

GUIDANCE MATERIAL FOR DEVELOPMENT OF MAINTENANCE TRAINING ORGANISATION EXPOSITION (MTOE)

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Approved by

Suttipong Kongpool Director General The Civil Aviation Authority of Thailand Intentionally Left Blank



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0. INTRODUCTION

0.1 Background & Purpose

The present Guide Material (GM) provides general guidelines related to the compilation of the Maintenance Training Organisation's Exposition (MTOE).

It also includes the MTOE template to be used by a maintenance training organization (MTO) applying for a Part 147 approval.

The MTOE and its associated documents form the baseline for the MTO to demonstrate how it complies with applicable regulatory requirements, and these documents will subsequently be used by the CAAT inspector as the reference documentation when carrying oversight audits.

The MTOE is in principle a standalone document that should contain all the necessary information at an adequate level of detail so to enable the reader to quickly understand the structure of the MTO, its processes and the process owners.

It is however accepted that the MTOE contains less information when it is complemented by:

- a set of detailed Associated Procedures,
- Associated lists (e.g. the list of instructional and examination staff, the list of sub-contractors etc....),
- Appendices or associated manuals, for instance a manual containing samples of the forms used by the MTO.

Note: Such structure would typically be used by:

- Large MTO having frequent changes of the instructional staff list, etc...
- MTO holding approvals from several Authorities and having developed common detailed procedures so to facilitate the enforcement of procedures by the staff and to avoid a complex documentary system possibly generating inconsistencies.

The MTOE should however not become an "empty shell" and should still contain sufficient information for the surveyor to verify that the MTO has established acceptable processes in order to comply with applicable regulations. An adequate balance in the level of information must therefore be ensured between the MTOE itself and the associated procedures.

The MTOE shall contain a reference to the associated procedures, lists and to any other major document being managed separately. It is not required that the reference includes the amendment level of the associated documents provided the MTO has developed a "control procedure" and maintains an updated index of all associated documents. Such control procedure must be described in the MTOE and accepted by the surveyor.

0.2 Applicability

This Guidance Material (GM) is applicable to Part 147 applicants and Part 147 MTOs regardless of whether their principal place of business is located within Thailand or other countries. The provisions of this GM are complementary to the MTO certification requirements detailed in Part 147 and do not supersede or replace any associated regulatory requirements.



0.3 Reference

- Air Navigation Act B.E. 2497
- Regulation of Civil Aviation Board (RCAB) No. 77 Qualification and Privileges of Applicants for Aircraft Maintenance Engineers
- Notification of the Department of Civil Aviation for Approval of Maintenance Training Organisations and Approval of Maintenance Training Courses B.E. 2551



1. GENERAL GUIDANCE

1.1 **Preliminary Considerations**

The MTOE should be customised by each Maintenance Training Organisation (MTO) to demonstrate how they comply with Part 147.

For each detailed procedure described within the MTOE, the MTO should address the following questions:

- What must be done?
- Who must do it?
- When must it be done?
- Where must it be done?
- How must it be done?
- Which procedures and forms must be used?

The MTO may choose to use another format to the one described in this GM, as long as all the applicable sections of the regulation are addressed and cross-referenced.

1.2 **Exposition Language and Format**

The MTOE should be in English and may be produced in hardcopy or electronic format:

- Hardcopy: Use A4 format in a binder with section dividers. Recto/verso can be used.
- Electronic format: Use Portable Document Format (PDF) with a printed copy delivered to CAAT to facilitate the document review.

1.3 Terms in Use

The following terms are used in this GM:

- MTOE Part is used to identify the main parts of the MTOE (e.g. Part 1 Management, Part 2 Training and Examination Procedures, Part 3 Training System Quality Procedures, Part 4 Appendices).
- MTOE chapter is used to identify each chapter within an MTOE Part (e.g. MTOE 1.2 Management personnel, MOE 3.2 Audit of examinations).
- MTOE paragraph is used to identify a paragraph within an MTOE chapter (e.g. MTOE 3.2.1).
 At the paragraph level the numbering system is not pre-identified in Part 147 and it is left to the needs of the MTO. Further division to sub-paragraphs may be also used.

1.4 MTOE GM Writing Conventions

To facilitate the reading and understanding of this GM, the following writing conventions apply to each MTOE chapter:



Item	Location	Format	Remark
Expected content of the MTOE	After each MTOE heading as applicable	Normal font	It is the responsibility of the MTO to identify the "expected content" applicable to that maintenance training organisation. When an "MTOE paragraph" is identified in this GM, the same paragraph structure is expected to be found in the MTOE.
Examples	Where appropriate	Normal font	-
Track changes	Where appropriate	In blue color text, identified by a vertical bar on the left-hand side of the page. (Not applicable to the initial issue)	-

1.5 Structure of the Maintenance Training Organisation Exposition (MTOE)

The MTOE may be produced in the form of a single document or may consist of several separate documents.

- Single document: An MTOE is a unique and complete document. It must contain all the information required to show compliance with the regulation including detailed procedures and detailed quality system procedures.
- Several documents: An MTOE must contain at least the information. The additional material may be published in separate documents which must be referenced from the MTOE. In this case:
 - The MTOE must cross refer to the associated procedures, documents, appendices, forms and all other lists which are managed separately. Therefore, the MTOE chapter 1.11 is expected to summarise the associated procedures and/or list references (refer to MTOE chapter 1.11 for further guidance);
 - Associated documents must meet the same rules as described for the MTOE and must not refer to any foreign approval; and
 - Associated documents, procedures, forms, etc., must be provided to CAAT.

An MTOE should contain information demonstrating compliance to the regulation. An MTOE chapter referring only to an associated procedure is not acceptable.

For some MTO, certain sections of the headings may be 'not applicable'. In this case, they should be annotated as such within the MTOE.

MTO are strongly recommended to follow the MTOE structure described in this GM. A different structure may result in additional processing time.



1.5.1 Management Control of the MTOE

In order to properly monitor the approval, it is essential that the MTO clearly identifies the initial edition of the MTOE and each subsequent change. Any change to an approved MTOE should be identified, depending upon the numbering system chosen, by:

- A new Issue and/or Revision number
- A new Issue and/or Revision date
- Clear identification of the modified text in each MTOE chapter or paragraph (e.g. using vertical bars and highlighting the changed text with a specific colour)

MTOE chapter 1.11 is intended to detail the methods chosen to identify changes to the MTOE (e.g. Issue or Revision number and vertical bars). In particular, depending upon the complexity and needs of the MTO, one of the two following possibilities is recommended:

Option 1: MTOE identified by both an Issue number and Revision number

This option is intended to use two different numbering systems (Issue and Revision numbers). In particular, each time the Issue number is changed, the Revision number will start again from "0". The following table is given as an example:

Issue Number	Issue Date	Revision Number	Revision Date	
1		0	01 Jan 2020	
ے (Initial)	01 Jan 2020	1	17 Feb 2020	
(initial)		2	25 Mar 2020	
	20 Apr 2020		0	20 Apr 2020
2		1	10 May 2020	
		2	15 Jun 2020	

Option 2: MTOE identified only by a Revision (or Issue) number

Any change to the MTOE will be identified only by a change in the Revision or Issue number. The Revision or Issue numbering will start with "0" and increase at each revision, along with a Revision (or Issue) date. The following table is given as an example:

Revision (or Issue) Number	Revision (or Issue) Date
0 (Initial)	01 Jan 2020
1	15 Feb 2020
2	25 Mar 2020

1.5.2 Management Control of the MTOE

Depending upon the MTOE revision identification option chosen, each page of the MTOE, in the header or footer, should be identified as follows:

- Name of the MTO (official name)
- Name of the document "Maintenance Training Organisation Exposition"
- Issue number of the MTOE
- Issue date
- Revision number of the MTOE
- Revision date
- Chapter of the MTOE (e.g. 1-5)
- Page number



The cover page of the MTOE should specify:

- Title "Part 147 Maintenance Training Organisation Exposition"
- Unique identification number given to the MTOE (e.g. MTONAME-CAAT-DOC1):
 - Unique identification number is expected for each document which is part of the CAAT approval (refer to MTOE chapter 1.11). It is particularly helpful when managing electronic approvals of documents.
- Name of the MTO (official name)
- Address, telephone, fax numbers and the generic e-mail address of the Principal Place of Business (PPB) of the MTO
- Copy number from the distribution list
- Repair station certificate number (if applicable)

1.6 MTOE Initial Approval Process

1.6.1 First Submission of the Draft MTOE

Prior to submission of the draft MTOE, the accountable manager must sign and date the Corporate Commitment statement (MTOE chapter 1.1). This confirms that the accountable manager has read the document and understood the responsibilities under the approval. In the case of change of the accountable manager, the new manager must sign the document and submit a suitable amendment for approval.

1.6.2 Tracking Changes to the Initial Draft MTOE

Following receipt of the first draft MTOE, CAAT will review and provide comments via CAAT-EMPIC to the MTO.

After the receipt of comments, the MTO is expected to revise the first draft and produce a second draft MTOE, where all the comments have been addressed. In order to have a clear tracking of the changes and to allow the review of the revised MTOE by CAAT, the following is expected;

- The MTO must reply to each comment via CAAT-EMPIC, explaining how it has been addressed and in which MTOE chapter/paragraph.
- The MTO must issue a second draft MTOE, which clearly identifies the changes introduced. This could be done by:
 - Maintaining the MTOE draft identified as initial (i.e. Issue 1, Rev. 0), but changing the date to identify the new draft issued; and
 - Identifying clearly the text modified in each MTOE chapter/paragraph (using vertical bars, highlighting with a specific colour the changed text, etc.).

This process will be continued with the issue of a third, fourth, etc. draft MTOE, until the MTOE is considered acceptable in order to proceed further with the document evaluation process.

The same procedure applies to documents associated with the MTOE, such as procedures and lists subject to CAAT approval.



2. MTOE STRUCTURE AND CONTENT

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LIST OF EFFECTIVE PAGES

This section should include the list of effective pages of the complete manual. The list may be prepared in the following manner.

Page No.	Revision	Date



AMENDMENT RECORD

This section should set out the amendment record of the exposition. The amendment record may be in the following form.

Amendment No.	Date	Amendment Details	Amended by	Date of Inclusion



DISTRIBUTION LIST

This section should include a distribution list to ensure proper distribution of the exposition and to demonstrate to the Civil Aviation Authority of Thailand (CAAT) that all personnel involved in MTOs have access to the relevant information. This does not mean that all personnel have to be in receipt of a complete exposition but that a reasonable number of copies are distributed within the organisation(s) so that personnel may have quick and easy access to this exposition.

Alternately, if the manual is available electronically then this section should set out how the electronic version is available throughout the organisation and to individuals outside the organisations.

Following is an example distribution list for hard copies

Сору No.	Holder



ABBREVIATIONS, ACRONYMS AND DEFINITIONS

This section should set out the meaning of any abbreviations, acronyms and unique terms used in the exposition. For example:

AD	. Airworthiness Directive
AOC	. Air Operator's Certificate
AOG	. Aircraft on Ground
ATA	. Air Transport Association
BITE	. Built in Test Equipment
CAAT	. Civil Aviation Authority of Thailand
C of A	. Certificate of Airworthiness
CRS	. Certificate of Release to Service
MEL	. Minimum Equipment List
MO	. Maintenance Organisation
MTOE	. Maintenance Training Organisation Exposition
MPD	. Maintenance Planning Document
MP	. Maintenance Programme
MTO	. Maintenance Training Organisation
RPL	. Recognition of Prior Learning
SB	. Service Bulletin



FOREWORD

The following is an example of possible foreword:

This exposition has been prepared by **[ORGANISATION NAME]** in accordance with Part 147. The body of this exposition is divided into four parts:

PART 1MANAGEMENTPART 2TRAINING AND ASSESSMENT PROCEDURESPART 3TRAINING SYSTEM QUALITY PROCEDURESPART 4APPENDICES



PART 1 - MANAGEMENT

1.1 CORPORATE COMMITMENT BY THE ACCOUNTABLE MANAGER

Part 147 – MTO Exposition

This exposition defines the organisation and procedures upon which the TCAR-PEL Part 147 MTO approval is based.

It is accepted that these procedures do not override the necessity of complying with any new or amended regulation published by CAAT from time to time where these new or amended regulations are in conflict with these procedures.

It is understood that CAAT will approve this organisation whilst CAAT is satisfied that the procedures are being followed. It is understood that CAAT reserves the right to suspend, vary or revoke the Part 147 MTO approval of the organisation, as applicable, if CAAT has evidence that the procedures are not followed and the standards not upheld.

These procedures are approved by the undersigned and must be complied with, as applicable, whenever knowledge or practical training is being progressed under the terms of the Part 147 MTO approval.

The undersigned fully accepts the duties and responsibilities of Accountable Manager as defined in paragraph 1.3.1 of this exposition.

Signed	
Accountable Manager	
For and on behalf of	

Note: The Accountable Manager's exposition statement should embrace the intent of the above paragraphs and in fact this statement may be used without amendment. Any modification to the statement should not alter the intent.

An alternative available to any organisation where the person who would normally be the Accountable Manager, by virtue of his/her position in the company/organisation, wishes to delegate some of the duties and responsibilities to another Manager.

The duties of the Accountable Manager, as defined in the exposition for the purposes of the TCAR-PEL Part 147 MTO approval, are delegated by the Accountable Manager to the:

Accountable	Manager's	name
and signature		
State position in Organisation		

For the Delegated Accountable Manager:



1.2 MANAGEMENT PERSONNEL

Accountable Manager	 (Insert Name)
Training Manager	 (Insert Name)
Quality Manager -	 (Insert Name)
Assessment Manager	 (Insert Name)
Another (as required)	 (Insert Name)

1.3 DUTIES AND RESPONSIBILITIES OF MANAGEMENT PERSONNEL

The following are only suggested examples of duties and responsibilities of management personnel.

□ Accountable Manager

The Accountable Manager is responsible for:

- ensuring that all instruction and assessments carried out by the organisation meets the standards required by CAAT;
- ensuring that the necessary finance, manpower resources and facilities are available to enable the organisation to perform the knowledge and/or practical instruction and assessments to which it is committed under the requirements Part 147 MTO;
- chairing the annual meeting of senior staff to review the overall performance of the organisation;
- ensuring that any charges are paid, as prescribed by CAAT;
- ensuring that during periods of absence, control will be maintained for administration purposes by (Insert name/position in organisation), who will accept full responsibility for all training issues and related decisions; and
- The operation of (insert name of organisation) is efficiently managed and conforms to the requirements of Part 147 MTO.

Note: (not for inclusion in the Exposition)

Any additional duties and responsibilities within the organisation may be added or delegated.

The organisation should decide who will be responsible for liaison with CAAT and record this responsibility in the position description. If more than one person is nominated it must be clearly shown what each person is responsible for, as a general rule, with no overlapping of responsibilities

□ The Training Manager

The Training Manager will undertake:

- the responsibilities of the nominated person at (insert name of organisation);
- the duties and responsibilities of the Part 147 MTO approved examiner during any absence of the nominated person(s); and
- the delegated duties and responsibilities of the Accountable Manager during prolonged absence.

The Training Manager will ensure that:

- the Accountable Manager is kept informed as to the state of compliance of the organisation with Part 147 MTO;
- the operation of (insert name of organisation) is efficiently managed and conforms to the requirements of Part 147 MTO;



- sufficient staff with appropriate qualifications is selected, trained and developed to plan, perform, supervise, examine and assess students as required;
- all necessary Airworthiness data published by relevant National Airworthiness Authorities and aircraft manufacturers as appropriate is made available;
- all changes to the exposition and associated manuals are notified immediately to CAAT;
- the exposition and associated manuals are amended as required;
- knowledge examiners, instructors and assessors are fully trained and assessed regularly for competence and that all records pertaining to these personnel are kept up to date;
- the personnel responsible for the conduct of Recognition of Prior Learning (RPL) activities (knowledge and practical) are aware of and follow the RPL procedures;
- sub-contract staff including any part time staff conform to the requirements of Part 147 MTO and the training procedures;
- office accommodation and facilities are available appropriate to the management of the planned training and for the use of training staff;
- staff development and update training is undertaken and recorded;
- all approved courses and assessments are delivered to the standard and content at the required level of knowledge, as specified in Part 147 MTO;
- a working environment is provided appropriate to the tasks being undertaken;
- there are sufficient storage facilities, tools, equipment, materials and publications available to perform the planned practical tasks;
- secure facilities are available for the storage of assessment papers prior to the assessment and for the storage of completed students answer papers;
- the interviewing of students prior to, during and on completion of the course is effective and without bias;
- student and staff records are produced and stored in secure conditions;
- any person to whom any of these responsibilities may be delegated is aware of current regulations;
- corrective action is carried out for the findings of quality audits;
- follow up and rectification of findings required to re-establish the required standards of training, assessment or maintenance standards is carried out;
- initially sufficient questions are available to produce three separate assessment papers with a maximum of 20% commonality. Further assessment questions should be developed to produce one additional assessment paper per course, up to a maximum of five papers. Questions utilised for progress assessments (phase tests) should not be used in the final assessment;
- the security and validity of all assessments are in accordance with the requirements of Part 147 MTO;
- all assessment timetables are co-ordinated; and
- compliance with the assessment question review procedures is carried out as required by Part 147 MTO.

Note: This paragraph should emphasise that the nominated Training Manager is responsible in ensuring that all training is carried out to an approved standard and describes the extent of his authority in regards their Part 147 MTO responsibility.

These duties may be adjusted to suit the requirements of the Part 147 MTO but should not detract from the particular requirements of Part 147 MTO.

□ The Quality Manager

The Quality Manager has direct access to the Accountable Manager in the event of any reported discrepancy not being adequately attended to by the relevant person, or in



respect of any disagreement over the nature of the discrepancy. The Quality Manager is responsible for:

- establishing an independent quality system to monitor compliance with Part 147 MTO requirements;
- implementing a quality audit programme in which compliance with all training procedures is reviewed at regular intervals and any observed non-compliances or poor standards are brought to the attention of the person concerned via his/her manager;
- proposing all corrective action necessary for eliminating non-compliance, and ensuring that these corrective actions are initiated and when completed are efficient and meet their intended purpose;
- requiring remedial action, as necessary, by the Training Manager or the Accountable Manager; and
- ensuring that the exposition and associated manuals are amended as required.

Note: These duties may be adjusted to suit the requirements of the Part 147 MTO but should not detract from the particular requirements of Part 147.

It must be remembered that that the quality audit system is required to be independent and where possible the Quality Manager and quality audit personnel should not be directly involved in the training process. Where, for reasons of expediency, it is necessary to utilise training staff, it would then become necessary for a second member of staff to be nominated to audit those functions performed by the Quality Manager.

□ The Responsible Manager - Deputy Training

The Deputy Training Manager will undertake the duties and responsibilities of the Training Manager during any prolonged absence.

□ The Responsible Manager - Examiner

The Examiner is responsible for:

- the selection of assessment questions/papers to be sat, appropriate to the particular phase of the training course;
- the invigilation of assessments, ensuring that the conditions for assessment comply section of the Part 147;
- the allocation of assessment papers at the beginning of the assessment and retrieval of them on completion; and
- Marking of the assessment papers using acceptable marking standards.

□ Instructor

The Instructor will:

- carry out instructional duties for which he/she is qualified (basic/type);
- compile questions for assessment banks for which they are qualified; and
- undertake duties of invigilator where they are not involved in the instruction of that particular phase assessment.

□ Practical/Competency assessor

The Practical/Competency assessor is responsible for monitoring and assessing students during pre-set practical tasks and/or hand skills. This includes handling of tools and calibration equipment.

Note: This paragraph should emphasise that the nominated post holder for examiner is responsible to ensure that all assessments are carried out to an approved standard and describes



the extent of their authority in regards to the Part 147 MTO responsibility. These duties may be adjusted to suit the requirements of the Part 147 MTO but should not detract from the particular requirements of the Part 147 MTO.

1.4 MANAGEMENT PERSONNEL ORGANISATION CHART

A flow chart should provide a comprehensive understanding of the whole MTO. It should give further details on the management system, and should clearly show the independence of the quality monitoring system, including the links between the Quality assurance department and the other departments. This flow chart may be combined or subdivided as necessary, depending on the size and the complexity of the organisation.

1.5 LIST OF INSTRUCTIONAL AND ASSESSOR STAFF

This paragraph should give broad figures to show that the number of people dedicated to the performance of the approved training activity is adequate. It is not necessary to give the detailed number of employees of the whole company but only the number of those involved in training.

This could be presented as follows:

Appointment	Name	Competencies
Manager - Training		Enter here those areas each person
Manager - Quality		is qualified to instruct by module/
Manager – Examiner/Assessor		sub modules
Examiner/Instructor		
Instructor		OR
Instructor		
Instructor		Type of aircraft and the specific
Instructor/Invigilator		areas he/she is qualified to instruct
Invigilator		i.e. Powerplant, Structural,
Practical/Competency Assessor		Mechanical, Electrical, Avionics.

Note: According to the size and complexity of the organisation, this table may be further developed.

The Part 147 MTO examiners are the only persons allowed to produce/select assessment papers. They may nominate other persons to mark completed assessments. The examiners and these persons should be other than the knowledge instructors involved in the instruction of that particular module/sub-module.

1.6 LIST OF APPROVED ADDRESS(S)

This paragraph should list those address(s) at which instruction and/or practical training are to be carried out for the duration of the Part 147 MTO course.

The names, address(s) and approval numbers of any proposed Aircraft Maintenance Organisation or Part 145 (or equivalent) organisation at which it is proposed to carry out student practical training in order to fulfil the requirements of Part 147 may be kept in another document or procedure and cross referenced here.

1.7 LIST OF SUB-CONTRACTORS

This paragraph should list those address(s) at which training beyond the capacity of the Part 147 MTO may be carried out.



1.8 GENERAL DESCRIPTION OF FACILITIES AT PARAGRAPH 1.6 ADDRESS(S)

Include here the facilities such as desks, chairs, lockers, overhead projectors, other teaching aids etc. for each of the offices, classrooms, practical training workshops and assessment rooms provided.

1.9 SPECIFIC LIST OF COURSES APPROVED BY THE AUTHORITY

This paragraph must contain a list of the Part 147 MTO course(s) for which approval is held. This should also include 'Differences' courses.

e.g. Airbus A319/320/321 (CFM 56) B1 - differences to A319/320/321 (V2500) B1.

1.10 NOTIFICATION PROCEDURES REGARDING CHANGES TO ORGANISATION

Include any cross references here to the intended procedures for continued validity of the approval in compliance with the requirements of the Part 147.

The organisations 'nominated person' is responsible for informing CAAT of any proposed changes.

1.11 EXPOSITION AND ASSOCIATED MANUALS AMENDMENT PROCEDURE

Detail here or cross reference the procedures to be followed for the amendment of the exposition and any associated procedures and or documents.



PART 2 - TRAINING AND ASSESSMENT PROCEDURES

2.1 ORGANISATION OF COURSES

For category training courses (A, B1 and B2) this should be a high-level document detailing the course content, when each training module is to be taught and to what level. This should include the knowledge, practical and 'on job' training elements and training durations.

For Aircraft Type Training courses this should be a high-level document detailing the course content and its level (for example ATA Specification 104), when each engineering trade knowledge is to be taught, simulator or computer-based teaching sessions and aircraft visits.

The documents above may be cross referenced to a low-level document in which the syllabus can be sub-divided into a more detailed description with the required levels of instruction also being detailed.

2.2 PREPARATION OF COURSE MATERIAL

Training material should meet the requirements of the Part 147 but, as an example ATA specification 104 could be used as a guideline for the production of basic/type training manuals. Cross references to a separate procedure which details the standard course lecture notes are produced which would include content, indexing, chapter and page numbering, font, etc. This same procedure should also be utilised to list the responsibilities by the Part 147 training module for the production, review and amendment of lecture notes.

Include cross references to any procedures used for the inclusion of other course material e.g. Aircraft Manuals, publications and/or standard text books used for note preparation and available to students as reference material.

The course plan must set out for each course:

- a. the modules offered for the course; and
- b. for each of those modules:
 - (i) course objectives/learning outcomes;
 - (ii) the topics to be covered;
 - (iii) the hours of tuition and training;
 - (iv) assessment criteria;
 - (v) the method selected by the organisation for assessing that the course objectives have been met by a student. If this includes assessments then assessment library(ies); or assessment papers for each course will need to be supplied;
 - (vi) student to instructor ratios;
 - (vii) course entry criteria;
 - (viii) conditions under which the course will be conducted; and
 - (ix) course notes.

2.3 PREPARATION OF CLASSROOMS AND EQUIPMENT

Cross reference to any procedures for the preparation of classrooms and reporting of faults to any classroom equipment, general maintenance procedures and the control of the teaching environment.



2.4 PREPARATION OF WORKSHOP/MAINTENANCE FACILITIES AND EQUIPMENT

Cross reference to any procedures for the reporting of faults to any workshop equipment, general maintenance procedures and the control of the teaching environment.

Cross reference to the procedures for the ordering and storage of aircraft release standard consumable materials used in the production of practical tasks and for the ordering and acquisition of any new equipment required to complete the tasks.

Cross reference to procedures for ensuring that all test equipment and/or tooling requiring calibration are correctly forecast and expedited.

Also, cross reference to procedures for ensuring that all electrical equipment power supply feeder cables (from wall socket to equipment) throughout the organisation are tested as required.

2.5 CONDUCT OF BASIC/TYPE KNOWLEDGE AND PRACTICAL TRAINING

Describe the method utilised in teaching the Basic/Type knowledge and practical training courses for which the organisation is approved.

Cross reference to the low-level document referred to in 2.1 above.

2.6 RECORDS OF TRAINING CARRIED OUT

Cross reference to procedures for the production, maintenance and security of student files.

These should include details of all student attendances, final knowledge and practical assessments and any re-assessment carried out and their results by Part 66, complete module for Basic Licence courses and for Type Training, information of those courses completed and their content and at which levels they were instructed and examined.

There should also be reference to the Basic work experience records required to be kept by the student whilst they are undergoing live operating aircraft experience.

2.7 STORAGE OF RECORDS

Cross reference the procedures for the storage of staff and students records. These may be electronically based provided that adequate safeguards are in place to prevent unauthorised access and alteration.

2.8 TRAINING AT LOCATIONS NOT LISTED IN PARAGRAPH 1.6

Should the Management wish to contract out part of the practical training (not including live operating aircraft experience) control procedures must be in place. These procedures should effectively reflect those of CAAT in auditing the Part 147 MTO.

Any training carried out at address not listed at paragraph 1.6 above must be approved by CAAT and control procedures must be in place to ensure that the proposed contract organisation is in compliance with the requirements of Part 147 MTO.

A contract must be in place with the proposed organisation in which it is agreed that access is granted to CAAT for the purpose of Audit.

2.9 ORGANISATION OF ASSESSMENTS Category Courses

For a basic category outcome course, a high-level document detailing the course sequence of assessments for each TCAR-PEL Part 66 module along with the acknowledgement of the level of training.



This should include the knowledge, practical and 'on the job' training elements and the number of hours projected to achieve the training outcome.

Aircraft Type Courses

For aircraft type training the course syllabus should be used when preparing the associated assessment Appendix to the course training package. The assessment Appendix should detail the assessments to be set at the end of logical sequences of delivery or major phases of training.

Assessments may be multiple-choice style phase questions. The theoretical elements of training being examined could include relevant defect rectification, use of manuals, inspections, test equipment, BITE, knowledge of applicable Airworthiness Directives or relevant service information.

If written phase assessments are used, the format of the final assessment should be proposed by the Part 147 MTO and could be an oral assessment, simulator assessment or by essay style questioning.

2.10 SECURITY AND PREPARATION OF ASSESSMENT MATERIAL

Detail the preparation and security of assessment paper and the numbers of questions per Module/sub-module proposed. Note, where it is proposed to examine a Module using more than one assessment (Modules 7, 11 and 13 are permitted) it is required that a larger number of questions be asked (25% increase).

Cross reference the procedures for the production of assessment questions, their validation and security of the data bank.

For Type training it is sufficient to detail the preparation and security procedures in place for the production and storage of assessment papers.

2.11 PREPARATION OF ASSESSMENT ROOMS

Cross reference the procedures to be followed by the Examiner and Invigilator in preparing the assessment room for assessors.

An invigilator's ready reference sheet for briefing the candidates prior to the assessment should be available in procedures and cross referenced here.

2.12 CONDUCT OF ASSESSMENTS

Any student found during a knowledge assessment to be cheating or in possession of material pertaining to the subject of the assessment, other than that supplied for the assessment, will be disqualified from passing the assessment and may not then retake the assessment for at least 12 months from the day of the declaration that the student's assessment is void.

Any examiner/invigilator found to be providing answers to assessment questions to any student will be immediately disqualified from acting as an examiner/invigilator by the MTO. The MTO must declare the assessment void and as soon as practicable but within 28 days from the disqualification of the incident, notify CAAT.

Candidates should only be identified by a numbering system, with the only identifying document being held by the nominated Examiner.

Assessment paper security should be assured by a numbering system e.g. "1 of 15".



A procedure should be in place for checking that all the pages of each assessment paper are completed at assessment completion and that all assessment papers are accounted for.

Both the written element and the multiple-choice question elements should be marked to 75% with no penalty marking.

Only the actual assessment/answer paper is permitted to be on the candidate's desk.

If wall charts and/or other visual teaching aids are to be utilised as part of the assessment process – then the use of the aids for assessment purposes needs to be described.

2.13 CONDUCT OF BASIC CATEGORY OR TYPE PRACTICAL ASSESSMENTS

Cross reference the procedures used for assessment of student hand skills, and the standard tasks set throughout the course. A set number of mandatory tasks should be assessed to have been completed to a satisfactory standard.

Use TCAR-PEL Part 147 Acceptable Means of Compliance material when preparing descriptions of the way in which practical training and assessment will be conducted for type training outcomes.

2.14 MARKING AND RECORDS OF ASSESSMENTS AND ASSESSMENTS

Cross reference the procedures for the marking of completed assessment papers and the recording of results.

Cross reference the procedure for practical assessments and recording of results.

Where an assessment is a part module (Modules 7, 11 and 13) the start of the effective period (five years) begins on the date of passing the first of the part module.

2.15 STORAGE OF ASSESSMENT RESULTS

A copy of each assessment paper, the student number/identification list, a practical task results list, an assessment results list and all assessment papers for each complete module must be stored for a period of five years.

Electronic means of storage may be utilised as required, provided the usual computer security systems are in place. **ASSESSMENTS CONDUCTED AT LOCATIONS NOT LISTED IN PARAGRAPH 1.6** Cross reference the control procedure in common with part 2.8 above. This location must comply with the requirements of 2.10, 2.11, 2.12, 2.13, 2.14 and 2.15 above.

Consideration is needed for the security/control of assessments and their completed assessment papers and/or practical assessment results.

2.16 ASSESSMENTS AT LOCATIONS NOT LISTED IN PARAGRAPH 1.6

Describe the process and, when applicable, cross-refer to the associated detailed procedure

2.17 PREPARATION, CONTROL AND ISSUE OF BASIC/TYPE TRAINING COURSE CERTIFICATES

The certificates need to be controlled prior to issue, with a system in place to ensure that each copy is numbered as part of a sequence and recorded as issued to a candidate by name.

If the experience aspect of the notification is based on experience gained outside a civil maintenance environment or foreign qualifications a certification to CAAT of that equivalence must be made. The organisation needs to have a procedure and notification certificate that covers off this process.



TCAR-PEL Part 66 - Assessment Module Record

The Categories numbers shown in the Category column is for a sample illustration of a typical Category B2 course only. As noted below the module may be satisfied at a higher level than the category requires.

Numbe r	Title	Catego ry	Exam	% Mark Achieved	Signature	Date Passed
1	Mathematics	B2	MC			
2	Physics	B2	MC			
3	Electrical Fundamentals	B2	MC			
4	Electronic Fundamentals	B2	MC			
5	Digital Techniques/ Electronic Instrument Systems	B2	MC			
6	Materials & Hardware	B2	MC			
7	Maintenance Practices	B1	MC			
7	Maintenance Practices	B1	Essay			
8	Basic Aerodynamics	B2	MC			
9	Human factors	B2	MC			
9	Human factors	B2	Essay			
10	Aviation Legislation	B2	MC			
10	Aviation Legislation	B2	Essay			
11	Aircraft Aerodynamics, Structures and Systems	N/A	МС			
12	Helicopter Aerodynamics, Structures and Systems	N/A	MC			
13	Aeroplane Aerodynamics, Structures and Systems	B2	МС			
14	Propulsion	B2	MC			
15	Gas Turbine Engine	N/A	MC			
16	Piston Engine	N/A	MC			
17	Propeller	N/A	MC			

Practical Training		Assessment	Date of Competence	Signature
Basic Practical Skills	B1	Competent		
Basic Maintenance Skills	B2	Competent		

Note: When the Category shown in the "Category" column is different to the course category approved for, it indicates that the Training and Assessment in that Module has been carried out to a higher knowledge level.



2.18 CONTROL OF SUB-CONTRACTORS

Describe the process and, when applicable, cross-refer to the associated detailed procedure



PART 3 - TRAINING SYSTEM QUALITY PROCEDURES

3.1 AUDIT OF TRAINING

An external auditor may be contracted by the smaller organisation for the purposes of the quality audit.

The purpose of the audit plan is to meet part of the needs of the Part 147 MTO approval.

The plan should indicate applicability of the various activities to be monitored and more than one list may be necessary (rolling audit). Each list should be shown against a timetable to indicate when the particular item is to be audited. A complete audit of the Part 147 MTO organisation must be completed every 12 months.

Cross reference the various procedures required for quality auditing, reporting findings and levels with any corrective actions required.

A management control and follow up system must also be in place and may not be contracted out.

Cross reference to any quality procedures manual if available is permitted, but this system must relate to and make reference to the relevant Part 147 MTO paragraphs.

3.2 AUDIT OF ASSESSMENTS

Must be audited annually, but may be part of the rolling audit procedure.

3.3 ANALYSIS OF ASSESSMENT RESULTS

Assessment results should be analysed on completion of each assessment and any questions amended as necessary. Cross reference the procedures detailing responsibilities.

3.4 AUDIT AND ANALYSIS REMEDIAL ACTION

Cross reference the procedures for the reporting of findings and for corrective actions.

3.5 ACCOUNTABLE MANAGER ANNUAL REVIEW

Points discussed on a set date should include:

projects requiring financial support; sufficient staff employed to meet foreseen training program; Part 147 MTO organisation review; assessments; student achievements; student support; and quality assurance review.

3.6 QUALIFYING THE INSTRUCTORS

List acceptable staff qualifications. Include procedures for the induction of inexperienced instructors as required and procedures for staff development.

Where relevant include procedures for the employment of part time or contract instructors.



3.7 QUALIFYING THE EXAMINERS/ASSESSORS

Examiners should have a full understanding of all the requirements.

Cross reference the procedures for staff development.

Cross reference the list of staff/qualifications.

Practical work assessors should be assessed as being competent

3.8 RECORDS OF QUALIFIED INSTRUCTORS, EXAMINERS AND ASSESSORS:

The company must maintain a record of all training staff which must include details of the scope of their authorisation.

Training staff must be provided with evidence of the scope of their authorisation.

The following minimum information should be kept on record in respect of each instructor:

Name;
Date of Birth;
Basic Training;
Type Training;
Continuation Training;
Experience;
Qualifications relevant to the approval;
Date of first issue of the authorisation; and
If appropriate – expiry date of the authorisation.

The records may be kept in any format (hard copy or electronically) subject to the Part 147 security requirements.

Persons authorised to access the system should be maintained at a minimum to ensure that records cannot be altered in an unauthorised manner or that such confidential records become accessible to unauthorised persons.

The instructor should be given reasonable access (on request) to their own records.

The authorisation document should be in a style that makes its scope clear to instructors and any authorised person that may require access to the document. Where codes are used to define scope, an interpretation document should be readily available.

Instructional staff are not required to carry the authorisation document at all times but should produce it within a reasonable time of a request from an authorised person. Authorised persons, apart from the organisation's quality department must include CAAT.

Any member of CAAT is classed as an authorised person when investigating the records system for initial and continued approval or when CAAT has cause to doubt the competence of a particular instructor.



3.9 COMPLIANCE MATRIX

A matrix which shows in the exposition where the potential Part 147 MTO has described a process which will enable compliance with the Part 147 requirements.

Section of the Part 147	Requirement to be addressed	MTO exposition – where is compliance described
100	Facility Requirements	
105	Personnel Requirements	
106	Qualifications for Assessors	
110	Records of Instructors and Assessors	
115	Instructional Equipment	
120	Maintenance Training Material	
122	Course Plans	
125	Records	
130	Training Procedures and Quality System	
135	Assessments	
137	Conducting Assessments	
138	Qualifications on Completions of Course	
139	Reporting Qualifications to CAAT Exposition checklist	
	 Corporate commitment by the Accountable Manager. Management personnel (Names and organisational titles). Selection criteria Duties and responsibilities of the management personnel. Nominated personnel to deal directly with CAAT on behalf of the organisation. Management personnel chains of responsibility organisation chart. Organisation's quality management system System for recording selection criteria for, and information about, the training instructors, assessors and examiners. Description of the training and assessment facilities at each location. List of the maintenance training courses that the organisation proposes to deliver, their course plans and student-instructor ratios. The course plan must set out for each course: the modules offered for the course; and b. for each of those modules:	



Section of the Part 147	Requirement to be addressed	MTO exposition – where is compliance described
	 student. If this includes assessments then assessment library(ies) or assessment papers for each course will need to be supplied; and (vi) student to instructor ratios; (vii) course entry criteria; (viii) conditions under which the course will be conducted; and (ix) course notes. Durations of assessments and the periods of time over which training is to be conducted. Organisation's exposition amendment procedure, including the procedure for introducing new courses, modifying existing courses and amending course plans. Organisation's control procedure, if any, for conduct of training for assessments at alternative locations. 	
	 A MTO may conduct training, knowledge and practical assessments at each location for which CAAT has given approval or other locations in accordance with a control procedure mentioned in the organisation's exposition. Organisation's procedure for producing maintenance training material. Organisation's procedure for producing reliable and verifiable certifications that the holder has one year of practical maintenance experience accumulated immediately before the application for an initial authority relevant to the category of sub category and satisfies the maintenance experience on operating aircraft relevant to the category of sub category sought. Statement explaining in detail the arrangements under which it occupies or uses the facility; if the organisation does not own a facility that it proposes to use for maintenance training. Statement explaining in detail the arrangements under which it uses the equipment or data if an applicant does not own the equipment or data that it proposes to use for maintenance training. A MTO may only amend its exposition if the amendment is approved by CAAT, or for a minor amendment, that does not apart of it — made 	



Section of the Part 147	Requirement to be addressed	MTO exposition – where is compliance described
	in accordance with the procedure set out in the exposition.	

PART 4 APPENDICES

4.1 CONTENTS

Example of documents and forms used Syllabus of each training course Cross reference index - if applicable

4.2 EXAMPLES OF DOCUMENTS AND FORMS USED

This section should include examples of all documents and forms used by the organisation in the conduct of its Part 147 MTO function.

Some examples are listed below:

Student attendance record Course certificate(s) Certificate(s) of training Classroom plan (exam purposes) *Course critique* Course results *Course design/change plan* Exam answer sheet Exam results Internal audit procedure Internal audit Appendix Internal audit report Application to conduct courses/assessments at a remote location Interview report form MTO Exposition amendment request MTO Exposition amendment request log Staff training record (to include qualifications, history and subjects taught) Staff terms of reference Student training and assessment form Training course review Quality system Aircraft visit form

Syllabus of each training course

This section should contain a detailed breakdown of the course in its entirety. It should show when each module, sub-module of the knowledge syllabus is to be taught (it is permissible to mix modules where convenient) and at what level of knowledge. The knowledge training element and practical element may be sub-divided.



Cross reference Index - if applicable

Self-explanatory.