



สำนักงานการบินพลเรือนแห่งประเทศไทย  
The Civil Aviation Authority of Thailand

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# GUIDANCE MATERIAL FOR MAINTENANCE ORGANISATION TRAINING PROGRAM MANUAL

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## ABBREVIATIONS

AMC	Acceptable Means of Compliance
ATO	Aviation Training Organisation
CAAT	The Civil Aviation Authority of Thailand
CAATR	Requirement of the Civil Aviation Authority of Thailand
CDCCL	Critical Design Configuration Control Limitation
EN4179	European Standard 4179
EWIS	Electrical Wiring Interconnection Systems
FTS	Fuel Tank Safety
GM	Guidance Material
MOE	Maintenance Organisation Exposition
NAS410	National Aerospace Standard 410
NDT	Non-Destructive Testing
OJT	On the Job Training
SMS	Safety Management System
TCAR	Thailand Civil Aviation Regulation
TPM	Training Program Manual

## 0. INTRODUCTION

### 0.1 Scope and Applicability

The Civil Aviation Authority of Thailand (CAAT) is the Competent Authority for maintenance organisations<sup>1</sup> that are involved in the maintenance of Thai registered aircraft and components intended for fitment thereto as established by TCAR Part 145.A.1 General. CAAT is therefore responsible for the final approval of these maintenance organisations and for establishing procedures detailing how TCAR Part 145 applications and approvals are managed.

This Guidance Material (GM) is applicable to TCAR Part 145 applicants and TCAR Part 145 maintenance organisations regardless of whether their principal place of business is located in Thailand or other countries. The provisions of this GM are complementary to the maintenance organisation certification requirements detailed in TCAR Part 145 and do not supersede or replace any associated regulatory requirements.

### 0.2 Purpose

The purpose of this GM is to describe how to comply with CAAT requirements for maintenance organisation certification. It also details how to comply with Requirements of the Civil Aviation Authority of Thailand Issues 2 & 5, and TCAR Part 145.

### 0.3 Associated Instructions

CAAT has developed associated provisions (guidance, forms, checklists, and templates) that detail specific matters, which need to be considered as an integral part of this GM. This information is available on the CAAT website ([www.caat.or.th](http://www.caat.or.th))

### 0.4 Communication

All documents and correspondence between the maintenance organisation and CAAT should be in English. The official e-mail is [air-amo@caat.or.th](mailto:air-amo@caat.or.th).

### 0.5 Management of Approvals by CAAT

Submission and approval of the TPM will be conducted in CAAT-EMPIC.

### 0.6 References

- Air Navigation Act B.E. 2497
- Requirements of the Civil Aviation Authority of Thailand Issue 2 on Repair Station Certificate
- Requirements of the Civil Aviation Authority of Thailand Issue 5 on Foreign Repair Station Certificate
- Thailand Civil Aviation Regulation on Repair Station Certificate Requirements (TCAR PART 145)
- Acceptable Means of Compliance to Thailand Civil Aviation Regulation on Repair Station Certificate Requirements (AMC to TCAR Part 145)

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<sup>1</sup> The terms “Maintenance Organisations” and “Repair Stations” should be read interchangeably in this Guidance Material.

## 1. TRAINING PROGRAM

*Reference: Requirement of the CAAT No. 2 Clause 3 (11); Requirement of the CAAT No. 5 Clause 3 (9); 145.A.30(e)*

A maintenance organisation training program is required, but the format is not specified. However, it must include the information as detailed in this GM. An example TPM format is provided in Appendix 2.

The maintenance organisation should:

- establish a training program for staff involved in maintenance activities such as:
  - Nominated persons, line managers, supervisors
  - Certifying staff, support staff and maintenance engineers
  - Technical support personnel such as planners, engineers or technical record staff
  - Persons involved in any compliance monitoring and/or safety management-related processes and tasks, including the application of human factors principles, internal investigations and safety training
  - Specialised services staff
  - Stores department staff, purchasing department staff
  - Ground equipment operators
- submit the training program to CAAT for approval, noting that:
  - the training program can be a part of the MOE for a domestic maintenance organisation or the CAAT MOE supplement for a foreign maintenance organisation. It can also be managed as a separate document attached to the MOE or its supplement.  
procedures associated with the training program can be identified to indicate those that may be implemented without CAAT prior approval.
- carry out an assessment of competences and of the training needs of staff involved in maintenance activities
- develop and update the training program based on the staff competency assessment and the maintenance tasks performed in relation to the scope of approval
- document and record the training program and its implementation in compliance with CAAT requirements

A small organisation would not be expected to duplicate all of the facilities provided by a large one. Training of staff such as certifying staff, support staff or mechanics may be performed by the maintenance organisation itself or by an Aviation Training Organisation (ATO). However, the maintenance organisation remains responsible that the training delivered is appropriate.

The TPM should:

- include the training syllabus, duration, method of delivery (theoretical, practical “hands-on”, eLearning, etc.), and the prerequisites for attendance
- specify the level of training required for each individual as a function of their experience and to address the work they are expected or authorised to perform. In many cases the work may be complex and require the use of specialised equipment. In such cases, required training may range from on-the-job training (OJT) to formal classroom training and appropriate examinations
- identify procedures to ensure that each employee is capable of performing the assigned task

In addition, the TPM should be made available in English.

## 1.1 Initial Training

*Reference: 145.A.30, 145.A.30(e), 145.A.30(f), 145.A.30 (h), AMC2 145.A.30(e), AMC3 145.A.30(e), AMC5 145.A.30(e), GM6 145.A.30(e), 145.A.35*

A maintenance organisation should provide an orientation and training for each specific position in a minimum of the following subjects:

### Orientation

- Regulations associated with the certificate, operations specifications and related requirements
- Company policies, procedures and practices
- Company manuals (MOE) including quality control processes, particularly those associated with ensuring compliance with maintenance (including inspection), preventive maintenance, and established alteration procedures
- Computer systems and software as applicable (including inspection, preventive maintenance and alteration systems and procedures)
- Facility security

### Training for each specific position

- General review including roles, tasks, and responsibilities
- Shop safety
- Records and record keeping
- Materials and parts
- Test equipment, including ground support equipment
- Tools
- Human factors in aviation maintenance\*
- Safety Management Systems (SMS)\*
- Electrical Wiring Interconnection Systems (EWIS) and Fuel Tank Safety (FTS) (if applicable)\*\*
- Dangerous goods (if applicable)\*\*

Note:

\* Human factors and SMS training can be combined under safety training as detailed in GM1 145.A.30(e)

\*\* See Appendix 1 for details.

## 1.2 Recurrent Training

*Reference: AMC2 145.A.30(e), AMC5 145.A.30(e), 145.A.35(d)*

A maintenance organisation should provide recurrent training for employees on a 2-yearly basis in a minimum of the following areas:

### All employees

- Safety training include SMS and HF (applicable to all positions)
- FTS when relevant (Appendix 1 to AMC3 145.A.30 (e))

### Certifying staff and support staff

- Relevant technology
- Organisational procedures

In addition, the maintenance organisation should provide training on revisions to publications and new items that are relevant to each specific position.

### **1.3 Additional Training**

*Reference: 145.A.30(e), AMC1 145.A.30(e), 145.A.30(f), AMC1 145.A.30(f), Appendix II to TCAR Part 145*

A maintenance organisation training program should have procedures to identify job assignments that will require special skills or have complexity that would require the development of additional training to ensure competency. Some areas that may require additional training include special inspection or test techniques, special machining operations, aircraft inspection techniques, or complex assembly operations.

### **1.4 Remedial Training**

A maintenance organisation should have procedures to evaluate and identify the competency of employees. Where an employee is found to be lacking in knowledge or skill, the maintenance organisation should provide remedial training to rectify that lack of knowledge or skill.

## **2. TRAINING DOCUMENTATION**

### **2.1 Retention of Training Documents**

*Reference: 145.A.55 (d), AMC1 145.A.55(d)*

A maintenance organisation should document required individual employee training and retain those records for a minimum of three (3) years. Records should be stored in a manner to ensure that they are protected from damage, alteration and theft. The documentation format and storage method are not specified but should be detailed in the TPM.

### **2.2 Training Program Basic Components**

*Reference: GM1 145.A.30(e)*

A training program should be detailed in the TPM and should consist of elements appropriately orientated to the requested ratings. It should contain the following elements:

- Needs assessments
- Areas of study and course definitions
- Identification of training sources and methods
- Measurement of effectiveness
- Training documentation



### **3. DOCUMENTATION OF TRAINING COMPETENCY**

*Reference: 145.A.30(e), AMC1 145.A.30(e), GM2 145.A.30(e)*

After the completion of training, the competency of each employee should be assessed and documented in the employee's training records. Any of the following methods may be used depending upon the size of the organisation, its capabilities and the experience of the employees:

- written test;
- completion of a training course;
- skills test;
- group exercise;
- on-the-job assessment; and
- oral examination in the working environment.

## APPENDIX 1 – ADDITIONAL TRAINING

### A Non-Destructive Testing (NDT) Training Program

*Reference: 145.A.30 (f), AMC1 145.A.30(f)*

A maintenance organisation that performs NDT should establish an additional training program for NDT staff. This program must include NDT written procedures which refer to EN4179 and NAS410.

### B Electrical Wiring Interconnection Systems (EWIS) Training Programs

*Reference: 145.A.30(e), AMC3 145.A.30(e), Appendix I to AMC3 145.A.30(e), FAA AC 25-27A, AC 120-94*

A maintenance organisation that performs EWIS should establish an additional training program for EWIS.

### C Fuel Tank Safety (FTS) Training Programs

*Reference: 145.A.30(e), AMC3 145.A.30(e), Appendix I to AMC3 145.A.30(e), FAA SFAR 88*

A maintenance organisation that performs FTS should establish an additional training program for FTS. This training should include Critical Design Configuration Control Limitation (CDCCL) tasks.

### D Dangerous Goods Training Program

A maintenance organisation should have a dangerous goods training program for its employees, whether full time, part time, temporary, or contracted, where they are engaged in the following activities:

- loading, unloading or handling of dangerous goods
- design, manufacture, fabrication, inspection, marking, maintenance, reconditioning, repairs or tests of a package, container or packaging component that is represented, marked, certified, or sold as qualified for use in transporting dangerous goods
- preparation of hazardous materials for transport
- responsibility for the safe transportation of dangerous goods
- operation of a vehicle used to transport dangerous goods
- supervision of any of the above items

An employee should not perform or directly supervise any of the above activities unless they have received the appropriate dangerous goods training, which should ensure that:

- each employee performing or directly supervising any of the activities is trained to comply with all applicable procedures; and
- the trained person is able to recognise items that contain, or may contain, dangerous goods.

## **APPENDIX 2 – TPM TEMPLATE**

Where the TPM is submitted as a separate document, the use of the following template is recommended.

### **COVER PAGE**

The cover page should identify:

- Name of the organisation
- Address of the principal place of business
- National civil aviation authority approval number (for foreign maintenance organisations)
- CAAT certificate approval number (if any)
- Revision status and issue date of the TPM

### **LEP – LIST OF EFFECTIVE PAGES**

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### **PART 3 TRAINING DOCUMENTATION**

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### **PART 4 DOCUMENTATION OF TRAINING COMPETENCY**