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The Civil Aviation Authority of Thailand

# Thailand Civil Aviation Regulation - Personnel Licensing
# Part Approved Aircraft Maintenance Training Organisation
# (TCAR PEL Part - 147)

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Approved By

Air Chief Marshal
Manat Chavanaprayoon
Director General
The Civil Aviation Authority of Thailand

## THAILAND CIVIL AVIATION REGULATION (TCAR)

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## INTRODUCTION AND APPLICABILITY

In this publication the word 'must' or 'shall' is used to indicate where the Director General requires the Organisation, owner or operator to respond to and comply with, or adhere closely to, the defined requirement.

The word 'should' is used to indicate that the Organisation, Owner or Operator has a degree of latitude in adhering to the requirement, particularly where the nature of the operation - or proposed operation - affects their ability to achieve the necessary degree of compliance with the requirement; provided that an acceptable level of safety is achieved.

If the Organisation's/owner's/operator's response is deemed to be inadequate by the Director General, a specific requirement or restriction may be applied as a condition of the appropriate instrument to be issued under Thailand Civil Aviation Regulations.

This TCAR PEL, Part-147, is broadly based upon or derived from European Union Regulation (EU) 1321/2014 amended by up to and including (EU)2015/1088 & 2018/1142.

Air Navigation Act B.E 2497 section 50/13 aplies to the applicant for a personal licence.

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# Section A – Technical Requirements

# Subpart A - General Requirements

## 147.A.05 Scope

This section establishes the requirements to be met by organisations seeking approval to conduct training and examination as specified in TCAR PEL Part-66.

## 147.A.10 General

A training organisation shall be an organisation or part of an organisation registered as a legal entity.

## 147.A.15 Application

(a) An application for an approval or for the change of an existing approval shall be made on a form and in a manner established by the Civil Aviation Authority of Thailand.

(b) An application for an approval or change to an approval shall include at least information : the following

(1) the registered name and address of the applicant;

(2) the address of the organisation requiring the approval or change to the approval;

(3) the intended scope of approval or change to the scope of approval;

(4) the name and signature of the accountable manager;

(5) the date of application.

# Subpart B - Organisational Requirements

## 147.A.100 Facility Requirements

(a) The size and structure of facilities shall ensure protection from the prevailing weather elements and proper operation of all planned training and examination on any particular day.

(b) Fully enclosed appropriate accommodation separate from other facilities shall be provided for the instruction of theory and the conduct of knowledge examinations.

1. The maximum number of students undergoing knowledge training during any training course shall not exceed 28.

2. The size of accommodation for examination purposes shall be such that no student can read the paperwork or computer screen of any other student from his/her position during examinations.

(c) The point (b) accommodation environment shall be maintained such that students are able to concentrate on their studies or examination as appropriate, without undue distraction or discomfort.

(d) In the case of a basic training course, basic training workshops and/or maintenance facilities separate from training classrooms shall be provided for practical instruction appropriate to the planned training course. If, however, the organisation is unable to provide such facilities, arrangements may be made with another organisation to provide such workshops and/or maintenance facilities, in which case a written agreement shall be made with such organization specifying the conditions of access and use thereof. The Civil Aviation Authority of Thailand shall require access to any such contracted organisation and the written agreement shall specify this access.

(e) In the case of an aircraft type/task training course access, shall be provided to appropriate facilities containing examples of aircraft type as specified in 147. A.115(d).

(f) The maximum number of students undergoing practical training during any training course shall not exceed 15 per supervisor or assessor.

(g) Office accommodation shall be provided for instructors, knowledge examiners and practical assessors of a standard to ensure that they can prepare for their duties without undue distraction or discomfort.

(h) Secure storage facilities shall be provided for examination papers and training records. The storage environment shall be such that documents remain in good condition for the retention period as specified in 147.A.125. The storage facilities and office accommodation may be combined, subject to adequate security.

(i) A library shall be provided containing all technical material appropriate to the scope and level of training undertaken.

## 147.A.105 Personnel Requirements

(a) The organisation shall appoint an accountable manager who has corporate authority for ensuring that all training commitments can be financed and carried out to the standard required by this Part.

(b) A person or group of persons, whose responsibilities include ensuring that the maintenance training organisation is in compliance with the requirements of this Part, shall be nominated. Such person(s) must be responsible to the accountable manager. The senior person or one

person from the group of persons may also be the accountable manager subject to meeting the requirements for the accountable manager as defined in point (a).

(c) The maintenance training organisation shall contract sufficient staff to plan/perform knowledge and practical training, conduct knowledge examinations and practical assessments in accordance with the approval.

(d) By derogation to point (c), when another organisation is used to provide practical training and assessments, such other organisation's staff may be nominated to carry out practical training and assessments.

(e) Any person may carry out any combination of the roles of instructor, examiner and assessor, subject to compliance with point (f).

(f) The experience and qualifications of instructors, knowledge examiners and practical assessors shall be established in accordance with criteria published or in accordance with a procedure and to a standard agreed by the Civil Aviation Authority of Thailand (CAAT)

(g) The knowledge examiners and practical assessors shall be specified in the organisation exposition for the acceptance of such staff.

(h) Instructors and knowledge examiners shall undergo updating training at least every 24 months relevant to current technology, practical skills, human factors and the latest training techniques appropriate to the knowledge being trained or examined.

## 147.A.110 Records of Instructors, Examiners and Assessors

(a) The organisation shall maintain a record of all instructors, knowledge examiners and practical assessors. These records shall reflect the experience and qualification, training history and any subsequent training undertaken.

(b) Terms of reference shall be drawn up for all instructors, knowledge examiners and practical assessors.

(c) The organisation shall retain the record of all instructors, knowledge examiners and practical assessors for a period of two years after they have left the training organisation.

## 147.A.115 Instructional Equipment

(a) Each classroom shall have appropriate presentation equipment of a standard that ensures students can easily read presentation text/drawings/diagrams and figures from any position in the classroom. Presentation equipment shall include representative synthetic training devices to assist students in their understanding of the particular subject matter where such devices are considered beneficial for such purposes.

(b) The basic training workshops and/or maintenance facilities as specified in 147.A.100 (d) must have all tools and equipment necessary to perform the approved scope of training.

(c) The basic training workshops and/or maintenance facilities as specified in 147.A.100 (d) must have an appropriate selection of aircraft, engines, aircraft parts and avionic equipment.

(d) The aircraft type training organisation as specified in 147.A.100 (e) must have access to the appropriate aircraft type. Synthetic training devices may be used when such synthetic training devices ensure adequate training standards.

## 147.A.120 Maintenance Training Material

(a) Maintenance training course material shall be provided to the student and cover as applicable:

1. the basic knowledge syllabus specified in TCAR PEL Part-66 for the relevant aircraft maintenance licence category or subcategory and,

2. the type course content required by TCAR PEL Part-66 for the relevant aircraft type and aircraft maintenance licence category or subcategory.

(b) Students shall have access to examples of maintenance documentation and technical information of the library as specified in 147.A.100 (i).

## 147.A.125 Records

The organisation shall keep all student training, examination and assessment records for an unlimited period.

## 147.A.130 Training Procedures and Quality System

(a) The organisation shall establish procedures acceptable to the Civil Aviation Authority of Thailand to ensure proper training standards and compliance with all relevant requirements in this Part.

(b) The organisation shall establish a quality system including:

1. an independent audit function to monitor training standards, the integrity of knowledge examinations and practical assessments, compliance with and adequacy of the procedures, and

2. a feedback system of audit findings to the person(s) and ultimately to the accountable manager referred to in 147.A.105(a) to ensure, as necessary, corrective action.

## 147.A.135 Examinations

(a) The examination staff shall ensure the security of all questions.

(b) Any student found during a knowledge examination to be cheating or in possession of material pertaining to the examination subject other than the examination papers and associated authorised documentation shall be disqualified from taking the examination and may not take any examination for at least 12 months after the date of the incident. The Civil Aviation Authority of Thailand shall be informed of any such incident together with the details of any enquiry within seven days.

(c) Any examiner found during a knowledge examination to be providing question answers to any student being examined shall be disqualified from acting as an examiner and the examination declared void. The Civil Aviation Authority of Thailand must be informed of any such occurrence within seven days.

## 147.A.140 Maintenance Training Organisation Exposition

(a) The organisation shall provide an exposition for use by the organisation describing the organisation and its procedures and containing the following information:

(1) a statement signed by the accountable manager confirming that the maintenance training organisation exposition and any associated manuals define the maintenance training organisation's compliance with this Part and shall be complied with at all times.

(2) the title(s) and name(s) of the person(s) nominated in accordance with 147.A.105(b).

(3) the duties and responsibilities of the person(s) specified in point 2, including matters on which they may deal directly with the Civil Aviation Authority of Thailand on behalf of the maintenance training organisation.

(4) a maintenance training organisation chart showing associated chains of responsibility of the person(s) specified in point (a)(2).

(5) a list of the training instructors, knowledge examiners and practical assessors.

(6) a general description of the training and examination facilities located at each address specified in the maintenance training organisation's approval certificate, and if appropriate any other location, as required by 147.A.145(b).

(7) a list of the maintenance training courses which form the extent of the approval.

(8) the maintenance training organisation's exposition amendment procedure.

(9) the maintenance training organisation's procedures, as required by 147.A.130(a).

(10) the maintenance training organisation's control procedure, as required by 147.A.145(c), when authorised to conduct training, examination and assessments in locations different from those specified in 147.A.145(b).

(11) a list of the locations pursuant to 147.A.145(b).

(12) a list of organisations, if appropriate, as specified in 147.A.145(d).

(b) The maintenance training organisation's exposition and any subsequent amendments shall be approved by the Civil Aviation Authority of Thailand.

(c) Notwithstanding point (b) minor amendments to the exposition may be approved through an exposition procedure (hereinafter called indirect approval).

## 147.A.145 Privileges of the maintenance training organisation.

(a) The maintenance training organisation may carry out the following as permitted by and in accordance with the maintenance training organisation exposition:

1. basic training courses to the TCAR PEL Part-66 syllabus.

2. aircraft type/task training courses in accordance with TCAR PEL Part-66.

3. the examination of students who did not attend the aircraft type training course at the maintenance training organisation;

(b) Training, knowledge examinations and practical assessments may only be carried out at the locations identified in the approval certificate and/or at any location specified in the maintenance training organisation exposition.

(c) By derogation to point (b), the maintenance training organisation may only conduct training, knowledge examinations and practical assessments in locations different from the point (b) locations in accordance with a control procedure specified in the maintenance training organisation exposition. Such locations need not be listed in the maintenance training organisation exposition.

(d) The maintenance training organisation may subcontract the conduct of basic theoretical training, to a non-maintenance training organisation only when under the control of the maintenance training organisation quality system.

1. The subcontracting of basic theoretical training is limited to TCAR PEL Part-66, Appendix I, Modules 1, 2, 3, 4, 5, 6, 8, 9 and 10.

2. The subcontracting of type training and examination is limited to powerplant and avionic systems.

(e) An organisation may not be approved to conduct examinations unless approved to conduct the corresponding training.

(f) By derogation from point (e), an organisation approved to provide basic knowledge training or type training may also be approved to provide type examination in the cases where type training is not required.

## 147.A.150 Changes to the Maintenance Training Organisation

(a) The maintenance training organisation shall notify the Civil Aviation Authority of Thailand of any proposed changes to the organisation that affect the approval before any such change takes place, in order to enable the Civil Aviation Authority of Thailand to determine continued compliance with this Part and to amend if necessary the maintenance training organisation approval certificate.

(b) The Civil Aviation Authority of Thailand may prescribe the conditions under which the maintenance training organisation may operate during such changes unless the Civil Aviation Authority of Thailand determines that the maintenance training organisation approval must be suspended.

(c) Failure to inform the Civil Aviation Authority of Thailand of such changes may result in suspension or revocation of the maintenance training organisation approval certificate backdated to the actual date of the changes.

## 147.A.155 Continued Validity

(a) An approval shall be issued for 3 years. It shall remain valid subject to:

1. the organisation remaining in compliance with this Part and
2. the Civil Aviation Authority of Thailand being granted access to the organisation to determine continued compliance with this Annex (Part-147); and
3. the certificate not being surrendered or revoked.

(b) Upon surrender or revocation, the approval shall be returned to the Civil Aviation Authority of Thailand.

## 147.A.160 Findings

(a) A level 1 finding is one or more of the following:

1. any significant non-compliance with the examination process which would invalidate the examination(s),
2. failure to give the Civil Aviation Authority of Thailand access to the organisation's facilities during normal operating hours after two written requests,
3. the lack of an accountable manager,
4. a significant non-compliance with the training process.

(b) A level 2 finding is any non-compliance with the training process other than level 1 findings.

(c) After receipt of notification of findings the holder of the maintenance training organisation approval shall define a corrective action plan and demonstrate corrective action to the satisfaction of the Civil Aviation Authority of Thailand within a period agreed with the Authority.

# Subpart C - The Approved Basic Training Course

## 147.A.200 The Approved Basic Training Course

(a) The approved basic training course shall consist of knowledge training, knowledge examination, practical training and a practical assessment.

(b) The knowledge training element shall cover the subject matter applicable to the relevant category or subcategory of aircraft maintenance licence specified in TCAR PEL Part-66.

(c) The knowledge examination element shall cover a representative cross-section of the subject matter included in the knowledge training element specified in point (b).

(d) The practical training element shall cover the practical use of common tools and equipment, the disassembly and assembly of a representative selection of aircraft parts, and participation in representative maintenance activities relevant to the applicable complete module of TCAR PEL Part-66.

(e) The practical assessment element shall cover the practical training and shall determine whether the trainee is competent to use tools and equipment and to work in accordance with maintenance manuals and other applicable instructions.

(f) The duration of a basic training course shall comply with Appendix I to this Part.

(g) Notwithstanding point (f), the number of training hours specified in Appendix I may be amended to take account of changes in training technologies or methods, provided that:

(1) the complete syllabus content and applicable training objectives are covered;

(2) the course syllabus and training schedule describe and justify the proposed changes;

(3) the maintenance training organisation exposition contains a procedure for assessing and justifying such changes; and

(4) the amended course duration is approved by the CAAT.

(h) The duration of a conversion course between categories or subcategories shall be determined through an assessment of the differences between the applicable basic training syllabi and the related practical-training requirements.

(i) A trainee shall not be considered to have successfully completed the approved basic training course, and a certificate of course completion shall not be issued, unless the trainee has successfully completed all applicable:

(1) knowledge training;

(2) knowledge examinations;

(3) practical training; and

(4) practical assessments.

## 147.A.205 Basic knowledge examinations

(a) Basic knowledge examinations conducted by the maintenance training organisation shall comply with the examination standard specified in Appendix II to TCAR PEL Part-66.

(b) The examinations shall be conducted without the use of training notes.

(c) The examinations shall cover a representative cross-section of the subjects included in the particular module of training completed in accordance with Appendix I to TCAR PEL Part-66.

(d) Unless conducted under an authorisation granted by the CAAT for Part-66 licensing purposes, a basic knowledge examination conducted by the maintenance training organisation shall:

(1) be used only to determine successful completion of the approved basic training course;

(2) not constitute a Part-66 basic knowledge examination for licensing purposes; and

(3) not exempt the trainee from any basic knowledge examination required by the CAAT.

## 147.A.210 Basic Practical Assessment

(a) Basic practical assessments shall be conducted during the approved basic maintenance training course by nominated practical assessors at the completion of each applicable period of training in the practical workshop or maintenance facility.

(b) The trainee shall achieve an assessed pass against the practical competence requirements specified in 147.A.200(e).

(c) A basic practical assessment conducted under points (a) and (b) shall be used to determine successful completion of the approved basic training course and shall not, by itself, constitute a practical assessment accepted for Part-66 licensing purposes.

(d) Notwithstanding point (c), a basic practical assessment may also be accepted for Part-66 licensing purposes where:

(1) the maintenance training organisation and practical assessor are authorised by the CAAT to conduct the assessment for licensing purposes in accordance with the applicable CAAT regulation;

(2) the assessment is conducted within the scope and conditions of that authorisation; and

(3) the assessment result is submitted to and accepted by the CAAT.

(e) Where the requirements of point (d) are met, the same practical assessment may be used to satisfy both:

(1) the practical assessment requirement for completion of the approved basic training course; and

(2) the practical assessment requirement for Part-66 licensing purposes.

# Subpart D - Aircraft Type Training

## 147.A.300 Aircraft Type Training

A maintenance training organisation shall be approved to carry out TCAR PEL Part-66 aircraft type and/or task training subject to compliance with the standard specified in TCAR PEL Part-66, 66.A.45.

## 147.A.305 Aircraft Type Examinations and Assessments

A maintenance training organisation approved in accordance with 147.A.300 to conduct aircraft type training shall conduct the aircraft type examinations or aircraft task assessments specified in TCAR PEL Part-66 subject to compliance with the aircraft type and/or task standard specified in TCAR PEL Part-66, 66.A.45.

# Appendix I - Basic Training Course Duration

The Minimum duration of a complete basic training course shall be as follows:

| Basic Course | Duration (in hours) | Theoretical training ratio (in %) |
|---|---|---|
| A1 | 800 | 30 TO 35 |
| A2 | 650 | 30 TO 35 |
| A3 | 800 | 30 TO 35 |
| A4 | 800 | 30 TO 35 |
| B1.1 | 2400 | 50 TO 60 |
| B1.2 | 2000 | 50 TO 60 |
| B1.3 | 2400 | 50 TO 60 |
| B1.4 | 2400 | 50 TO 60 |
| B2 | 2400 | 50 TO 60 |
| B3 | 1000 | 50 TO 60 |