



# **YEMEN CIVIL AVIATION REGULATIONS (YCARs)**

## **PART II**

### **CHAPTER – 3 –**

#### **LICENSES - FLIGHT ENGINEER**

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### ISSUE HISTORY AND DATE OF APPLICABILITY

<b>Issue No.</b>	<b>Date of issue</b>	<b>Date of applicability</b>
Issue 00	June 2013	June 2013
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## HIGHLIGHTS OF CHANGE

<b>Amendment</b>	<b>Subject(s)</b>
<b>Issue: 01</b>  <b>November</b>  <b>2018</b>	Periodic review and alignment with ICAO Annex 1 latest amendment.  Other changes made: – Changes made to section “ISSUE HISTORY AND DATE OF APPLICABILITY Instead of RECORD OF AMENDMENTS”

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## CHAPTER 3

### 3.0 LICENSE - FLIGHT ENGINEER

#### 3.1 REQUIREMENTS FOR ISSUE OF FLIGHT ENGINEER LICENSE

##### General rules concerning flight engineer License

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

##### 3.1.1 Age

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

##### 3.1.2 Knowledge

The applicant shall have demonstrated, in a manner determined by the CAMA, a level of knowledge appropriate to the privileges granted to the holder of a Flight Engineer License in at least the following subjects:

###### Air Law

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

###### Aircraft General Knowledge

- (b) basic principles of power plants, gas turbines and/or piston engines; characteristics of fuels, fuel systems including fuel control; lubricants and lubrication systems; 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 system;
- (f) Pressurization and air-conditioning systems, oxygen systems;
- (g) Hydraulic and pneumatic systems;
- (h) Basic electric theory, electric systems (AC and DC), aircraft wiring systems, bonding and screening;
- (i) principles of operation of instruments, compasses, auto-pilots, 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 and Planning

- (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.

## Communication

(t) Communication procedures and phraseology.

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

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

### 3.1.3 Experience

(a) The applicant shall have completed under proper supervision not less than 100 hours of flight time in the performance of the duties of a flight engineer, with the provision that up to 50 hours gained in flight simulators in an approved training course may be credited towards the total flight experience.

(b) When the applicant has flight time as a pilot, the CAMA may determine whether such experience is acceptable and if so, the extent to which the flight time requirements referenced above can be reduced accordingly.

(c) The applicant shall have operational experience in the performance of the duties of a flight engineer, under the supervision of a flight engineer instructor licensed by the CAMA, in at least the following areas:

#### (1) NORMAL PROCEDURES

- Pre-flight inspections
- fuelling procedures, fuel management
- Inspection of maintenance documents
- Normal flight desk procedures during all phases of flight
- Crew coordination and procedures in case of crew incapacitation
- defect reporting

#### (2) ABNORMAL AND ALTERNATE (STANDBY) PROCEDURES

- Recognition of abnormal functioning of aircraft systems

- Use of abnormal and alternate (standby) procedures

(3) EMERGENCY PROCEDURES

- Recognition of emergency conditions
- Use of appropriate emergency procedures

**3.1.4 Skill**

3.1.4.1 The applicant shall have demonstrated the ability to perform as flight engineer of an aircraft, the duties and procedures described in paragraph 3.1.3(c) above, with a degree of competency appropriate to the privileges granted to the holder of a Flight Engineer License, and to:

- (a) Recognize and manage threats and errors;

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

- (b) use aircraft systems within the aircraft's capabilities and limitation;
- (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 never in doubt; and
- (f) Communicate effectively with the other flight crew members.

3.1.4.2 The use of a synthetic flight trainer for performing any of the procedures required during the demonstration of skill described in sub-paragraph (a) above shall be approved by the CAMA.

**3.1.5 Medical Fitness**

The applicant shall hold a current Class II Medical Assessment issued in compliance with these Requirements

**3.1.6 Privileges of the Holder of the License**

- (a) Subject to compliance with the requirements specified in paragraphs 1.7 and 1.9 above, the privileges of the holder of a flight engineer License shall be to act as flight engineer of in any aircraft on



which the holder has demonstrated a level of knowledge and skill in a manner determined by the CAMA on the basis of those requirements specified in paragraphs 3.1.2 and 3.1.4 above, which are applicable to the safe operation of that type of aircraft.

- (b) The types of aircraft on which the holder of a flight engineer License is authorized to exercise the privileges of that License shall be entered on the License.