

Democratic Socialist Republic of Sri Lanka



Civil Aviation Authority of Sri Lanka

Implementing Standards

(Issued under Sec. 120, Civil Aviation Act No. 14 of 2010)

Title: Personnel Licensing Requirements -Licences for Flight Navigators, Flight Engineers & Flight Radio Telephone Operators.
Compliance to Annex 1- Chapter 3

Reference No. : CA-IS-2013-PEL-003

S.N. : 043

Date : 18th November 2013

Pursuant to Sec. 120 of the Civil Aviation Act No.14 of 2010, Director General of Civil Aviation shall have the power to issue, whenever he considers it necessary or appropriate to do so, such Implementing Standards for the purpose of giving effect to any of the provisions of the Civil Aviation Act, any regulations or rules made thereunder including the Articles of the Convention on International Civil Aviation which are specified in the Schedule to the Act.

Accordingly, the undersigned being the Director General of Civil Aviation do hereby issue the Implementing Standards as mentioned in the Attachment hereto (Ref: CA-IS-2013-PEL-003], for the purpose of giving effect to the provisions in the aforementioned Act and Standards & Procedures described under Article 37 of the Convention, which are specified in the Attachment.

These Implementing Standards shall come into force with immediate effect and remain in force unless revoked.

Attention is also drawn to sec. 103 of the Act , which states inter alia that failure to comply with Implementing Standard is an offence.

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Director General of Civil Aviation and
Chief Executive Officer

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Enclosure: Attachment No. CA-IS-2013-PEL-003-Att-01

Implementing Standards

Title: Personnel Licensing Requirements - Licenses for Flight Navigators, Flight Engineers & Flight Radio Telephone Operators
Compliance to Annex 1- Chapter 3-

GENERAL :

- i. Requirements contained in this document are based on the ICAO annex 1-
“ Personnel Licensing” – Chapter 3 – Licences for Flight Crew Members other than
licences for pilots.
- ii. The requirements contained in this document are applicable to
 1. Holders of Flight Navigator & Flight Engineer Licences
 2. Holders of a licence for Air Transport Operations.
 3. Air Navigation Service providers
 4. Flight Radiotelephony Operators
 5. Designated Aviation Medical Examiners.
- iii. This document supersedes the Aviation Safety Notice (ASN) 056 issued by the
DGCA and ASN 056 shall be treated as null and void.
- iv. The document may be amended from time to time and the amendments will be
reflected with the vertical line on the right side of the text.
- v. This Directive contains three parts specifying the following.

Part 1	-	Flight navigator licence
Part 2	-	Flight engineer licence
Part 3	-	Flight radio telephone operators

Part 1

1. Flight navigator licence

1.1 General Provisions

- 1.1.1 An applicant shall, before being issued with a flight navigator licence, meet such requirements in respect of age, knowledge, experience, skill and medical fitness as are specified hereunder for those licences.
- 1.1.2 An applicant for a flight navigator licence shall demonstrate such requirements for knowledge and skill as are specified for those licences, in a manner determined by DGCA Sri Lanka.
- 1.1.3 A holder of a foreign Flight Navigator licence shall be issued with a foreign licence validation certificate in terms of para 2.0 of IS 041 and the IS 008 as an alternative to the issuance of CAA Sri Lanka licence.

1.2 Requirements for the issue of the licence.

1.2.1 Age

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

1.2.2 Knowledge

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

Air law

- a) rules and regulations relevant to the holder of a flight navigator licence; appropriate air traffic services practices and procedures;

Flight performance, planning and loading

- b) effects of loading and mass distribution on aircraft performance;
- c) use of take-off, landing and other performance data including procedures for cruise control;
- d) pre-flight and en-route operational flight planning; preparation and filing of air traffic services flight plans; appropriate air traffic services procedures; altimeter setting procedures;

Human performance

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

Meteorology

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

Navigation

- h) dead-reckoning, pressure-pattern and celestial navigation procedures; the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for long-range flights;
- i) use, limitation and serviceability of avionics and instruments necessary for the navigation of the aircraft;
- j) use, accuracy and reliability of navigation systems used in departure, en-route and approach phases of flight; identification of radio navigation aids;
- k) principles, characteristics and use of self-contained and external-referenced navigation systems; operation of airborne equipment;
- l) the celestial sphere including the movement of heavenly bodies and their selection and identification for the purpose of observation and reduction of sights; calibration of sextants; the completion of navigation documentation;
- m) definitions, units and formulae used in air navigation;

Operational Procedures

- n) interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes, abbreviations, and instrument procedure charts for departure, en- route, descent and approach;

Principles of flight

- o) principles of flight;

Radiotelephony

- p) Communication procedures and phraseology.

1.2.3 Experience

- 1.2.3.1 The applicant shall have completed in the performance of the duties of a flight navigator, not less than 200 hours of flight time, acceptable to DGCA Sri Lanka in aircraft engaged in cross-country flights, including not less than 30 hours by night.
- 1.2.3.2 When the applicant has flight time as a pilot, DGCA Sri Lanka will determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 1.2.3.1 can be reduced accordingly.
- 1.2.3.3 The applicant shall produce evidence of having satisfactorily determined the aircraft's position in flight, and used that information to navigate the aircraft, as follows:
- a) by night — not less than 25 times by celestial observations; and
 - b) by day — not less than 25 times by celestial observations in conjunction with self- contained or external-referenced navigation systems.

1.2.4 Skill

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

- a) recognize and manage threats & errors
- b) exercise good judgment and airmanship;
- c) apply aeronautical knowledge;
- d) perform all duties as part of an integrated crew; and
- e) communicate effectively with the other flight crew members.

1.2.5 Medical fitness

he applicant shall hold a current Class 2 Medical Assessment.

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

Subject to compliance with the requirements specified in 5.0, 6.0 and 7.1 of IS 041, the privileges of the holder of a flight navigator licence shall be to act as flight navigator of any aircraft. If the privileges include radiotelephony communication, the licence holder shall comply with the requirements specified in 9.1. of IS 041

Part 2

2 Flight engineer licence

2.1 General Provisions

- 2.1.1 An applicant shall, before being issued with a flight engineer licence, meet such requirements in respect of age, knowledge, experience, skill and medical fitness as are specified hereunder for those licences.
- 2.1.2 An applicant for a flight engineer licence shall demonstrate such requirements for knowledge and skill as are specified for those licences, in a manner determined by DGCA Sri Lanka.
- 2.1.3 A holder of a foreign Flight Engineer licence shall be issued with a foreign licence validation certificate in terms of Para 2.0 of IS 041 and the IS 008 as an alternative to the issuance of CAA Sri Lanka licence.

2.2 Requirements for the issue of the licence

2.2.1 Age

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

2.2.2 Knowledge

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

Air law

- a) rules and regulations relevant to the holder of a flight engineer licence; rules and regulations governing the operation of civil aircraft pertinent to the duties of a flight engineer;

Aircraft general knowledge

- b) basic principles of power plants, gas turbines and/or piston engines; characteristics of fuels, fuel systems including fuel control; lubricants and lubrication systems; afterburners and injection systems, function and operation of engine ignition and starter systems;
- c) principles of operation, handling procedures and operating limitations of aircraft power plants; effects of atmospheric conditions on engine performance;
- d) airframes, flight controls, structures, wheel assemblies, brakes and anti-skid units, corrosion and fatigue life; identification of structural damage and defects;
- e) ice and rain protection systems;

- f) pressurization and air-conditioning systems, oxygen systems;
- g) hydraulic and pneumatic systems;
- h) basic electrical theory, electric systems (AC and DC), aircraft wiring systems, bonding and screening;
- i) principles of operation of instruments, compasses, autopilots, radio communication equipment, radio and radar navigation aids, flight management systems, displays and avionics;
- j) limitations of appropriate aircraft;
- k) fire protection, detection, suppression and extinguishing systems;
- l) use and serviceability checks of equipment and systems of appropriate aircraft; Flight performance, planning and loading
- m) effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;
- n) use and practical application of performance data including procedures for cruise control;

Human performance

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

Operational procedures

- p) principles of maintenance, procedures for the maintenance of airworthiness, defect reporting, pre-flight inspections, precautionary procedures for fuelling and use of external power; installed equipment and cabin systems;
- q) normal, abnormal and emergency procedures;
- r) operational procedures for carriage of freight and dangerous goods;

Principles of flight

- s) fundamentals of aerodynamics;

Radiotelephony

- t) Communication procedures and phraseology.

Navigation

- u) fundamentals of navigation; principles and operation of self-contained

systems; and Meteorology

Meteorology

v) operational aspects of meteorology

2.2.3 Experience

2.2.3.1 The applicant shall have completed, under the supervision of a person accepted by DGCA Sri Lanka for that purpose, not less than 100 hours of flight time in the performance of the duties of a flight engineer. DGCA Sri Lanka shall determine whether experience as a flight engineer in a flight simulator, which has been approved, by him is acceptable as part of the total flight time of 100 hours. Credit for such experience shall be limited to a maximum of 50 hours.

2.2.3.2 When the applicant has flight time as a pilot, DGCA Sri Lanka shall determine whether such experience is acceptable and, if so, the extent to which the flight time requirements of 2.2.3.1 can be reduced accordingly.

2.2.3.3 The applicant shall have operational experience in the performance of the duties of a flight engineer, under the supervision of a flight engineer accepted by DGCA Sri Lanka for that purpose, in at least the following areas:

a) Normal procedures

- pre-flight inspections
- fuelling procedures, fuel management
- inspection of maintenance documents
- normal flight deck procedures during all phases of flight
- crew coordination and procedures in case of crew incapacitation
- defect reporting

b) Abnormal and alternate (standby) procedures

- recognition of abnormal functioning of aircraft systems
- use of abnormal and alternate (standby) procedures

c) Emergency procedures

- recognition of emergency conditions
- use of appropriate emergency procedures

2.2.4 Skill

2.2.4.1 The applicant shall have demonstrated the ability to perform as flight engineer of an aircraft, the duties and procedures described in 2.2.3.3 with a degree of competency appropriate to the privileges granted to the holder of a flight engineer Licence, and to:

- a) Recognize and manage threats and errors
- b) use aircraft systems within the aircraft's capabilities and limitations;
- c) exercise good judgment and airmanship;
- d) apply aeronautical knowledge;.
- e) perform all the duties as part of an integrated crew with the successful outcome assured ; and
- f) communicate effectively with the other flight crew members.

2.2.4.2 The use of a flight simulation training device for performing any of the procedures required during the demonstration of skill described in 2.2.4.1 shall be approved by DGCA Sri Lanka, which shall ensure that the flight simulation training device is appropriate to the task.

2.2.5 Medical fitness

The applicant shall hold a current Class 2 Medical Assessment.

2.3 Privileges of the holder of the licence and the conditions to be observed in exercising such privileges.

2.3.1 Subject to compliance with the requirements specified in 5.0, 6.0 and 7.1 of IS 041, the privileges of the holder of a flight engineer licence shall be to act as flight engineer of any type of aircraft on which the holder has demonstrated a level of knowledge and skill, as determined by DGCA Sri Lanka on the basis of those requirements specified in 2.2.2 and 2.2.4 which are applicable to the safe operation of that type of aircraft.

2.3.2 The types of aircraft on which the holder of a flight engineer licence is authorized to exercise the privileges of that licence, shall be entered on the licence issued by DGCA Sri Lanka.

Part 3

3 Flight radio telephone operators

- 3.1** Note 1.— Where the knowledge and skill of an applicant have been established as satisfactory in respect of the certification requirements for the radiotelephone operator's restricted certificate specified in the general radio regulations annexed to the International Telecommunication Convention and the applicant has met the requirements that are pertinent to the operation of the radiotelephone on board an aircraft, a Contracting State may endorse a licence already held by the applicant (as provided for in 1. XIII of IS 045) or issue a separate licence as appropriate.
- 3.2** Note 2.— Skill and knowledge requirements on radiotelephony procedures and phraseology have been developed as an integral part of all aeroplane, airship, helicopter and powered-lift pilot licences.