part III, Section II, 7.4.1, for further details). Recency requirements are easily verified by inspection of company records or pilot logbooks.

Note.— Pilot logbooks are not required to be on board aircraft in international civil aviation operations.

10.3.2 Chapter 3 of this Part details the requirements for licensing and the validity period for each licence. The licensing system used by the Licensing Authority must record details of each aviation document issued including when it is due for renewal or revalidation. Renewal checks provide the opportunity for routine surveillance. However, the licence holder is also responsible for maintaining competency and meeting recency requirements defined by the State whenever the privileges of the licence are being exercised.

10.3.3 Renewal flight tests for licences or ratings may be conducted by CAA flight operations inspectors or other designated persons. The objective of such tests is to ensure that the licence holder meets all minimum knowledge and skill requirements for the licence. Although licence holders who are participating within the system would ordinarily be expected to demonstrate competency above the minimum requirements, failures do occur from time to time, possibly as a result of lack of preparation or excessive anxiety.

10.3.4 Licence holders who fail all or part of a test may be re-tested within a short period, having been allowed sufficient time to absorb feedback and improve knowledge or skill, but it would be unproductive and unsafe to permit multiple attempts without appropriate re-training. The Licensing Authority should publish regulations restricting the number of attempts that may be made in a given period. A number of failures associated with a particular training organization or air transport operator may indicate a systemic problem and warrant deeper investigation.

10.4 SURVEILLANCE AND ENFORCEMENT ACTIONS

10.4.1 In order to have a robust and effective system for surveillance and supervision of licensed aviation personnel, each Contracting State needs to have in place appropriate legislation and regulations and an enforcement system. This implies that the legislation must empower the Licensing Authority to:

a) carry out safety and security inspections and monitoring;

b) investigate the holder of aviation documents;

c) suspend or revoke a licence, rating, authorization, approval or medical assessment, or to impose conditions on its use;

d) grant exemptions; and

e) detain aircraft and impose prohibitions and conditions in relation to non-compliance with licensing regulations.

10.4.2 The legislation should also provide for penalties sufficient to deter non-compliance or abuse of the system and appropriate to the circumstances of the Contracting State. The penalties could include monetary fines, suspension of documents issued by the Licensing Authority for set periods or even imprisonment in extreme cases. The Contracting State must determine the level of enforcement that its Licensing Authority may exercise below the level of the criminal justice system.

10.4.3 The process for inspection, surveillance and monitoring of document holders is outlined in some detail in Doc 8335 and provides a sound base on which to develop an ongoing surveillance system. The overall process starts by developing a surveillance plan. This plan must consider the programme objectives, resource availability and types and numbers of inspections to be conducted. The plan should include the following:

a) *conduct of planned surveillance inspections:* particular attention must be paid to accurately recording the “who, what, how and why” of discrepancies or non-conformance for future analysis and action;

b) *analysis of the surveillance data:* once the inspection data are collected, they must be evaluated to determine areas of concern such as non-compliance with regulations; unsafe practices; positive and negative trends; isolated deficiencies or incidents; causes of the non-compliance, or identified systemic deficiencies;

c) *consideration of the information received from external sources:* this includes reports from air traffic services; the military; law enforcement agencies; or the general public, which all can provide additional useful data. Areas of concern identified from these external reports may need to be investigated;

d) *determination of the appropriate course of action, depending on the circumstances of each case:* inspectors must use good judgement before deciding on the action to be recommended to the Licensing Authority, subsequent to information collected through surveillance or from other sources; and

e) *conduct of investigation:* investigations are distinct from surveillance and are conducted when it is necessary to gather all evidence relevant to the circumstances causing the concern; once an investigation is completed, the inspector can determine whether to recommend rehabilitation or legal enforcement action.

Note.— Some Licensing Authorities make a distinction between personnel who conduct surveillance and personnel who investigate in order to limit the potential for conflict of interest between the two tasks.

RAMP INSPECTION CHECKLIST

Inspection location: _____

Inspector's name: _____

Date of inspection: _____

Pilot's name: _____

Pilot's address: _____

_____

_____

Licence(s) held: _____

Rating(s) held: _____

Authorization(s) held: _____

Medical certificate class: _____

Valid to: _____

Aircraft make and model: _____

Registration marks: _____

Item	*Satisfactory*	*Unsatisfactory*	*Comments*
Pilot licence			
Recent experience requirements			
AIRCRAFT DOCUMENTS			
Registration certificate			
Airworthiness certificate			
Aircraft journey log			
Aircraft radio licence			
Aeroplane technical log			
Aeroplane flight manual			
ATC flight plan			
NOTAM briefing documentation			
Mass and balance information			
Maps and charts for routes			
Weather briefing documentation			
INSPECT AIRCRAFT			
Airworthiness endorsements			
General condition			
Remarks:			

CAA Licensing Office: _____ Inspector's signature _____

Figure II-10-1. Ramp inspection checklist

10.4.4 In an investigation, the inspector is the primary gatherer of facts or evidence, as well as the case analyst. Because of the potentially far-reaching consequences of any recommendation, it is vital that the inspector determine all the relevant facts before reaching a conclusion based on his or her judgement, experience and aviation expertise. While it is preferable to rehabilitate a licence holder (e.g. through remedial training, counselling or further education) if at all possible, the inspector must maintain an open mind and not hesitate to recommend a punitive course of action should the circumstances warrant it.

10.4.5 Inspectors must at all times exercise their best interpersonal and communication skills. Information is most effectively exchanged when the inspector and the person being interviewed establish a barrier-free exchange. Verbal communication skills as well as listening skills are very important to ensure that no essential item of information is overlooked. During an interview, it is important to remember that the aim is to obtain information through a free exchange and not to interrogate.

10.4.6 In conducting an investigation, an inspector accumulates evidence from a range of sources. The evidence accumulated must be able to support either rehabilitation or enforcement action. For example:

a) evidence collected showing that a pilot declared an emergency to ATC while approaching an airport for landing with an aircraft in a low fuel state is evidence of the pilot's good judgement and attitude, and such evidence is to be considered as appropriate justification for the inspector to opt for no further action or for rehabilitation rather than an assumption that the pilot is guilty of deliberate non-compliance;

b) evidence collected showing that a pilot with an expired medical certificate was observed operating an aircraft, or a student pilot was observed carrying a passenger, or a person or an organization was observed knowingly operating non-airworthy aircraft are all examples of evidence substantiating deliberate non-compliance with national aviation regulations, and the appropriate course of action when deliberate non-compliance is substantiated through evidence is legal enforcement action, not rehabilitation.

10.4.7 Completion of the investigation and analysis of the evidence will lead to a determination by the inspector of the appropriate action and a recommendation to the Licensing Authority for no further action, remedial training/ rehabilitation or enforcement action.

10.4.8 The Licensing Authority must ensure that all activity leading up to an action being taken is fully documented and that all issues are addressed in a timely and structured manner. Issues must be tracked to ensure all developments are noted and the final resolution of any issue is recorded. This documentation process is essential to safeguard the Authority against any subsequent claim of damage which may be initiated by disgruntled persons.

10.4.9 One type of surveillance commonly undertaken at many airports is that of ramp inspections for civil aircraft. The frequency and number of aircraft or flight crew members inspected will depend on the resources available to the Licensing Authority and the assessed level of risk. Doc 8335 contains guidance for ramp inspections of commercial air transport operations.

10.4.10 An example checklist that may be adapted for a general aviation ramp inspection is shown in Figure II-10-1.

Appendix to Part II

EXAMPLE OF A LICENSING AUTHORITY AUDIT CHECKLIST FOR AN ICAO LANGUAGE PROFICIENCY TEST

1. GENERALITIES

The following checklist example is taken from Appendix C to Doc 9835 and can be used to evaluate a language proficiency test. Further guidance is available from Doc 9835.

2. TEST DESIGN AND CONSTRUCT

Reference	*Item*	*Reply*	*Notes*
2.1	Is the test designed to assess speaking and listening proficiency in accordance with each component of the ICAO Language Proficiency Rating Scale and the holistic descriptors in Annex 1?	☐ YES ☐ NO	
2.2	Is a definition of the test purpose that describes both the aims of the test and the target population accessible to all decision-makers?	☐ YES ☐ NO	
2.3	Is a description of and rationale for test construct and how it corresponds to the ICAO language proficiency requirements accessible to all decision-makers in plain, layperson language?	☐ YES ☐ NO	
2.4	Does the test comply with principles of good practice and a code of ethics as described in Chapter 6 of ICAO Doc 9835?	☐ YES ☐ NO	
2.5	Does the test focus on discrete-point items, on grammar explicitly or on discrete vocabulary items?	☐ YES ☐ NO	
2.6	Is a specific listening section with individual items included? *Note.— If comprehension is assessed through a specific listening section with individual items, it should not be done to the detriment of assessing interaction.*	☐ YES ☐ NO	

Reference	*Item*	*Reply*	*Notes*
2.7	Does the test include voice-only interaction?	☐ YES ☐ NO	
2.8	Is the test specific to aviation operations?	☐ YES ☐ NO	
2.9	Does the test assess plain language proficiency in an aviation context?	☐ YES ☐ NO	
2.10	Does the test avoid items that are designed to elicit highly technical or very context-specific language?	☐ YES ☐ NO	
2.11	Is the final score for each test-taker the lowest of the scores in each of the six ICAO language proficiency skills?	☐ YES ☐ NO	

3. TEST VALIDITY AND RELIABILITY

Reference	*Item*	*Reply*	*Notes*
3.1	Is a statement of evidence for test validity and reliability accessible to all decision-makers in plain, layperson language?	☐ YES ☐ NO	
3.2	Is a description of the development process that includes the following information accessible to all decision-makers: a) a summary of the development calendar? b) a report on each development phase?	 ☐ YES ☐ NO ☐ YES ☐ NO	
3.3	Is an appraisal of the expected test washback effect on training accessible to all decision-makers?	☐ YES ☐ NO	

4. RATING

Reference	*Item*	*Reply*	*Notes*
4.1	Is the rating process documented?	☐ YES ☐ NO	

Reference	*Item*	*Reply*	*Notes*
4.2	To fulfil licensing requirements, do at least two raters participate in the rating of tests, with a third expert rater consulted in case of divergent scores?	☐ YES ☐ NO	
4.3	a) Are initial and recurrent rater training documented? b) Are rater training records maintained? c) Are raters audited periodically and reports documented?	☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO	
4.4	If rating is conducted using new technology, including speech recognition technology, is the correspondence of such rating to human rating, on all aspects of the Rating Scale, clearly demonstrated in layperson language?	☐ YES ☐ NO	

5. TEST ADMINISTRATION AND SECURITY

Reference	*Item*	*Reply*	*Notes*
Test administration			
5.1	Is a complete sample of the test published, including the following: a) test-taker documents (paper instructions, screen display, etc.)? b) interlocutor instructions or prompts? c) rater documentation (answer key, rating scale, instructions)? d) one complete sample of audio recordings (for listening sections or semi-direct prompts)? e) a demonstration of test-taker/interlocutor interaction?	 ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO	
5.2	Is the test rating process documented, including instructions on the extent and nature of evidence that raters should collect?	☐ YES ☐ NO	

Reference	*Item*	*Reply*	*Notes*
5.3	Are the test instructions to the test-taker, the test administration team and test raters clearly documented?	☐ YES ☐ NO	
5.4	Are the requirements for equipment, human resources and facilities necessary for the test included in the instructions?	☐ YES ☐ NO	
5.5	Is the testing location moderately comfortable, private and quiet?	☐ YES ☐ NO	
5.6	Is a full description of test administration policies and procedures available to all decision-makers? Does it include the following: a) policies and procedures for retaking the test? b) score reporting procedures? c) record-keeping arrangements? d) plans for quality control, test maintenance and ongoing test development? e) purchasing conditions?	 ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO	
5.7	Has a documented appeals process been established and made available to test-takers and decision-makers at the beginning of the testing process?	☐ YES ☐ NO	
Test security			
5.8	Is a full description of security measures required to ensure the integrity of the testing process documented and available to all decision-makers?	☐ YES ☐ NO	
5.9	In the case of semi-direct prompts, are there adequate versions of the test to meet the needs of the population to be tested with respect to its size and diversity?	☐ YES ☐ NO	
5.10	Are test questions and prompts held in confidence and not published or in any way provided to test-takers prior to the test event?	☐ YES ☐ NO	
5.11	Is a documented policy for all aspects of test security accessible to all decision-makers?	☐ YES ☐ NO	

6. RECORD-KEEPING

Reference	*Item*	*Reply*	*Notes*
6.1	Are all proficiency tests of speaking ability involving interaction between the test-taker and interlocutor recorded on audio or video media?	☐ YES ☐ NO	
6.2	Are evaluation sheets and supporting documentation filed for a predetermined and documented period of time of sufficient duration to ensure that rating decisions can no longer be appealed?	☐ YES ☐ NO	
6.3	Is the record-keeping process adequate for the scope of the testing and documented?	☐ YES ☐ NO	
6.4	Is the score-reporting process documented, and are scores retained for the duration of the licence?	☐ YES ☐ NO	
6.5	Are results of testing held in strict confidence and released only to test-takers, their sponsors or employers, and the Civil Aviation Authority, unless test-takers provide written permission to release their results to another person or organization?	☐ YES ☐ NO	

7. ORGANIZATIONAL INFORMATION AND INFRASTRUCTURE

Reference	*Item*	*Reply*	*Notes*
7.1	Has an aviation language TSP provided clear information about its organization and its relationships with other organizations?	☐ YES ☐ NO	
7.2	If a TSP is also a training provider, is there a clear and documented separation between the two activities?	☐ YES ☐ NO	
7.3	Does the TSP employ sufficient numbers of qualified interlocutors and raters to administer the required tests?	☐ YES ☐ NO	
7.4	Has the TSP provided an explanation of how the test is maintained, including an explanation of how ongoing test development is conducted?	☐ YES ☐ NO	

8. TESTING-TEAM QUALIFICATIONS

Reference	*Item*	*Reply*	*Notes*
Familiarity with ICAO documentation			
8.2	Are all testing team members familiar with the following ICAO publications? a) the relevant SARPS and Recommended Practices of Annex 1? b) holistic descriptors (Appendix 1 to Annex 1) and the ICAO Rating Scale (Attachment A to Annex 1)? c) *Manual on the Implementation of ICAO Language Proficiency Requirements* (Doc 9835)? d) ICAO Rated Speech Samples CD?	 ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO ☐ YES ☐ NO	
Test design and development team			
8.3	Does the test design and development team include individuals with aviation operational, language test development, and linguistic expertise?	☐ YES ☐ NO	
Test administration team (administrators and interlocutors)			
8.4	Do test administrators and interlocutors have a working knowledge of the test administration guidelines published by the test organization?	☐ YES ☐ NO	
8.5	Do interlocutors demonstrate language proficiency of at least ICAO Extended Level 5 in the language to be tested and proficiency at Expert Level 6 if the test is designed to assess ICAO Level 6 proficiency?	☐ YES ☐ NO	
8.6	Have interlocutors successfully completed initial interlocutor training?	☐ YES ☐ NO	
8.7	Have interlocutors successfully completed recurrent interlocutor training at least once each year?	☐ YES ☐ NO	
8.8	Do interlocutors have appropriate aviation operational or language testing expertise, or both?	☐ YES ☐ NO	

Reference	*Item*	*Reply*	*Notes*
Rater team			
8.9	Do raters demonstrate language proficiency of at least ICAO Extended Level 5 in the language to be tested, and Expert Level 6 if the test is designed to assess ICAO Level 6 proficiency?	☐ YES ☐ NO	
8.10	Are raters familiar with aviation English and with any vocabulary and structures that will likely be elicited by the test prompts and interactions?	☐ YES ☐ NO	
8.11	Have raters successfully completed initial rater training?	☐ YES ☐ NO	
8.12	Have raters successfully completed recurrent rater training at least once each year?	☐ YES ☐ NO	

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