

# Airworthiness Procedure

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民航局

AUTORIDADE DE AVIAÇÃO CIVIL  
CIVIL AVIATION AUTHORITY

No. : AP11

Issue : 1

Date : 15 Apr 08

SUBJECT: MAR-147 Training Course Standards

## 1. Introduction

- 1.1 Paragraph 11(1) of the ANRM, as revised by Aeronautical Circular (AC) with ref. AC/AW/006R00 issued 30 June 06, establishes that the Civil Aviation Authority may grant aircraft maintenance engineer licences, subject to such conditions as it thinks fit, upon it being satisfied that the applicant is a fit person to hold the licence and has furnished such evidence and passed such examinations and tests as the Civil Aviation Authority may require of him for the purpose of establishing that he has sufficient knowledge, experience, competence and skill in aeronautical engineering. The MAR-66 specifies the examination standard to be used by the Civil Aviation Authority when conducting all basic examinations.
- 1.2 MAR-66 specifies the level of knowledge required to be demonstrated by examination and therefore this chapter provides guidance on the associated basic training standards. MAR-66 specifies the standard for aircraft type training in category B1, B2 and C which is ATA specification 104 at level III as stated in ATA 104. Aircraft task training for category A is at the standard required for each particular task as specified in the relevant maintenance manual.
- 1.3 In respect to basic training, the student should, upon satisfactory completion of such a training course, be able to use and apply his/her knowledge of the theory and basic principles of the various subjects in the manner indicated. It should be noted that the detailed knowledge objectives are defined in respect of the various basic levels of knowledge required and are indicative of the different levels of knowledge expected to be achieved for each MAR-66 basic category or sub-category. Some basic levels have been omitted because they are not required by MAR-66. Nothing prevents a MAR-147 approved maintenance training organisation from carrying out training to a higher standard than that required to achieve the MAR-66 examination standards.
- 1.4 The MAR-147 approved maintenance training organisation will need to prepare an objective analysis of how, in terms of time and content, it intends to deliver the various training courses that it is approved or intended to be approved to conduct such that both MAR-66 Section 2 Appendix 1 and MAR-147.85 are satisfied. The information contained in this chapter is intended to assist organisations in this process.
- 1.5 This AP should be read in conjunction with MAR-66 Section 2, Appendix 1, MAR-147.85 and MAR-1 Airworthiness Procedure AP9.

## 2. Effective Date

01 July 2008

### **3. Level of Knowledge for Individual Training Module**

The followings use the MAR-66 Section 2 Appendix 1 references for ease of use.

#### **MODULE 1. MATHEMATICS**

##### **1.1 Arithmetic**

*Level 1 - Basic knowledge of and ability to make simple calculations.*

*Level 2 - General knowledge of and ability to make calculations.*

##### **1.2 Algebra**

*Level 1 - Basic knowledge of and ability to give simple descriptions.*

*Level 2 - General knowledge of and ability to make simple calculations.*

##### **1.3 Geometry**

*Level 1 - Basic knowledge of and ability to give simple descriptions.*

*Level 2 - General knowledge of and ability to draw graphs and read graphs/tables.*

#### **MODULE 2. PHYSICS**

##### **2.0 Units**

*Levels all - Detailed knowledge and ability to convert Metric, Imperial and US units and measurements.*

##### **2.1 Matter**

*Level 1 - Basic knowledge of and ability to give simple description.*

##### **2.2 Mechanics**

*Level 1 - Basic knowledge of and ability to give simple description using examples.*

*Level 2 - General knowledge of and ability to give succinct description using examples*

##### **2.3 Thermodynamics**

*Level 2 - General knowledge of and ability to give succinct description using examples.*

##### **2.4 Optics (Light)**

*Level 2 - General knowledge of and ability to give succinct description using examples.*

##### **2.5 Wave Motion and Sound**

*Level 2 - General knowledge of and ability to give succinct description using examples.*

#### **MODULE 3. ELECTRICAL FUNDAMENTALS**

*Level 1 - Basic knowledge of and ability to give a simple description.*

*Level 2 - General knowledge of and ability to both give a succinct description and, where highlighted, calculate.*

#### **MODULE 4. ELECTRONIC FUNDAMENTALS.**

*Level 1 - Basic knowledge of and ability to give a simple description.*

*Level 2 - General knowledge of and ability to give a succinct description.*

#### **MODULE 5. DIGITAL TECHNIQUES & ELECTRONIC INSTRUMENT SYSTEMS**

*Level 1 - Basic knowledge of and ability to give a simple description.*

*Level 2 - General knowledge of and ability to both give a succinct description and, where highlighted, interpret diagrams.*

*Level 3 - Detailed knowledge of and ability to give an in depth description.*

#### **MODULE 6. MATERIALS AND HARDWARE**

*Level 1 - Basic knowledge of and ability to give a simple description.*

*Level 2 - General knowledge of and ability to give a succinct description.*

*Level 3 - Detailed knowledge of and ability to give an in depth description.*

#### **MODULE 7. MAINTENANCE PRACTICES**

*Level 1 - Basic knowledge of and ability to both give a simple description of and, where highlighted, operate, inspect, calculate or test.*

*Level 2 - General knowledge of and ability to both give a succinct description of and, where highlighted, operate, inspect, calculate or test.*

*Level 3 - Detailed knowledge of and ability to both give an in depth description of and, where highlighted, operate, inspect, calculate or test.*

#### **MODULE 8. BASIC AERODYNAMICS**

*Level 1 - Basic knowledge of and ability to give a simple description.*

*Level 2 - General knowledge of and ability to give a succinct description.*

#### **MODULE 9. HUMAN FACTORS**

*Level 1 - Basic knowledge of and ability to give a simple description using examples to illustrate significance and limitations.*

*Level 2 - General knowledge of and ability to give a succinct description using examples to illustrate significance and limitations.*

#### **MODULE 10. AVIATION LEGISLATION**

*Level 1 - Basic knowledge of and ability to give a simple description.*

*Level 2 - General knowledge of and ability to give a succinct description.*

#### **MODULE 11. AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS**

*Level 1 - Basic knowledge of and ability to give a simple description.*

*Level 2 - General knowledge of and ability to give a succinct description.*

*Level 3 - Detailed knowledge of and ability to give an in depth description.*

## **MODULE 12. HELICOPTER AERODYNAMICS, STRUCTURES AND SYSTEMS**

*Level 1 - Basic knowledge of and ability to give a simple description.*

*Level 2 - General knowledge of and ability to give a succinct description.*

*Level 3 - Detailed knowledge of and ability to give an in depth description.*

## **MODULE 13. AIRCRAFT AERODYNAMICS, STRUCTURES AND SYSTEMS**

*Level 1 - Basic knowledge of and ability to give a simple description.*

*Level 2 - General knowledge of and ability to give a succinct description.*

*Level 3 - Detailed knowledge of and ability to give an in depth description.*

## **MODULE 14. PROPULSION**

*Level 1 - Basic knowledge of and ability to give a simple description.*

*Level 2 - General knowledge of and ability to give a succinct description.*

## **MODULE 15. GAS TURBINE ENGINE**

*Level 1 - Basic knowledge of and ability to give both a simple description and, where highlighted, inspect.*

*Level 2 - General knowledge of and ability to give a succinct description.*

*Level 3 - Detailed knowledge of and ability to give both an in depth description and, where highlighted, inspect, interpret and trend monitor.*

## **MODULE 16. PISTON ENGINE**

*Level 1 - Basic knowledge of and ability to both give a simple description and, where highlighted inspect.*

*Level 2 - General knowledge of and ability to both give a succinct description and, where highlighted, measure, calculate, interpret and inspect.*

*Level 3 - Detailed Knowledge of and ability to both give an in depth description and, where highlighted, measure, calculate, interpret and inspect.*

## **MODULE 17. PROPELLER**

*Level 1 - Basic knowledge of and ability to both give a simple description and, where highlighted, assess.*

*Level 2 - General knowledge of and ability to give a succinct description.*

*Level 3 - Detailed knowledge of and ability to both give an in depth description and, where highlighted, assess, balance and track.*

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