สำนักงานการบินพลเรือนแห่งประเทศไทย
The Civil Aviation Authority of Thailand

GUIDANCE MATERIAL FOR DEVELOPMENT OF MAINTENANCE ORGANISATION EXPOSITION (MOE)

CAAT-GM-AIR-501
Revision: 02
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Approved By

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

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LIST OF AMENDMENT

Revision Number	Revision Date	Revision Type	Reason for Change
01	9 July 2021	Initial	N/A

02	30 June 2026	Major	- Revised TCAR 8 Part 145 to TCAR AIR Part-145
			- **O. INTRODUCTION**
			  ○ Added reference documents
			- **1. GENERAL GUIDANCE**
			  ○ Revised Cross Reference between TCAR AIR Part-145 and MOE Chapters
			  ○ Revised MOE Structure
			- **2. MOE STRUCTURE AND CONTENT**
			  ○ **PART 0 INTRODUCTION**
			  ▪ Revised Table of Content Recommendation
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			  ▪ Revised Statement by the Accountable Manager including procedures for Access to the Organisation and Immediate Reaction to a Safety Problem
			  ▪ Revised Safety Policy and Objectives
			  ▪ Revised Duties and Responsibilities of Management Personnel, particularly the Compliance Monitoring Manager and the Safety Manager.
			  ▪ Revised Management Organisation Chart, particularly the Responsible NDT Level 3
			  ▪ Revised Type and List of Certifying Staff and Support Staff to be consistent with TCAR PEL Part-66
			  ▪ Revised procedure for Base Maintenance Facilities
			  ▪ Added procedure for Engineer on board
			  ▪ Revised procedure for changes and Exposition Amendments
			  ○ **PART 2 MAINTENANCE PROCEDURE**
			  ▪ Revised Component/Material Certification, particularly Used Parts conditions
			  ▪ Added definition of Complex or long maintenance tasks
			  ▪ Revised procedure for Acceptance, Coordination and Performance of Scheduled Maintenance Works
			  ▪ Revised Aircraft Maintenance Release to Service (Ax Ratings) to be consistent with TCAR PEL Part – 66
			  ▪ Revised Mandatory Occurrences
			  ▪ Revised Production Planning and Organising of Maintenance Procedures

			▪ Added chapter for Fabrication of Parts, Component Maintenance under Aircraft or Engine Rating and Maintenance Away from Approved Location ○ **PART 3 MANAGEMENT SYSTEM** ▪ Revised all chapters related to the Safety Management System (SMS). ▪ Added remote audit methodology ▪ Revised Corrective action process ▪ Revised Retention of personnel records ▪ Revised Process for exemption from aircraft/ aircraft component maintenance tasks ▪ Revised NDT Personnel ▪ Added Training Procedures for On-the-Job Training ▪ Added Procedure for the Issuance of Recommendation to CAAT for First Aircraft Type Endorsement ○ **PART 4 RELATIONSHIP WITH CUSTOMER/ OPERATORS** ▪ Revised name of chapter ○ **PART 5 SUPPORTING DOCUMENTS** ▪ Revised The list of subcontractors list ▪ Added List of Used Alternative Means of Compliance as per Point 145.A.70(A)(17)

ABBREVIATIONS

AD	Airworthiness Directive
AMC	Acceptable Means of Compliance
AMEL	Aircraft Maintenance Engineer Licence
AMM	Aircraft Maintenance Manual
AMO	Approved Maintenance Organisation
AOC	Air Operator Certificate
AOG	Aircraft-on-Ground
ARC	Authorised Release Certificate
ATA	Air Transport Association
C/S	Certifying Staff
CAO	Combined Airworthiness Organisation
CAAT	Civil Aviation Authority of Thailand
CAP	Corrective Action Plan
CDCCL	Critical Design Configuration Control Limitation
CDL	Configuration Deviation List
CEO	Chief Executive Officer
CMM	Component Maintenance Manual
CoC	Certificate of Conformity
CRS	Certificate of Release to Service
DOA	Design Organisation Approval
EASA	European Union Aviation Safety Agency
EDTO	Extended Diversion Time Operations
EMM	Engine Maintenance Manual
ERP	Emergency Response Plan
ESM	Engine Shop Manual
FAA	Federal Aviation Administration
FAMO	Foreign Approved Maintenance Organisation
FC	Flight Cycles
FH	Flight Hours
FTS	Fuel Tank Safety
GM	Guidance Material
IATA	International Air Transport Association
IPC	Illustrated Parts Catalogue
MCF	Maintenance Check Flight
MEL	Minimum Equipment List
MOE	Maintenance Organisation Exposition
MPD	Maintenance Planning Document
MRB	Maintenance Review Board
MTOW	Maximum Take-off Weight
NAA	National Aviation Authority
NDI	Non-Destructive Inspection
NDT	Non-Destructive Testing
OEM	Original Equipment Manufacturer
PAPSI	Prospective Applicant's Pre-assessment Statement of Intent
PPB	Principle Place of Business
RCAB	Regulation of Civil Aviation Board

S/S	Support Staff
SB	Service Bulletin
SMS	Safety Management System
SRM	Structure Repair Manual
STC	Supplemental Type Certificate
SUP	Suspected Unapproved Part
TC	Type Certificate
TCAR	Thailand Civil Aviation Requirements
TPM	Training Program Manual
WH	Working Hours

0. INTRODUCTION

0.1 Scope and Applicability

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

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

0.2 Purpose

The purpose of this GM is to assist maintenance organisations in the development of their MOE.

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)

0.4 Communication

All documents and correspondence between the maintenance organisation and CAAT shall be in English. The official e-mail is air-amo@caat.or.th.

0.5 Management of Approvals by CAAT

All process phases (management of approvals, including issuance of audit reports and findings management) are conducted in CAAT-EMPIC.

0.6 References

- Air Navigation Act B.E. 2497
- Requirements of the Civil Aviation Authority of Thailand No. 2 on Repair Station Certificate
- Requirements of the Civil Aviation Authority of Thailand No. 5 on Foreign Repair Station Certificate
- Requirements of the Civil Aviation Authority of Thailand No. 22 on Reporting of Civil Aviation Occurrences

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

- Thailand Civil Aviation Regulation on Maintenance Organisation Requirement (TCAR AIR PART-145)
- Acceptable Means of Compliance to Thailand Civil Aviation Regulation on Maintenance Organisation Requirement (AMC to TCAR AIR Part-145)
- Thailand Civil Aviation Regulation - Personnel Licensing Part Aircraft Maintenance Engineer Licence (TCAR PEL Part - 66)
- Acceptable Means of Compliance and Guidance Material to TCAR PEL Part – 66 (AMC/GM to TCAR PEL Part - 66)
- Thailand Civil Aviation Regulation – Personnel Licensing Part Approved Aircraft Maintenance Training Organisation (TCAR PEL Part – 147)
- Acceptable Means of Compliance and Guidance Material to TCAR PEL Part – 147 (AMC/GM to TCAR PEL Part - 147)

1. GENERAL GUIDANCE

1.1 Preliminary Considerations

The MOE should be customised by each maintenance organisation to demonstrate how they comply with TCAR AIR Part-145. This includes requirements of TCAR AIR Part-M or TCAR AIR Part-ML referred in TCAR AIR Part-145 regulation, as applicable.

For each detailed procedure described within the MOE, the maintenance organisation should address the following fundamental 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 maintenance organisation 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.

Foreign maintenance organisations may choose to follow this GM in the development of the MOE or may choose to submit a CAAT MOE supplement with the MOE approved by other authorities.

However, for standardisation purposes, and to facilitate both the preparation of the MOE by the maintenance organisation and the review by the assigned inspector, it is recommended to adhere to the MOE structure, chapter/paragraph numbering, titles, and expected content described in this GM.

The maintenance organisation should customise the document to reflect its own organisational structure and processes and may include additional paragraphs where necessary.

1.2 Exposition Language and Format

The MOE, associated procedures and lists and other documents required to show compliance the TCAR AIR Part-145 requirements shall be available in the English language 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.

However, they may also be written in a second language (English and the language of the country where the organisation is located), provided that CAAT has formally accepted. In the case where the MOE, associated procedures, and other documents are written in both English and in a second language, the English version shall prevail.

1.3 Terms in Use

The following terms are used in this GM:

- **MOE Part** is used to identify the main parts of the MOE (e.g. Part 1 General, Part 2 Maintenance Procedures, Part 3 Management System procedures, etc.) as identified in AMC1 145.A.70(a).

- **MOE chapter** is used to identify each chapter within an MOE Part (e.g. MOE 1.2 Safety policy and objectives, MOE 3.2 Internal Safety reporting and investigations, MOE 5.1 sample of documents) as identified in AMC1 145.A.70(a).
- **MOE paragraph** is used to identify a paragraph within an MOE chapter (e.g. MOE 3.9.1 "Aircraft Certifying Staff and/or Support Staff", MOE 3.9.2 "Components certifying staff"). At the paragraph level the numbering system is not pre-identified in TCAR AIR Part-145 and it is left to the needs of the maintenance organisation. Further division to sub-paragraphs may be also used.

1.4 MOE GM Writing Conventions

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

Item	Location	Format	Remark
Regulatory references	After each MOE heading as applicable	*Italic font*	A cross-reference table between MOE chapters, paragraphs and regulations is provided in paragraph 2.5 of this GM.
Expected content of the maintenance organisation MOE	After each MOE heading as applicable	Normal font, listed in a checklist format: ☐ First level ○ Second level	It is the responsibility of the maintenance organisation to identify the "expected content" applicable to that maintenance organisation. When an "MOE paragraph" is identified in this GM, the same paragraph structure is expected to be found in the maintenance organisation MOE.
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 Cross References between TCAR AIR Part-145 and MOE Chapters

TCAR AIR Part-145	MOE Reference
145.A.10	1.9, 2.28
145.A.15(a)	1.10
145.A.15(b) 1, 2	1.10
145.A.20(a), (b)	1.9
145.A.25(a)1, 2	1.8, 2.22
145.A.25(b)	1.8, 2.22
145.A.25(c)1, 2, 3, 4, 5, 6	1.8
145.A.25(d)	2.3, 2.7
145.A.30(a)	1.3
145.A.30(a)1	1.4
145.A.30(a)2	1.2, 1.4
145.A.30(a)3	1.2, 3.19
145.A.30(a)4	3.19
145.A.30(b)	1.3, 1.4
145.A.30(ca)	1.3
145.A.30(cb), (cc)	1.4
145.A.30(d)	1.7, 2.22
145.A.30(e)	3.6, 3.9, 3.12, 3.13, 3.14, 3.19
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145.A.30(g)	1.6, 2.16, 3.9
145.A.30(h) 1, 2	1.6, 2.16, 3.9
145.A.30(i)	1.6, 2.16, 3.9
145.A.30(j)1, 2	1.6, 3.9
145.A.30(j)3, 4, 5	2.16
145.A.30(k)	1.6
145.A.35(a)	1.6, 2.16, 3.9, 3.19
145.A.35 (b), (c), (d), (e), (f), (g)	3.9
145.A.35(h)	3.9, 3.10
145.A.35(i)	1.4
145.A.35(j), (k)	3.10
145.A.35(l), (m), (n)	3.9
145.A.40(a)1	2.4, 2.6
145.A.40(a)2	2.6
145.A.40(a)3	1.8
145.A.40(b)	2.4, 2.5, 2.6
145.A.42(a)	2.3
145.A.42(a)1, 2, 4, 5	2.2
145.A.42(a) 3	2.19
145.A.42(b)1	2.1, 2.2
145.A.42(b)2	2.1, 2.2, 2.11
145.A.42(b)3	1.9, 2.1, 2.2, 2.9
145.A.42(c)	2.3
145.A.45(a)	2.8, 2.9, 2.24
145.A.45(b)1, 3, 4, 5	2.8
145.A.45(b)2	2.8, 2.11
145.A.45(c)	2.27

TCAR AIR Part-145	MOE Reference
145.A.45(d)	2.8, 2.12
145.A.45(e)	2.8, 2.13, 2.21
145.A.45(f), (g)	2.8, 2.13
145.A.47(a)	2.28
145.A.47(b)	2.22, 2.28
145.A.47(c)	2.22, 2.26
145.A.47(d)	3.18
145.A.48(a)	2.28
145.A.48(b)	2.16, 2.25
145.A.48(c)1	2.16
145.A.48(c)2	2.23
145.A.48(c)3	2.16, 2.25
145.A.48(c)4	2.9, 2.12
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145.A.55(f), (g)	2.14, 3.10, 3.12, 3.14, 3.17, 3.22
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145.A.60(b), (c), (e)	2.18
145.A.60(d)	2.18, 4.2
145.A.60(f)	2.18, 3.2
145.A.65(a)	2.22
145.A.65(b)1	2.28, 3.15, 4.2
145.A.65(b)2	1.11
145.A.70(a)	0.1
145.A.70(a)1	1.1
145.A.70(a)2	1.2
145.A.70(a)3	1.3
145.A.70(a)4	1.4
145.A.70(a)5	1.5
145.A.70(a)6	1.6
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145.A.70(a)15	5.3
145.A.70(a)16	5.4
145.A.70(a)17	5.5
145.A.70(b), (c)	1.11
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145.A.85(c)	1.11, 1.11.3
145.A.90(a), (c)	1.1
145.A.90(b)	1.4
145.A.95	1.1.2
145.A.95(a), (b), (c)	3.8.3
145.A.120(a), (b)	5.5, 1.12
145.A.120(b)	1.12
145.A.140	1.1.1
145.A.155(a),(b)	1.1.2, 3.7
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145.A.200(a)1(ii)	1.2
145.A.200(a)1(iii)	3.1
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AMC1 145.A.42(a)4, (a)5	2.2
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AMC1 145.A.45(b)	1.9, 2.28
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AMC1 145.A.70	0.1, 1.4
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GM1 145.A.55(a)(1)	2.14
GM1 145.A.60(b)	2.18
GM1 145.A.65	2.28
GM2 145.A.65(b)1	2.28, 3.15, 4.2
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GM2 145.A.205	2.1

1.6 MOE Structure

The MOE shall follow one option identified in following paragraphs 1.6.1 or 1.6.2 when deciding the MOE structure which better fits its operations.

1.6.1 Single MOE Document

The MOE, produced in accordance with AMC1 145.A.70(a), is developed by the organisation as an unique and complete document containing all the information required to show compliance with applicable CAAT regulation and all detailed procedures and lists customised by the maintenance organisation.

1.6.2 MOE Supplement by Associated Procedures/Lists

Associated procedures/lists shall meet the same rules in terms of document structure as described for the MOE (refer to this GM 1.6.4 and 1.6.5);
When the organisation is developing an MOE supplemented by associated procedures/lists, then

- the MOE must contain at least the information required by 145.A.70(a)1 to 145.A.70(a)17 and a minimum regulatory compliance procedure in each chapter (An MOE chapter only referring to an associated procedure is not acceptable), and;
- "associated" procedures/lists as defined below:
    - Associated Procedure: means a procedure providing additional and customised details on how the organisation intends to comply with applicable requirements
    - Associated List: means any of the list required by 145.A.70(a), when published separately from the MOE;

1.6.3 Work Instructions

Work Instructions are intended to be those documents including detailed instructions for maintenance personnel on how to perform their duties on a daily basis. They could also include lists/forms which are not required by 145.A.70 (a), such as for example the list of tools service providers, list of internal auditors, template to list units stored in a certain location, templates listing staff on duty, etc.

Work instructions do not require CAAT approval and are to be fully controlled by the maintenance organisation. The Compliance Monitoring function remains responsible to ensure any such document does not conflict with MOE or associated procedures/list.

EXAMPLE Abstract of work instruction related to control of unserviceable components

Work Instruction Content
Unserviceable components shall be located by production staff in the shelf number 1. On daily basis the storekeeper verifies the status of shelf number.1 and updates the list of unserviceable units in the computerised system. In case the unserviceable tag or removal information is found missing, the storekeeper will proceed issuing an internal occurrence to highlight the non-compliance with maintenance procedures.

In order to avoid confusion between MOE associated procedures/lists and work instructions, the following criteria is recommended:

- MOE procedures shall contain reference to MOE associated procedures/lists, which are listed in the MOE 1.11 (no reference should be given in the MOE to work instructions);
- MOE associated procedures/lists may refer to work instructions;
- Work instructions may refer to MOE and/or associated procedures lists.

1.6.4 MOE Revision Identification

In order to properly monitor the approval, it is essential that the maintenance organisation clearly identifies the initial edition of the MOE and each subsequent change. Any change to an approved MOE must 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 MOE chapter or paragraph (e.g. using vertical bars and highlighting the changed text with a specific colour)

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

Option 1: MOE 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 (Initial)	01 Jan 2020	0	01 Jan 2020
		1	17 Feb 2020
		2	25 Mar 2020
2	20 Apr 2020	0	20 Apr 2020
		1	10 May 2020
		2	15 Jun 2020

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

Any change to the MOE 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	17 Feb 2020
2	25 Mar 2020

1.6.5 Management Control of the MOE

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

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

The cover page of the MOE should specify:

- Title “Part 145 Maintenance Organisation Exposition”
- Unique identification number given to the MOE (e.g. AMONAME-CAAT-DOC1):
  - Unique identification number is expected for each document which is part of the CAAT approval (refer to MOE chapter 1.11). It is particularly helpful when managing electronic approvals of documents.
- Name of the maintenance organisation (official name)
- Address, telephone, fax numbers and the generic e-mail address of the Principal Place of Business (PPB) of the Organisation
- Copy number from the distribution list
- Repair station certificate number (if applicable)

1.7 MOE Initial Approval Process

1.7.1 First Submission of the Draft MOE

Prior to submission of the draft MOE, the accountable manager must sign and date the Corporate Commitment statement in MOE 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.

1.7.2 Tracking Changes to the Initial Draft MOE

Following receipt of the first draft MOE, CAAT will review and provide comments via CAAT-EMPIC to the maintenance organisation.

After the receipt of comments, the maintenance organisation is expected to revise the first draft and produce a second draft MOE, 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 MOE by CAAT, the following is expected;

- The maintenance organisation must reply to each comment via CAAT-EMPIC, explaining how it has been addressed and in which MOE chapter/paragraph.
- The maintenance organisation must issue a second draft MOE, which clearly identifies the changes introduced. This could be done by:
  - Maintaining the MOE 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 MOE 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 MOE, until the MOE is considered acceptable in order to proceed further with the document evaluation process.

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

2. MOE STRUCTURE AND CONTENT

MOE Table of Contents

PART 0 INTRODUCTION

0.1 Table of Contents

Reference: 145.A.70(a), AMC1 145.A.70, AMC1 145.A.70(a), GM1 145.A.70

CAAT recommends strict adherence to the MOE structure, chapters/paragraph numbering and titles of this GM. However, the maintenance organisation should customise the document to suit their organisation and include additional paragraphs where necessary.

If necessary, the maintenance organisation may include additional paragraphs in Part-5. In such a case, each additional chapter must have a cross reference to the affected MOE chapter. For example:

- 5.6 Detailed layout of the facilities listed in MOE 1.8
- 5.7 Training programme referred in MOE 3.6
- 5.8 Audit Matrix reference MOE 3.8.1

Note: The assigned inspector will refer to this GM when reviewing the MOE for approval. A different structure may result in additional workload and extended review time.

*Where a Part/chapter/paragraph is not used, it shall be identified in the Exposition as **Not Applicable (N/A)**. This is particularly the case when the paragraph does not apply to the scope of approval of the organisation.*

0.2 List of Effective Pages

The list of issues/revisions should allow traceability from the previously approved version. The maintenance organisation name, reviewed/approved date and reviewer's name should be included.

In the case of MOE indirect approval by the Compliance Monitoring manager, the MOE approval is completed by the maintenance organisation entering the date of the MOE approval, the name, position and signature of the approving person.

Following are examples of how the list of effective pages can be shown.

Example 1: The MOE is identified by both an Issue number and a Revision number, as explained in paragraph 2.6.1 of this GM.

Page Number	Issue Number	Revision Number	Revision Date	Page Number	Issue Number	Revision Number	Revision Date
Part 0				**Part L2**			
001	1	0	01 Jan 2018	L201	1	0	01 Jan 2018
002	1	0	01 Jan 2018	L202	1	0	01 Jan 2018
003	1	0	01 Jan 2018	…	…	…	…
004	2	0	15 Jun 2020	**Part 3**			
005	1	1	30 Aug 2019	301	2	0	15 Jun 2020
…	…	…	…	302	2	0	15 Jun 2020
Part 1				…	…	…	…
101	1	0	01 Jan 2018	**Part 4**			
102	1	1	30 Dec 2019	401	2	0	15 Jun 2020
103	2	0	15 Jun 2020	402	2	0	15 Jun 2020
104	1	0	01 Jan 2018	…	…	…	…
105	1	1	30 Dec 2019	**Part 5**			
…	…	…	…	501	2	0	15 Jun 2020
Part 2				502	2	0	15 Jun 2020
201	1	0	01 Jan 2018	…	…	…	…
202…	1	0	01 Jan 2018	**Part 6**			
203…	1	0	01 Jan 2018	601	1	0	01 Jan 2018
204…	1	0	01 Jan 2018	602	1	0	01 Jan 2018
…	…	…	…	…	…	…	…

MOE **Issue 2, Revision 0,** dated **15 Jan 2021**
MOE internal review by the maintenance organisation:

Reviewed by: (Name & Position)	**Reviewed Date:**

MOE Approval (to be used only in cases of approval of changes not requiring prior approval):

Indirectly approved by: (Name, Position, and Signature of the approver)	**Approved Date:**

Example 2: The MOE is identified only by a revision number as explained in paragraph 2.6.1 of this GM.

Page Number	Revision Date	Revision Number	Page Number	Revision Date	Revision Number
Part 0			**Part 2L**		
001	15 Jun 2020	Rev. 2	L201	1 Jan 2018	Rev. 0
002	15 Jun 2020	Rev. 2	L202	30 Aug 2019	Rev. 1
Part 1			…	…	…
101	1 Jan 2018	Rev. 0	**Part 3**		
102	1 Jan 2018	Rev. 0	301	15 Jun 2020	Rev. 2
103	1 Jan 2018	Rev. 0	302	15 Jun 2020	Rev. 2
…	…	…	…	…	…
Part 2			**Part 4**		
201	1 Jan 2018	Rev. 0	401	15 Jun 2020	Rev. 2
202	1 Jan 2018	Rev. 0	402	15 Jun 2020	Rev. 2
203	1 Jan 2018	Rev. 0	…	…	…
204	30 Aug 2019	Rev. 1	**Part 5**		
205	1 Jan 2018	Rev. 0	501	1 Jan 2018	Rev. 0
206	1 Jan 2018	Rev. 0	…	…	…
207	1 Jan 2018	Rev. 0	**Part 6**		
208	30 Aug 2019	Rev. 1	601	30 Aug 2019	Rev. 1
209	30 Aug 2019	Rev. 1	60	30 Aug 2019	Rev. 1
210	30 Aug 2019	Rev. 1	603	15 Jun 2020	Rev. 2
…	…	…	…	…	…

MOE **Revision 2,** dated **15 Jun 2020**
MOE internal review by the maintenance organisation:

Reviewed by: (Name & Position)	**Reviewed Date:**

MOE Approval (to be used only in cases of approval of changes not requiring prior approval):

Indirectly approved by: (Name, Position, and Signature of the approver)	**Approved Date:**

Example 3: The MOE is identified only by a revision number and revision as explained in paragraph 2.6.1 of this GM.

Page Number	Revision Date Revision	Revision Number	Page Number	Revision Date	Revision Number
PART 0			211	1 Jan 2021	Rev. 5
001	1 Jan 2021	Rev. 5	212	1 Jan 2021	Rev. 5
002	1 Jan 2021	Rev. 5	213	1 Jan 2021	Rev. 5
003	1 Jan 2021	Rev. 5	214	1 Jan 2021	Rev. 5
004	1 Jan 2021	Rev. 5	215	1 Jan 2021	Rev. 5
005	1 Jan 2021	Rev. 5	216	1 Jan 2021	Rev. 5
006	1 Jan 2021	Rev. 5	217	1 Jan 2021	Rev. 5
…	…	…	…	…	…
PART 1			**PART 2L**		
101	1 Jan 2021	Rev. 5	L201	1 Jan 2021	Rev. 5
102	1 Jan 2021	Rev. 5	L202	1 Jan 2021	Rev. 5
103	1 Jan 2021	Rev. 5	L203	1 Jan 2021	Rev. 5
104	1 Jan 2021	Rev. 5	…	…	…
105	1 Jan 2021	Rev. 5	**PART 3**		
106	1 Jan 2021	Rev. 5	301	1 Jan 2021	Rev. 5
107	1 Jan 2021	Rev. 5	302	1 Jan 2021	Rev. 5
108	1 Jan 2021	Rev. 5	303	1 Jan 2021	Rev. 5
109	1 Jan 2021	Rev. 5	…	…	…
…	…	…	**PART 4**		
PART 2			401	1 Jan 2021	Rev. 5
201	1 Jan 2021	Rev. 5	402	1 Jan 2021	Rev. 5
202	1 Jan 2021	Rev. 5	…	…	…
203	1 Jan 2021	Rev. 5	**PART 5**		
204	1 Jan 2021	Rev. 5	401	1 Jan 2021	Rev. 5
205	1 Jan 2021	Rev. 5	402	1 Jan 2021	Rev. 5
206	1 Jan 2021	Rev. 5	…	…	…
207	1 Jan 2021	Rev. 5	**PART 6**		
208	1 Jan 2021	Rev. 5	601	1 Jan 2021	Rev. 5
209	1 Jan 2021	Rev. 5	602	1 Jan 2021	Rev. 5
210	1 Jan 2021	Rev. 5	…	…	…

MOE **Revision 5** dated **01 Jan 2021**
MOE internal review by the organisation:

reviewed by: (name & position)	**date:**

MOE Approval (to be used only in cases of approval of changes not requiring prior approval):

Indirectly approved by: (name, position and signature of the approving person)	**date:** 05 Feb 2021

0.3 List of Amendments

The List of Amendments shall identify the MOE chapters and the reason for change. Following are examples of how the list of amendments can be shown.

Example 1: The example below is related to an MOE identified by both an Issue number and a Revision number.

Issue Number	Issue Date	Revision Number	Revision Date	Revision Type	Reason for Change
1	19 Dec 2006	0	19 Dec 2006	Initial	N/A
		1	01 Jan 2007	Minor	New procedure for cleaning
2	01 Jan 2018	0	01 Jan 2018	Major	• MOE 1.3 Change of Compliance Monitoring Manager • MOE 1.9 Extension of the A1 scope of approval to add aircraft Boeing 787-8/9/10 (GEnx)

Example 2: The example below is related to an MOE identified only by a revision number.

Revision Number	Revision Date	Revision Type	Reason for Change
0	19 Dec 2006	Initial	N/A
1	01 Jan 2007	Minor	New procedure for cleaning
2	01 Jan 2018	Major	• MOE 1.3 Change of Compliance Monitoring Manager • MOE 1.9 Extension of the A1 scope of approval to add aircraft Boeing 787-8/9/10 (GEnx)

0.4 Distribution List

Example of distribution list

MOE Copy Number	MOE Holder	Format
Copy No. 1	Accountable Manager	Electronic
Copy No. 2	Safety Manager	Paper
Copy No. 3	Aircraft Maintenance Manager	Electronic
Copy No. 5	Workshop Maintenance Manager	Electronic
Copy No. 5	Compliance Monitoring Manager	Paper
Copy No. 6	CAAT	Paper/ Electronic
Copy No. 7	Reserved	
Copy No. 8	Reserved	

If the MOE is made available in electronic format from a central server, no distribution list is required.

0.5 Definitions and Abbreviations

This MOE chapter is intended to list the definitions, abbreviations and acronyms in use within the MOE.

PART 1 GENERAL

1.1 Statement by the Accountable Manager

Reference: 145.A.70(a)1, AMC1 145.A.70 (a)1, GM1 145.A.70(a), 145.A.90(a), 145.A.90 (c)

This maintenance organisation exposition and any associated referenced manuals define the organisation and procedures upon which the TCAR AIR Part-145 approval certificate is issued by CAAT.

These procedures are endorsed by the undersigned and, as applicable, must be complied with, when contracts or work orders are performed under the maintenance organisation approval certificate.

These procedures do not override the requirement to comply with any new or amended regulations published from time to time where such regulations conflict with these procedures.

It is understood that the approval of the maintenance organisation is based on the continuous compliance with TCAR AIR Part-145, TCAR AIR Part-M and TCAR AIR Part-ML, as applicable, and with the organisation's procedures described in this Exposition.

CAAT is entitled to limit, suspend, or revoke the approval certificate if the organisation fails to fulfil the obligations imposed by TCAR AIR Part-145, as applicable, or any conditions under which the approval was issued.

Signed: _____

Dated: _____

Accountable Manager: _____(quote name and position)_____

For and on behalf of: _____(quote organisation's name)_____

1.1.1 Access to the Organisation.

Reference: 145.A.140

For the purpose of determining compliance with the relevant requirements of TCAR AIR Part -145, the organisation shall ensure that access to any facility, aircraft, document, records, data, procedures or to any other material relevant to its activity subject to certification, whether it is subcontracted or not, is granted to the Inspectors assigned to perform the oversight tasks

- ☐ Maintenance Organisation commitment to grant access to any facility, aircraft, document, records, data, procedures or to any other material relevant to its activity subject to certification

1.1.2 Immediate Reaction to a Safety Problem.

Reference: 145.A.95, 145.A.155(a), 145.A.155(b)

The organisation shall implement any safety measure mandated or relevant safety information issued by CAAT

- ☐ Maintenance Organisation commitment to implement safety measures mandated or safety information issued by CAAT

1.2 Safety Policy and Objectives

Reference: 145.A.30(a)2, 145.A.30(a)3, 145.A.70(a)2, 145.A.200(a)1(ii), AMC1 145.A.200(a)1(ii), GM1 145.A.200(a)1(ii)

The safety policy and objectives must, as a minimum, include a statement committing that the organisation will:

- ☐ comply with all the applicable legislation, to meet all the applicable requirements, and adopt practices to improve safety standards
- ☐ provide the necessary resources for the implementation of the safety policy
- ☐ apply human factors principles, including giving due consideration to the aspects of fatigue
- ☐ enforce safety as a primary responsibility of all managers
- ☐ encourage personnel to report maintenance-related errors, incidents and hazards
- ☐ apply “just culture” principles to internal safety reporting and the investigation of occurrences and, in particular, not to make available or use the information on occurrences:
  - to attribute blame or liability to front-line personnel or other persons for actions, omissions or decisions taken by them that are commensurate with their experience and training; or
  - for any purpose other than the maintenance or improvement of aviation safety.

The commitment to apply “just culture” principles forms the basis for the organisation’s internal rules describing how ‘just culture’ principles are guaranteed and implemented

- ☐ ensure Senior Management continually promote the safety policy to all personnel, demonstrate its commitment to it, and provide necessary human and financial resources for its implementation
- ☐ promote proactive and systematic safety management and positive safety culture
- ☐ define safety objectives, which:
  - form the basis for safety performance monitoring and measurement
  - reflect the organisation’s commitment to maintain or continuously improve the

overall effectiveness of the management system
- be communicated throughout the organisation
- be periodically reviewed to ensure they remain relevant and appropriate for the organisation

☐ ensure that safety standards are not reduced by commercial imperatives
☐ recognise the need for all personnel to cooperate with the compliance monitoring and internal investigations

1.3 Management Personnel

Reference: GM1 145.A.10, 145.A.30(a), AMC1 145.A.30(a), 145.A.30(b), AMC1 145.A.30(b), 145.A.30(ca), AMC1 145.A.30(c);(ca), GM1 145.A.30(ca), 145.A.30(f), AMC1 145.A.30(f), GM4 145.A.30(e), 145.A.70(a)3

This MOE chapter should identify the Management Structure of the organisation by listing, as minimum, the title and names of the Accountable Manager plus all the nominated persons. The group of Nominated Persons should be chosen or identified so that all the TCAR AIR Part-145 functions are covered under their respective responsibilities, and their written Resume shall be submitted to CAAT as part of the MOE.

MOE chapter 1.3 must be consistent at all times with MOE chapters 1.4 and 1.5, and represent the up-to-date description of the maintenance management structure of the organisation, including the following positions:

☐ Accountable Manager
☐ Nominated Persons
☐ Deputy Nominated Personnel
☐ Managers (if applicable)
☐ Responsible Non-Destructive Test (NDT) Level 3* (if applicable)

The table below is an example of a Management Structure, where the name of the nominated persons must also be identified. Procedures must make clear who deputises for any particular person in the case of lengthy absence of the said person. This may be done by detailing the procedures to appoint a deputy nominated person or by identifying directly the person by name.

Management Structure	Management Personnel List of Deputies
Accountable Manager	Deputy Accountable Manager
List of Nominated Personnel: – Base Maintenance Manager – Line Maintenance Manager – Workshop Maintenance Manager – Compliance Monitoring Manager – Safety Manager	 – Deputy Base Maintenance Manager – Deputy Line Maintenance Manager – Deputy Workshop Maintenance Manager – Deputy Compliance Monitoring Manager – Deputy Safety Manager
List of Managers: – Auditing Manager – Safety Reporting Manager – Engineering Manager – Logistic Manager	N/A
NDT Level 3	N/A

If the same person is nominated for more than one nominated role, the accountable manager should ensure that sufficient resources are allocated to both functions, taking into account the size of the organisation, and the nature and complexity of its activities

For further guidance on management personnel classifications, refer to Guidance Material for Maintenance Organisation Management Personnel (CAAT-GM-AIR-505).

1.4 Duties and Responsibilities of Management Personnel

Reference: AMC1 145.A.10, 145.A.30(a)1, 145.A.30(a)2, AMC1 145.A.30(a), AMC1 145.A.30(b), AMC1 145.A.30(b), GM1 145.A.30 (b), 145. A.30. (cb), 145.A.30.(cc), AMC1 145.A.30(c), AMC1 145.A.30(cc), AMC1 145.A.30(d), AMC1 145.A.30(f), AMC2 145.A.30(f), 145.A.35(i), 145.A.70(a)4, AMC1 145.A.70, GM1 145.A.70, 145.A.90(b), 145.A.200(a)1(i), AMC1 145.A.200(a)1(i),

The duties and responsibilities of nominated persons identified in MOE chapter 1.3 must be detailed in this chapter. It must be ensured that all TCAR AIR Part-145 functions are addressed, as applicable to the maintenance organisation. Nominated persons ensure that compliance is proactively managed, and that early warning signs of non-compliance are documented and acted upon.

Any TCAR AIR Part-145 function must be under the responsibility of a Nominated Person, as listed in MOE chapter 1.3, who must ensure compliance of that function with the relevant TCAR AIR Part-145 requirements. For example:

- to perform an independent audit
- to issue the Certifying Staff – Support Staff (C/S – S/S) individual authorisations
- to have available appropriate facilities, tools and equipment
- Etc.

A Nominated Person can only delegate responsibilities to managers who directly report to them and are identified as a “Deputy Nominated Person” for the related function (e.g. Deputy Maintenance Manager).

MOE chapter 1.4 needs to be consistent, at all times, with MOE chapters 1.3 and 1.5 and must represent the up-to-date description of the maintenance management structure of the organisation.

For further guidance on management personnel classifications, refer to Guidance Material for Maintenance Organisation Management Personnel (CAAT-GM-AIR-505).

1.4.1 Accountable Manager

The Accountable Manager is responsible for ensuring that maintenance carried out by the approved maintenance organisation meets the standards required by CAAT, and is responsible for:

- ☐ establishing and promoting the safety policy and objectives
- ☐ nominating the management staff
- ☐ ensuring that the necessary finance, manpower resources and facilities are available to enable the company to perform the maintenance to which it is committed for contracted operators and any additional work which may be undertaken
- ☐ supervising the progress of corrective actions
- ☐ reviewing the overall results in terms of quality
- ☐ ensuring that the competency of all personnel, including management personnel, has been assessed
- ☐ ensuring that any charges are paid, as prescribed by CAAT in accordance with the fees & charges regulation

- ☐ returning the approval to CAAT in cases of surrender or revocation

Any additional duties and responsibilities may be added provided that they do not conflict with those of the other management personnel. Depending upon the structure of the maintenance organisation some duties may be distributed differently.

In case the Accountable Manager is not the Chief Executive Officer (CEO), CAAT needs to be assured that direct access to the CEO and sufficiency of "maintenance funding" allocation is available.

1.4.2 Compliance Monitoring Manager

The Compliance Monitoring Manager must have direct access to the Accountable Manager on matters concerning the compliance monitoring system. The following is the minimum list of duties and responsibilities of the Compliance Monitoring Manager and may be amended as appropriate.

- ☐ Ensuring that the activities of the organisation are monitored for compliance with the applicable requirements and any additional requirements as established by the organisation, and that these activities are carried out properly under the supervision of the nominated persons
- ☐ Ensuring that any maintenance contracted to another maintenance organisation is monitored for compliance with the contract or work order
- ☐ Establishing an independent audit system to monitor compliance of the TCAR AIR Part-145 organisation with CAAT requirements, and that an audit plan is properly implemented, maintained, and continually reviewed and improved
- ☐ Corrections and corrective actions are requested as necessary
- ☐ Establishing regular meetings with the Accountable Manager to appraise the effectiveness of the compliance monitoring system. This should include details of any reported discrepancy not being adequately addressed by the relevant person or in respect of any disagreement concerning the nature of a discrepancy
- ☐ Monitoring the amendment of the maintenance organisation's procedures and standard practices, and their compliance with the current revision of TCAR AIR Part-145 as well as any other applicable regulatory requirements and guidance material issued by CAAT
- ☐ Submitting the MOE and any associated amendments to CAAT for approval, which includes completion of and submission of CAAT Form 2 or equivalent
- ☐ Assessing providers of materials, standard parts, components and contracted organisations for satisfactory product quality in relation to the needs of the maintenance organisation
- ☐ Assessing subcontractors working under the compliance monitoring system and maintaining the expertise necessary to be able to do so, to the satisfaction of CAAT
- ☐ Issuing/renewing/cancelling TCAR AIR Part-145 C/S – S/S individual authorisations
- ☐ Accepting for temporary or occasional cases, base maintenance tasks (Airworthiness Directives (AD's), Service Bulletins (SB's)) to be performed by a line maintenance organisation
- ☐ Notifying CAAT, as applicable according to the procedures established in the MOE, of maintenance activities conducted outside the approved locations
- ☐ Establishing feedback from audit findings into the recurrent training programme;

In addition, depending upon the maintenance organisation structure, some of the compliance monitoring system duties may be delegated to one or several managers who report to the Compliance Monitoring Manager and are therefore not subject to CAAT nominated personnel requirements

Following are examples of compliance monitoring system duties that could be delegated:

1.4.2.1 Auditing Manager

- ☐ Implementing an independent audit program in which compliance with all applicable procedures is reviewed at regular intervals in relation to each type of aircraft (or component) maintained. This includes the management and completion of audits and production of audit reports and ensuring any observed non-compliances or poor standards are brought to the attention of the person concerned
- ☐ Following up and closure of any non-conformances identified

1.4.3 Maintenance Manager (Aircraft Base Maintenance Manager, Aircraft Line Maintenance Manager and/or Workshop Maintenance Manager)

The Maintenance Manager must have direct access to the Accountable Manager on matters concerning maintenance activities. The following is the minimum list of duties and responsibilities of the Maintenance Manager and may be amended as appropriate, provided that they do not conflict with those of other management personnel.

- ☐ Ensuring the satisfactory completion and certification of all work required by contracted operators/customers in accordance with the work specification (work order and approved MOE procedures)
- ☐ Ensuring that the maintenance organisation's procedures and standards are complied with when carrying out maintenance
- ☐ Ensuring the competency of all personnel engaged in maintenance
- ☐ Establishing a program of training and recurrent training using internal and/or external sources. This responsibility may also be under the Compliance Monitoring Manager
- ☐ Ensuring that any work for internal workshops or external contracted/subcontracted organisations are correctly detailed in a work order/contract and that the requirements of the work order/contract are fulfilled in respect of inspection
- ☐ Providing feedback to the compliance monitoring system about the services provided by contracted organisations and subcontractors
- ☐ Responding to safety and quality deficiencies in the area of responsibility, which arise from independent compliance monitoring audits
- ☐ Ensuring the quality of workmanship in the final product is to a standard acceptable to the maintenance organisation and CAAT
- ☐ Implementing the safety policy and objectives, including human factors principals
- ☐ ensuring the availability of facilities appropriate for the planned work, including hangars, workshops, office accommodation, stores, etc.
- ☐ Ensuring the availability of a working environment appropriate to the tasks being undertaken
- ☐ Ensuring the incoming inspection of components, parts, materials, tools and equipment, as well as that the related classification, segregation and storage is in accordance with the manufacturer’s recommendations
- ☐ Developing a production planning system appropriate to the amount and complexity of the maintenance scope of work
- ☐ Ensuring the availability of tools, equipment and materials to perform the planned tasks;
- ☐ Ensuring the availability of sufficient competent personnel to plan, perform, supervise, inspect and certify the work being performed
- ☐ Ensuring the availability of all necessary maintenance data
- ☐ Ensuring the recording and notifying of, to the author of the maintenance data, any

inaccurate, incomplete or ambiguous procedures, practices, information or maintenance instructions contained in the maintenance data used by maintenance personnel
- ☐ Providing a common work card or worksheet system to be used throughout relevant parts of the maintenance organisation and ensuring such documents comply with TCAR AIR Part-145, 145.A.45(e)
- ☐ Notifying the Accountable Manager whenever deficiencies emerge which require attention in respect of finance and the acceptability of standards
- ☐ Notifying the Accountable Manager and Compliance Monitoring Manager of any lack of 25% of available man-hours over a calendar month
- ☐ Supplying the necessary technical documents for customers
- ☐ Ensuring the storage of the maintenance organisation's technical records

Depending upon the maintenance organisation structure, some of the maintenance duties may be delegated to one or several managers who report to the Maintenance Manager (may be Base Maintenance, Line Maintenance or Workshop Maintenance), and are therefore not subject to CAAT nominated personnel requirements.

1.4.3.1 Engineering Manager

- ☐ Ensuring the availability of all necessary maintenance data
- ☐ Supplying the necessary technical documents for customers
- ☐ Ensuring the storage of the maintenance organisation's technical record
- ☐ Recording and notifying, to the author of the maintenance data, any inaccurate, incomplete or ambiguous procedures, practices, information or maintenance instructions contained in the maintenance data used by maintenance personnel
- ☐ Providing a common work card or worksheet system to be used throughout relevant parts of the maintenance organisation and ensuring such documents comply with TCAR AIR Part-145, 145.A.45(e)

1.4.3.2 Logistics Manager

- ☐ Performing the incoming inspection of components, parts, materials, tools and equipment, as well as that the related classification, segregation and storage is in accordance with the manufacturer's recommendations

1.4.4 Responsible NDT Level 3

The following is the minimum list of duties and responsibilities of the Responsible NDT Level 3 and may be amended as appropriate.

- ☐ Ensuring that the applicable NDT requirements (e.g. 145.A.30(e), EN4179 or NAS410) are met and acting on behalf of the employer in this area
- ☐ Developing the MOE 3.17 procedures related to the qualification of NDT staff
- ☐ Developing and approving the NDT manual for specific techniques within each method used within the maintenance organisation

Even though the Responsible NDT Level 3 does not directly report to the Accountable Manager, it is strongly recommended to identify that person in the MOE.

1.4.5 Safety Manager

The Safety Manager must have direct access to the Accountable Manager and appropriate senior and other management on matters concerning the Safety Management System (SMS). The following is the minimum list of duties and responsibilities of the Safety Manager and may be amended as appropriate.

The Safety Manager should not hold other positions or responsibilities that may conflict or impair the role as the Safety Manager. This should be a senior management position, not lower than the production or operational functions of the maintenance organisation.

- ☐ Managing the safety reporting scheme and the occurrence reporting system, including initiation and follow-up of internal occurrence investigations

Note: The organisation should assign responsibility with clearly defined authority, for coordinating action on airworthiness occurrences and for initiating any necessary further investigation and follow-up activity. It is recommended that this function is attributed to the Safety Manager as it is strictly linked with the safety reporting scheme.

- ☐ Facilitating hazard identification, risk assessment and management
- ☐ Monitoring the implementation of actions taken to mitigate risks, as listed in the safety action plan, unless action follow-up is addressed by the compliance monitoring function
- ☐ Providing periodic reports on safety performance to the safety review board
- ☐ Ensuring the maintenance of safety management documentation
- ☐ Ensuring that there is safety training available, and that it meets acceptable standards
- ☐ providing advice on safety matters
- ☐ Establishing feedback from maintenance incidents/issues and feeding these back into the recurrent training programme

Following are examples of Safety duties that could be delegated:

1.4.5.1 Safety Reporting Manager

- ☐ managing the safety reporting scheme and the occurrence reporting system, including initiation and follow-up of internal occurrence investigations.

1.5 Management Organisation Chart

Reference: 145.A.70(a)5, GM1 145.A.30(cb)

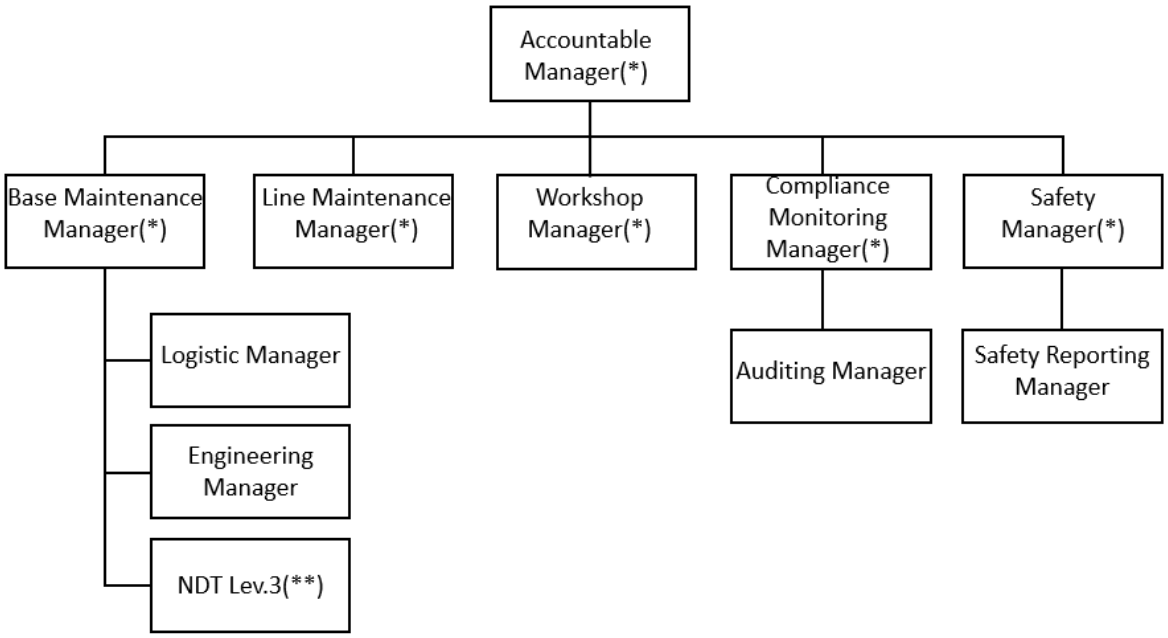
The maintenance organisation chart must show the associated chains of responsibility of the Nominated Persons identified in MOE chapter 1.3. When other Managers are identified in MOE chapter 1.3 (e.g. Auditing Manager) they also need to be reflected in the maintenance organisation chart to show that they report ultimately through a Nominated Person to the Accountable Manager.

There are different ways to set up the organisation structure. The key principle is that, regardless of the arrangement, there is one nominated person responsible for each TCAR AIR Part-145 function and this responsibility is recognised by that nominated person and the accountable manager. This responsibility should not be diluted into the various levels of management and should be free of conflicts of interest.

MOE chapter 1.5 needs to be consistent, at all times, with MOE chapters 1.3 and 1.4 and must represent the up-to-date description of the maintenance management structure of the organisation.

For further guidance on maintenance organisation structure, refer to Guidance Material for Maintenance Organisation Management Personnel (CAAT-GM-AIR-505).

The following is an example of a TCAR AIR Part-145 Approved Maintenance Organisation Structure.



(*) Nominated Person

(**) Responsible NDT Level 3

The Nominated Persons must be clearly identified in the chart. The names of the management personnel may be included in the boxes of the organisation chart but this is optional.

Compliance monitoring staff (e.g. Compliance Monitoring Auditor) must be shown to be independent from the Maintenance Managers.

Certifying staff cannot report to the Compliance Monitoring Manager to ensure this function remains independent from maintenance functions.

Note: Responsible NDT Level 3 shall be formally designated to ensure that individuals performing or supervising continued airworthiness NDT of aircraft structures or components are appropriately qualified for the applicable NDT methods, in accordance with EN 4179, NAS 410, or other equivalent standards recognized by CAAT. Furthermore, the designated NDT Level 3 personnel shall have successfully completed an interview conducted by CAAT.

1.6 List of Certifying Staff and Support Staff

Reference: 145.A.30(g), 145.A.30(h)1, 145.A.30(h)2, 145.A.30(i), 145.A.30(j)1, 145.A.30(j)2, 145.A.30(k), AMC1 145.A.30(g), 145.A.35(a), 145.A.70(a)6, 145.A.75(f), Appendix iV

This MOE chapter should detail the list of certifying staff and its management in conjunction with MOE chapter 1.10 and 1.11.

1.6.1 Certifying Staff (C/S) and Support Staff (S/S)

1.6.1.1 Categories of C/S and S/S

The procedure should define the privileges to be granted under the TCAR AIR Part-145 approval for each C/S, S/S category.

- ☐ Aircraft base maintenance certifying staff (TCAR PEL Part - 66 in category C)
- ☐ Aircraft base maintenance support staff (TCAR PEL Part - 66 in category B1 and B2)
- ☐ Aircraft line maintenance C/S:
  - TCAR PEL Part - 66 in Category B1
  - TCAR PEL Part - 66 in Category B2
  - TCAR PEL Part - 66 in Category A (The tasks each staff is authorised to release, have to be recorded in the individual authorisation).
    - List of tasks which may be authorised

When the maintenance organisation is making use of task trained C/S, the specific list of authorised tasks, as applicable to the scope of work, should be provided by means of an MOE procedure in this chapter. Refer to AMC1 145.A.30(g) for the typical tasks, examples of which are as follows:

- ☐ Engines C/S (CAAT Form 1)
- ☐ Components C/S (CAAT Form 1)
- ☐ Specialised Services (NDT) C/S (CAAT Form 1)

1.6.1.2 Scope of the National Licence by Comparison to CAAT Certifying Staff and Support Staff Categories (Applicable to foreign maintenance organisations)

- ☐ Scope of the national licence by comparison to TCAR PEL Part – 66, 66.A.3(a) categories for staff who do not hold an TCAR PEL Part - 66 Licence
- ☐ Summary (preferably in a table) of the privileges of the national license (associated limitations must be also recorded)
- ☐ Comparison (preferably in a table) of these national privileges with CAAT Aircraft Maintenance Engineer Licence (AMEL) privileges (associated limitations must be also considered)

For further guidance, refer to TCAR AIR Part-145 Appendix IV and Guidance Material for Aircraft Certifying Staff and Support Staff (CAAT-GM-AIR-507).

1.6.2 Content of the List

This list must include, at least, the following information, as applicable:

- ☐ Name/forename
- ☐ CAAT C/S category
- ☐ Identification of the S/S for base maintenance activities

- ☐ Functions
- ☐ Authorisation identification number
- ☐ Sample of the signature
- ☐ Date of the first issue of the authorisation
- ☐ Expiry date of the authorisation
- ☐ Scope/limitation of the authorisation

For aircraft C/S and S/S only;

- ☐ Aircraft maintenance license identification number
- ☐ Line and base maintenance C/S authorised under the protected rights as described in TCAR AIR Part-145 Appendix IV, paragraph 2

1.6.3 Management of the List

This procedure should detail the following:

- ☐ Identification and management of the List
- ☐ Approval of lists in conjunction with MOE chapter 1.10 and 1.1
- ☐ Retention of records:
  - Duration/location
  - Type of documents (evidence)

The list(s) may be directly inserted in this chapter of the MOE or managed as a separate associated list.

1.7 Manpower Resources

Reference: 145.A.30(d), 145.A.70(a)7

The maintenance organisation must be able to demonstrate adequate manpower resources to support the entire scope of approval. The maintenance organisation should not declare a percentage of staff used but should indicate the number of staff needed to comply with TCAR AIR Part-145 requirements.

There is no need to amend this chapter as result of routine fluctuations. However, any significant re-deployment or loss of staff or any staff change having an impact on the approval should be identified and notified to CAAT according to the criteria specified in the MOE chapter 1.10.

The number of staff declared in the MOE and the latest CAAT Form 2 submission should remain consistent. The following should be included in the MOE:

- ☐ Total staff number including breakdown into the various categories
- ☐ Summary table of the following is expected:
  - Management personnel
  - Technical S/S
  - Compliance Monitoring staff
  - Safety Management staff
  - C/S
  - Base maintenance S/S
  - Maintenance technical staff other than C/S and S/S:
    - Store and purchasing department staff
    - Training staff

- Contracted staff

For further guidance, refer to Guidance Material for Maintenance Organisation Staff Numbers (CAAT-GM-AIR-506).

1.8 General Description of the Facilities at Each Address Intended to be Approved

Reference: 145.A.25(a)1, 145.A.25(a)2, AMC1 145.A.25(a), 145.A.25(b), AMC1 145.A.25(b), 145.A.25(c)1, 145.A.25(c)2, 145.A.25(c)3, 145.A.25(c)4, 145.A.25(c)5, 145.A.25(c)6, 145.A.70(a)8, 145.A.75(d), 145.A.40(a)3, Appendix III

This MOE chapter should describe each of the facilities where the maintenance organisation intends to carry out maintenance.

Facilities such as stores, component workshops, or subcontractor workshops may be located separately from the main facilities of the organisation. These facilities can still be covered by the organisation's approval. They do not need to be identified on the organisation certificate. However, the MOE must identify these facilities. It must also include procedures to control them.

A clear diagram or picture of the facilities to be approved should be provided.

Either by way of a diagram or text, the following should be described for each facility:

- ☐ System of protection against weather, dust and other airborne contaminants (paint, smoke, etc.)
- ☐ Ground water protection
- ☐ Heating/air conditioning
- ☐ Lighting
- ☐ Noise protection
- ☐ Safety systems (limited accesses, fire, staff security, etc.)

1.8.1 Principal Place of Business (PPB)

- ☐ The PPB is the location where the principal maintenance functions are carried out and will be the address shown on the CAAT approval certificate.

1.8.2 Postal and E-mail Addresses

- ☐ The postal address of the maintenance organisation for formal mail communication with CAAT needs to be clearly identified.
- ☐ The e-mail address of the maintenance organisation should be a generic address.

1.8.3 Base Maintenance Facilities

- ☐ Hangar accommodation (means a closed facility that can house an aircraft and protects from environmental condition. Hangar facilities shall be equipped with doors).

The TCAR AIR Part-145 AMC states that:

"Subject to a risk assessment and agreement by the CAAT, the organisation may use facilities at the approved location other than a base maintenance hangar for certain aircraft base

maintenance tasks, provided that those facilities offer levels of weather and environmental protection that are equivalent to those of a base maintenance hangar, as well as a suitable working environment for the particular work package. This does not exempt an organisation from the requirement to have a base maintenance hangar in order to be approved to conduct base maintenance at a given location."

This means that, for the performance of limited **base maintenance tasks** – for example tasks involving limited disassembly, inspection, or repair – facilities other than an enclosed hangar may be acceptable, subject to an appropriate risk assessment. Such an assessment should consider both the probability and the consequences of hazards, including local environmental conditions.

However, this possibility, does not exempt an organisation from the requirement to have a base maintenance hangar in order to be approved to conduct base maintenance at a given location.

Furthermore, this provision clarifies that aircraft base maintenance tasks requiring extensive disassembly, inspection, or repair shall be carried out in facilities that enclose the whole aircraft (i.e. a closed building structure equipped with doors, a roof, and lateral walls).

Enclosed facilities are the only means to fully mitigate risks associated with hazards such as the ingress of rain, hail, ice, snow, or dust, the effects of wind, and the presence of wildlife such as birds or rodents.

- ☐ Hangar layouts specifying the various allowed aircraft parking configurations, as applicable to the aircraft types included in the scope of approval
  - Maximum number of aircraft which can be accommodated at the same time for each facility, including any base and line maintenance activities.
  - Maximum number of aircraft which can undergo base maintenance at the same time.
  - Largest type of aircraft that can be accommodated.
- ☐ Aircraft access equipment/platforms/docking
- ☐ Specialised workshops
- ☐ Environmental provisions
- ☐ Office accommodation for planning, technical records, quality, technical reference area, storage, etc.

1.8.4 Line Maintenance Facilities at Each Location

- ☐ Hangar availability specified if rented or owned

It should be clearly stated if a hangar facility is not available at the location. The scope of work of the particular line station should not exceed the weekly check, and the inclusion of other minor scheduled maintenance tasks should be subject to assessment ensuring they can be safely carried out to the required standards.

Note: For a Foreign Repair Station certificate, any line station located in a territory different from the Principal Place of Business shall be required to obtain a separate CAAT Foreign Repair Station certificate number.

1.8.5 Engines or APU and Component Maintenance Facilities

☐ Engines or APU and component maintenance facilities

1.8.6 Layout of Premises

☐ Where the accommodation is not owned by the maintenance organisation, as in the case of a hangar where space is rented or shared, proof of tenancy or access is required and should be included in an Appendix or associated document to the MOE.

☐ For line maintenance of aircraft, hangars may be required. In this case, the availability of a suitable hangar should be demonstrated, particularly in the case of inclement weather for minor scheduled work and lengthy defect rectification.

The hangar visit plan requirement is expected to be in MOE chapter 2.22, due to its relationship with the man-hour plan.

1.8.7 Subcontractors Facilities

The level of detail required in this paragraph depends on the extent of subcontracted activities, as agreed with the assigned inspector.

For simple subcontracted tasks (e.g. specialised services), it may be sufficient to refer to the list of subcontractors already included in **MOE 5.2**, where each subcontractor is identified.

Where assembly or repair activities and/or the issuance of certificates of release to service are carried out at a subcontractor's facilities, a layout of the subcontractor's facilities intended to be included as part of the approval shall be provided in this paragraph.

1.9 Maintenance Organisation Intended Scope of Work

Reference: 145.A.10, AMC1 145.A.10, GM1 145.A.10, 145.A.20(a), 145.A.20(b), AMC1&2 145.A.20, 145.A.42(b)3, AMC1 145.A.42(b)3, AMC1 145.A.45(b), GM1 145.A.45(b), 145.A.70(a)9, GM1 145.A.70, 145.A.75(a), 145.A.75(b), 145.A.75(c),145. A.75(d), 145.A.75(e), 145.A.75(f), Appendix II, Appendix III

This MOE chapter must show the range of work carried out at each approved site. Where a maintenance organisation is performing maintenance in multiple locations, the corresponding scope of work should be detailed for each site. This should also relate to MOE chapter 1.8 and 5.3 in such a way that it can be clearly seen which specific tasks are performed at each location. Limitations to the scope of approval may apply in the case of small organisations.

1.9.1 Aircraft Maintenance

The following table is an example of the scope of aircraft maintenance.

Rating	Type Certificate Holder	Aircraft Type/Group	Limitation	Model	Maintenance Level (up to and including following)	Base	Line
A1	AIRBUS	Airbus A300 basic model (GE CF6)	Airbus A300 basic model	A300 C4-203	Daily check		X
A1	AIRBUS	Airbus A300 basic model (PW JT9D)	Airbus A300 basic model	A300 B2-320	Weekly check excluding defect rectification		X
A1	AIRBUS	Airbus A318/A319/A320/A321 (CFM56)	Airbus A318 /A319/A320/A321	A318-111 A321-111 A321-212	750 FH/750 FC/ 4 months		X
A1	ATR-GIE Avions de Transport Régional	ATR 42-400/500/72-212A (PWC PW120)	ATR 42-400/500/72-212A	ATR 42-400 ATR 42-500	5000 FH/3000 FC/ 2 YRS	X	
A1	BOEING	Boeing 777-200/300 (GE90)	Boeing 777-200/300	777-200	112000 FH/30000 FC/12000 days	X	X
A1	BOEING	Boeing 737-300/400/500 (CFM56)	Boeing 737-300/400/500	737-500	2A check		X
A1	BOEING	Boeing 767-200/300 (PW 4000)	BOEING 767-200/300/400	767-200	4C check	X	X
A2	BOEING	Boeing 767-200/300/400 (GE CF6)	BOEING 767-200/300/400	767-200	Weekly checks		X
A2	LAVIA ARGENTINA S.A. (LAVIASA)	Piper PA-25 (Lycoming)	Piper PA-25	PA-25-235	100H/Annual check	X	
A3	AIRBUS HELICOPTERS	Eurocopter AS 355 (RR Corp 250)	Eurocopter AS 355	AS355 E AS355 F1	Daily		X
A4	NIL	NIL	NIL	NIL	NIL		

Note:

- FH = Flight hours
- FC = Flight cycles
- YRS = Years
- Aircraft Type/Group Rating = Full aircraft type or group rating
  For example, for Airbus A321-212 aircraft, enter “Airbus A318/A319/A320/A321 (CFM56)”
- Limitation: this corresponds to Aircraft model registered in Thailand
- (Aircraft) Model = Only the models which are maintained
- Maintenance Level = Scope of maintenance activity agreed by CAAT:
  - The limitation relative to the maintenance checks/tasks should use the naming convention as referenced in the TC holder data (e.g. MRB/MPD).

- In cases of unforeseen maintenance such as, but not limited to, major repairs and modifications that are not already described within this chapter, the maintenance organisation must contact CAAT.
- The maintenance level is intended to specifically identify the maximum extent of routine maintenance allowed. Defect rectification, out of phase tasks, SB, deferred items, etc., are considered included in the line and/or base maintenance scope of work, subject to the decision-making process to be described in MOE chapter 2.28. A maintenance organisation not intending to perform defect rectification should exclude this in MOE chapter 1.9.
- Limitations to unscheduled line maintenance or base maintenance capabilities should be stated (e.g. excluding structural repairs and excluding landing gear replacement).
- In the case of line maintenance, a clear definition is required of the line maintenance as applicable to the particular maintenance organisation, considering the regulatory limitations included in AMC1 145.A.10 and the actual capability held.

For further guidance, refer to the Guidance Material for Aircraft Maintenance (CAAT- GM-AIR-513).

1.9.2 Engine Maintenance

The following table is an example of the scope of engine maintenance.

Rating	Engine/APU Limitation	Engine/APU Model	Maintenance Level
B1	HONEYWELL TFE731-20 Series	TFE 731- 20AR TFE731-20BR	Modules turbine exchange
B1	GE CF6-80E1 Series	GE CF6-80E1A1 GE CF6-80E1A2	All Modules repair
B1	PWC 545 Series	PWC 545A PWC 545C	Repairs IAW CMM hot section inspection
B2	CONTINENTAL A-65 Series	A-65-14J A-65-3	O/H
B3	HONEYWELL 85 Series	85-115 Series 85-37 Series	Minor repair in accordance with CMM 49-XX-XX

Note:

For engines only, the following should be mentioned in this table:

- Engine/APU Limitation= Engine type as listed in the engine TCDS and applicable for Thai registered aircraft
- Engine/APU Model = Engine models as listed in the engine TCDS. Only the models which are maintained by the maintenance organisation need to be listed.
- Maintenance Level = Scope of work agreed by CAAT. References to the relevant maintenance data must be made.
- When the maintenance performed under a B1 rating is limited to boroscope inspections, the MOE should specify the engine types associated with the boroscope technique limitation.

For APU only, the following shall be mentioned in this table:

- APU Type = Self explanatory
- Limitation = APU models as defined by the OEM. Only the models which are maintained by the maintenance organisation need to be listed.
- Maintenance level = Scope of work agreed by CAAT. References to the relevant maintenance data must be made.

- When the maintenance performed under a B3 rating is limited to boroscope inspections, the MOE should specify the APU types associated with the boroscope technique limitation.

1.9.3 Component Maintenance

This MOE chapter should specify the component manufacturer or the particular component and/or cross refer to a referenced capability list. The part number, the level of work performed, and the CMM reference should be included.

Rating	ATA	Part Number	Designation	Manufacturer	Reference of the CMM	Level of Maintenance	Workshop
C1 Air Condition and Pressurisation	21						
C2 Auto Flight	22						
C3 Communication and Navigation	34						
C4 Doors and Hatches	52						
C5							
…							
C22							

Note:
For C rating, the following should be mentioned:

- Rating = Relevant class C rating
- ATA = ATA specification 2200 chapter
- Part Number, Designation and Manufacturer = Detailed reference number and designation of the component together with identification of the Manufacturer as per the CMM
- CMM = Reference of the component maintenance manual (or equivalent document)
- Level of Maintenance = Scope agreed by CAAT
- Workshop = Base maintenance shop where maintenance takes place

When a maintenance organisation is managing a separate capability list the information addressed above should be mentioned in this list. In this case, MOE chapter 1.9 should only address the rating. The ATA chapter number should refer to the capability list reference (see table below).

Rating	ATA Chapter	Part Number
C1 Air Condition and Pressurisation	21	Components in accordance with the capability list reference XXXX
C2 Auto Flight	22	
C3 Communication and Navigation	23-34	
C4 Door and Hatches	52	

Rating	ATA	TC Holder Name	Propeller Limitation	Part Number
C16 Propeller	61			Components in accordance with the capability list reference XXXX
	61			

The List, whether included with or separated from the basic MOE, is an integral part of the approval. This means that it should be approved directly by CAAT or by the maintenance organisation through a procedure previously approved by CAAT (refer to MOE chapter 1.10 and 1.11).

1.9.4 Specialised Services Maintenance

1.9.4.1 NDT with D1 Rating

When the maintenance organisation intends to perform NDT tasks and release tasks using a CAAT Form 1, a D1 rating is necessary. Under a D1 rating, the capability to perform maintenance is determined by the NDT method listed in the terms of approval, regardless of the specific aircraft, engine or component which is subject to the inspection method.

The following table is an example of the scope of NDT methods.

Rating	Limitation	Detail of Limitation
D1	Liquid penetrant (PT)	Techniques in accordance to the NDT Manual, reference XXXXX, approved by the responsible NDT Level 3
	Magnetic particle (MT)	
	Eddy Current (ET)	
	Ultrasonic (UT)	
	Radiography (RT)	
	Thermography (IRT)	
	Shearography (ST)	

Note:
For D1 rating, the following should be mentioned:

- Rating = D1
- Limitation = NDT method to be quoted

1.9.4.2 NDT without D1 Rating ("in the course of maintenance")

Where the maintenance organisation intends to perform NDT tasks under another approved rating (e.g. as part of the maintenance carried out on aircraft under rating A1, engines under rating B1, or components under a C rating), the NDT tasks are considered to be done in the "course of maintenance".

- ☐ Where the maintenance organisation does not need to hold a D1 rating, the various NDT methods applied in the course of maintenance should be listed in this paragraph.
- ☐ Where the maintenance organisation holds a fixed NDT capability (e.g. personnel, facility, equipment) at different specific sites or workshops, this information has to be stated.
- ☐ The same requirements in place for being approved under the D1 rating remain applicable.

For further guidance, refer to Guidance Material for Non-Destructive Testing (NDT) Qualification (CAAT-GM-AIR-516).

1.9.4.3 Other Specialised Activities

- ☐ Each specialised maintenance task, such as but not limited to, composite repairs*, painting, welding, machining, Non-destructive Inspection (NDI), should be detailed in this paragraph.
- ☐ Specialised services maintenance should be detailed for each approved site and workshop.

The following table is an example of the scope of other specialised activities.

Specialised Activity	Reference Data	Location/ Workshop
Cd plating	AMS2401	Workshop 7
Heat treatment	BAC 5602	Workshop 3

Specialised maintenance tasks may need to be carried out under specific conditions. For example, aircraft painting is considered to be a base maintenance task and, therefore, a base maintenance scope of approval is required in addition to listing such activity in this MOE chapter.

* For further guidance on how to develop the composite repair procedure, refer to Guidance Material – Composite Repair Workshop (CAAT-GM-AIR-514).

1.9.5 Maintenance Away from the Approved Locations

☐ If applicable, this paragraph should refer to circumstances where the maintenance organisation may perform works away from the approved locations, subject to the condition specified in MOE chapter 2.32: Specific Maintenance Procedures (Maintenance away from the approved locations).

This privilege is approved based upon the ability of the compliance monitoring system to deal adequately with the TCAR AIR Part-145 requirements. This ability, therefore, cannot be demonstrated at the time of the initial approval. In any case this procedure cannot be detailed in the MOE and, therefore, approved by CAAT before the first 2-year period has been completed.

1.9.6 Parts Fabrication

☐ If applicable, this paragraph should refer to circumstances where the maintenance organisation may fabricate parts in the course of maintenance, subject to the conditions specified in MOE chapter 2.30 (Fabrication of parts).

☐ The fabrication of a part is to be considered under an approved rating (e.g. as part of the maintenance carried out on aircraft under rating A1, engines under rating B1, and components under a C rating).

For further guidance, refer to the Guidance Material for Fabrication of Parts (CAAT-GM-AIR-512).

1.9.7 Component Maintenance Under Aircraft or Engine Rating

☐ GM1 145.A.45(b) describes the typical maintenance data intended to be used depending upon the class rating approval held by the maintenance organisation.

This paragraph is optional and only intended to cover cases where CAAT agrees on the use of other maintenance data to that specified in GM1 145.A.45(b) (e.g. an Ax rated maintenance organisation wishing to use engine or component maintenance data on-wing, a Bx rated maintenance organisation wishing to use component or aircraft maintenance data)

☐ Conditions for the use of maintenance data which is not clearly intended for the rating held by the maintenance organisation:

- Justification to CAAT on the need for this privilege
- Procedures to assess that the task is within the technical capability of the maintenance organisation (e.g. staff, tools, maintenance data, materials)
- Assessment of the need to develop maintenance instructions for the use of the particular maintenance data in order to record precisely the part of the maintenance task effectively carried out (e.g. a B1 rated maintenance organisation using the AMM will not take care of circuit breaker deactivation in the cockpit and should not record this task as being done by the maintenance organisation)
- Where applicable, procedures to liaise with the Ax rated maintenance organisation being responsible for some parts of the task, when a Cx or Bx maintenance organisation* are working on-wing (e.g. circuit breaker deactivation)
- Procedures entailing possible CRS limitations (e.g. leak test needed by the Ax maintenance organisation following a task carried out by the Cx or Bx maintenance organisation)
- Procedures to cover cases where the same maintenance task is available in different maintenance data with different allowed defects. In such cases, the maintenance organisation can only use the particular maintenance data if it is clearly specified in the work order (e.g. a Bx must not use the AMM under its own decision, when the same task is available in Engine Maintenance Manual (EMM))
- Training needs for the use of maintenance data and in the particular maintenance environment (e.g. a Cx or Bx rated maintenance organisation working on-wing in an aircraft line or base maintenance environment)

Note: *The possibility for a Cx or Bx maintenance organisation to work on-wing using AMM data must be carefully assessed. Those maintenance organisations are clearly limited to work at component or engine level carried out on-wing, respectively. It is unreasonable and to be considered outside their scope of approval to perform AMM tasks which are clearly outside the particular component or engine capability.

For example, a Cx or Bx maintenance organisation must not perform any task in the cockpit, even if it is related to verifying the serviceability of the component or engine on which the maintenance organisation is working. They must not perform any deactivation task at aircraft level such as circuit breaker deactivation, etc.

1.9.8 Engineer on board

This paragraph is optional and only intended to cover case where CAAT agrees to the use of engineer on board who will perform Aircraft Maintenance Release to Service (Ax Ratings) at the location not approved as the line maintenance location in the scope of work.

The table below indicates the additional procedures should be added into particular MOE chapter which requires prior approval by CAAT.

Chapter	Title	Topic	Reference
PART 1	**GENERALS**		
1.6	List of Certifying staff and support staff	MOE should identify, – List of authorised persons for maintenance engineer on board, or – how to identify who is authorised for maintenance engineer on board.	145.A.35

Chapter	Title	Topic	Reference
1.8	General description of the facilities at each address intended to be approved	MOE should specify storage conditions of tools, parts, consumables when stored in the line station iaw Part-145 requirements	145.A.25
1.9	Maintenance Organisation Intended Scope of Work	MOE should specify, – scope of work for maintenance engineers on board the aircraft – routes with maintenance engineer on board (line stations where the maintenance engineer on board may perform maintenance) – limited to some line maintenance tasks (i.e.: wheel change) – list of line selected stations should indicate maintenance engineer on board as needed – maintenance engineer on board is considered as a passenger and cannot perform any maintenance in flight (from the time aircraft doors are closed until the time they are open)	145.A.10
1.10	Procedure for Changes Requiring Prior Approval by CAAT	MOE should specify, – how to notify CAAT regarding location to be used an Engineer On-Board – prior evaluation or audit by Compliance monitoring function – change required prior approval	145.A.75 145.A.85 145.A.200
PART 2	**MAINTENANCE PROCEDURE**		
2.8	Maintenance Instructions and Relationship to A/C & Manufacturer's Instruction	MOE should specify how the maintenance engineer on board access to maintenance data – i.e. EFB – i.e. flight kit – checklist	145.A.45
2.18	Occurrence Reporting	MOE should specify how maintenance engineer on board reports occurrences (iaw the operator's and the AMO's procedures)	145.A.60
2.24	Reference to Specific Maintenance Procedures	MOE should specify if there is specific procedure for Engineer On-Board	145.A.45
2.28	Production Planning Procedures	MOE should specify, – how the organisation plans maintenance engineer on board maintenance activity iaw human factors principle ○ duty time versus flight time & rest time ○ shift duration – how maintenance engineers on board are supported by the organisation	145.A.47
PART L2	**ADDITIONAL LINE MAINTENANCE PROCEDURES**		
L2.1	Line Maintenance Control of Aircraft Components, Tools, Equipment, etc.	1. MOE should specify storage conditions of tools, parts, consumables when stored in the line station iaw Part-145 requirements 2. For tools and equipment, MOE should specify,	145.A.25 145.A.40 145.A.42

Chapter	Title	Topic	Reference
		– how the maintenance engineer accesses tooling, consumables o i.e. toolbox in the flight kit o i.e. consumables in the flight kit o i.e. consumables or specific tooling in the line station – how control of tools & consumables is performed 3. For component and consumable material, MOE should specify, – how the maintenance engineer access spare parts and consumables o i.e. parts in flight kit o i.e. parts stored in the line station – how control to spare parts is performed – how parts removed from the aircraft are controlled	
L2.2	Line Maintenance Procedures Related to Servicing, Fueling, De-icing, etc.	MOE should specify if there is specific procedure for Engineer On-Board	145.A.45
L2.4	Line Procedures for Completion of Technical Log	MOE should specify – how the maintenance engineer on board issues releases to service iaw the operator's procedures (technical log) – how maintenance records are filled, controlled and stored	145.A.50 145.A.55
PART 3	**MANAGEMENT SYSTEM**		
3.2	Internal Safety Reporting and Investigations	MOE should specify reporting scheme for errors, near misses applicable to maintenance engineers on board. – number of reports – analysis of reports – mitigation actions – recurrent training syllabus	145.A.202
3.5	Management of Changes	MOE should specify how safety management function performs safety analysis before such operations (Engineering On-Board of each line location) are initiated. – Safety report – SAG – feedback to the accountable manager	145.A.200
3.6	Safety Training and Promotion	MOE should specify reporting scheme for errors, near misses applicable to maintenance engineers on board. – recurrent training syllabus	145.A.200 145.A.202
3.8	Compliance Monitoring	MOE should specify how maintenance performed by engineer on board is audited by the compliance monitoring function	145.A.200

Chapter	Title	Topic	Reference
		– The audit plan should feature scheduled and unscheduled audits – Audit reports – feedback to the accountable manager	
3.9	Certifying Staff and Support Staff Qualifications and Training Procedures	MOE should specify, – how maintenance engineers on board are managed by the organisation (When not in flight, all requirements are applicable to the maintenance engineer on board) – interactions between maintenance engineers on board with MCC & engineering – authorisation for maintenance engineer on board – qualification criteria applicable to maintenance engineer on board ○ authorisation with explicit scope of work ○ training requirements ○ experience requirements ○ recurrent training syllabus ○ competency assessment	145.A.30 145.A.35
3.18	Competency Assessment of Personnel	MOE should specify the procedure of competency assessment for qualification criteria applicable to maintenance engineer on board.	145.A.30
PART 5	**SUPPORTING DOCUMENTS**		
5.1	Sample of Documents	MOE should identify if there are form or checklist developed and related to Engineering on board.	
5.3	List of Line Maintenance Locations as per 145.A.75(d)	MOE should, – identify routes with maintenance engineer on board (line stations where the maintenance engineer on board may perform maintenance) – list of line selected stations should indicate maintenance engineer on board as needed	145.A.10

In the case of no specific Engineer on board procedure, the engineer shall follow procedure in MOE.

1.10 Procedure for Changes (including MOE Amendment) Requiring Prior Approval by CAAT

Reference: 145.A.15(a), 145.A.15(b), AMC1 145.A.15, AMC1 145.A.48(a), 145.A.70(a)10, 145.A.85(a), 145.A.85(b), AMC1 145.A.85, AMC2 145.A.85, GM1 145.A.85, GM1 145.A.85(a)1, GM1 145.A.85(a)2, GM1 145.A.85(b)

1.10.1 Definition and Notification of Changes Requiring Prior Approval

The maintenance organisation must notify CAAT of any proposal to carry out any of the changes listed below before such changes take place.

- ☐ When to notify the change. All changes need to be notified before being implemented
- ☐ Cases where an internal audit by the compliance monitoring function is required
- ☐ Who in the maintenance organisation is responsible for the notification

For further guidance, refer to Guidance Material for Completion of TCAR AIR Part-145 Form 2 (CAAT-GM-AIR-504).

The table below indicates the type of changes which requires prior approval by CAAT.

When the organisation is not granted the possibility to manage changes not requiring prior approval as per MOE chapter, all the possible changes shall be subject to prior approval and included in this chapter/table below.

Type of Change	Examples of Change	Documentation provided to CAAT
Address		
Change of organisation name		– CAAT Form 2 – Certificate of Incorporation – MOE – Associated documents as applicable
Change to the locations or facilities of the maintenance organisation with or without amendment to the scope or capability	– PPB address change; – Address change of any maintenance site already approved; – Additional or cancellation of maintenance sites;	– CAAT Form 2 – Certificate of Incorporation in the case of PPB change – MOE – Associated documents as applicable
Personnel		
Change of the Accountable Manager or Nominated Persons identified in the MOE chapter 1.3	For guidance on when CAAT nominated personnel is required, refer to GM for Maintenance Organisation Management Personnel (CAAT-GM-AIR-505)	– CAAT Form 2 – MOE – Associated documents as applicable
Reduction or increase of the staff numbers when the variation: – Is more than 25% of the total staff number declared in the MOE 1.7 or; and Is affecting the approval. Note: permanent and contracted staff shall be considered.	– Reduction of 26 staff when the staff to maintain the CAAT approval was 100. – All certifying staff for a certain aircraft type approved under A1 rating leave the organisation. – Change from 3 staff to 10 staff (change affecting for small organisation)	– CAAT Form 2 – MOE – Associated documents as applicable – List of certifying staff

Type of Change	Examples of Change	Documentation provided to CAAT
Capability		
Reduction or increase in the scope of work or scope of approval under an Ax rating	– Addition/removal of an Ax rating – Addition of a new aircraft to the Ax scope of approval – Extension of the scope of approval from line to base maintenance – Extension of the maintenance level check from daily to A check for an aircraft already included in the approval – Addition of an engine type associated with an A/C type/model inside an Ax rating already approved	– CAAT Form 2 – MOE – Associated documents as applicable
Reduction or increase in the scope of work or scope of approval under a Bx rating	– Addition/removal of a Bx rating; – Addition of a new engine type to the Bx scope of approval – Extension of the maintenance level check from repair to overhaul for an engine already included in the approval	– CAAT Form 2 – MOE – Associated documents as applicable
Reduction or increase in the scope of work or scope of approval under a Cx rating	Addition of a P/N to the accepted capability which requires a new Cx rating	– CAAT Form 2 – MOE – Associated documents as applicable – Capability list
Addition or cancellation to the approved/accepted capability list where the “C” rating is held and any additional component capability is of similar technology & within exiting ATA chapter capability (Refer to MOE chapter 1.9)		– CAAT Form 2 – MOE – Associated documents as applicable – Capability list
Addition to or cancellation of NDT methods under D1 rating		– CAAT Form 2 – MOE – Associated documents as applicable
Addition of any specialised services under any rating in the course of maintenance	– Addition of welding capability under any rating – Addition of painting capability under any rating – Addition of heat treatment capability – Addition of tap test	– CAAT Form 2 – MOE – Associated documents as applicable

Type of Change	Examples of Change	Documentation provided to CAAT
Procedures		
Any change to the procedures that could affect the approval		– CAAT Form 2 – MOE – Associated documents as applicable
AltMoC		
Use of an alternative means of compliance	Deviations from the AMC to TCAR AIR Part-145	– CAAT Form 2 – MOE – Associated documents as applicable

1.10.2 Pre-audit and Compliance Monitoring Manager Statement

For an initial approval and change of approval applications, the maintenance organisation should carry out an internal pre-audit in accordance with the MOE chapter 3.8: Compliance Monitoring, prior to the CAAT audit.

This internal pre-audit should confirm that processes, areas, activities and personnel subject to the application have been reviewed showing satisfactory compliance with all applicable TCAR AIR Part-145 requirements.

The relevant audit report, together with a statement of compliance from the Compliance Monitoring Manager, shall be provided to the assigned inspector, demonstrating how the organisation will comply with the requirements established in TCAR AIR Part-145. This should include evidence of managing the safety risks and conducting a risk assessment related to the change.

The requirement to have such a internal pre-audit carried out as part of any application for change, should be addressed in a procedure under MOE chapter 1.10.

1.10.3 Approval Process of Changes Requiring Prior Approval

MOE and associated procedures/list shall be reviewed on a regular basis to ensure that they remain an up-to-date description of the organisation and comply with any amendment of the applicable CAAT regulations. The initial issue of the MOE and/or any associated procedures/lists shall be approved by CAAT.

The fact that prior approval of a document has been granted does not mean that the document is exempt from further technical review by the assigned inspector. Such reviews may be conducted on sampling basis, and findings may be raised after a document approval if non-compliances with applicable CAAT regulations are identified.

Furthermore, a CAAT approval does not exempt the maintenance organisation from continuoysly monitoring the approved documents and raising internal findings if any non-compliance is identified.

Note: when the MOE chapter 1.11 does not include a procedure to set the scope of changes not requiring prior approval, any amendments to the MOE and/or associated procedures/lists shall be subject to prior approval by CAAT.

- ☐ Person responsible for amending MOE and associated procedures/list
- ☐ Definition of criteria for new issue and/or revision (e.g. depending from the MOE revision system numbering adopted as described in this GM, paragraph 1.6.4 “Management control of the MOE”)

1.10.4 Management Control of the Approval

This paragraph is intended to describe how the Compliance Monitoring controls the TCAR AIR Part-145 approval,

- ☐ Record of approvals issued by CAAT
- ☐ Record of internal approvals issued by the maintenance organisation under indirect approval privileges
- ☐ Process to ensure maintenance personnel only have access to the approved MOE/associated procedures/lists.
- ☐ Description of the process in place to control amendment of the applicable regulations and GM, assess their impact on the organisation's procedures/lists, and, when applicable, revise those procedures/lists within the established entry into force date

The Compliance Monitoring is responsible to assess any revision of the applicable regulations and GM for their impact on the organisation's procedures/lists. CAAT expects that a traceable evidence is in place to record implementation of this process to be confident that the organisation's procedures/lists finally comply with any applicable requirement.

1.10.5 Changes Not Requiring Amendment of the Approval

- ☐ In cases where the maintenance organisation temporarily does not hold all the necessary tools, equipment, materials, maintenance data, etc., CAAT must be informed to determine if a need exists to amend the approval, or if it may be maintained subject to further conditions.

1.11 Procedures for Exposition Amendments and Changes Not Requiring Prior Approval by CAAT

Reference: AMC2 145.A.15, GM1 145.A.15(b), 145.A.70(a)10, 145.A.65(b)2, AMC1 145.A.65, AMC1 145.A.65(2), 145.A.70(a)11, 145.A.70(a)12, 145.A.70(b), 145.A.70(c), 145.A.85(a), 145.A.85(b), 145.A.85(c), GM1 145.A.85, AMC1 145.A.85, Appendix III

This procedure is optional and intended to describe the approval process of changes not requiring prior approval. This privilege may be granted to the organisation for certain changes to the organisation or amendments of the MOE and/or associated procedures, by delegating the approval to the Compliance Monitoring function.

Such a delegation is to be based upon the ability of the Compliance Monitoring function to deal adequately with the TCAR AIR Part-145 requirements.

1.11.1 Definition of Changes Not Requiring Prior Approval

As a general principle, the following examples may be considered for changes not requiring prior approval:

- ☐ Correction of type errors on any document
- ☐ Amendment of an associated procedure not affecting the approval
- ☐ Addition or cancellation of P/N in the approved capability list where the TCAR AIR Part-145 "C" rating is held and any additional component is of similar technology & within existing ATA chapter capability
- ☐ Renewal of C/S authorisation date in the C/S list
- ☐ Addition/removal of a subcontractor not affecting the approval
- ☐ Addition/removal of a contracted organisation not affecting the approval

1.11.2 Summary Table of Documentation Which Constitutes the Approval

The maintenance organisation needs to decide the structure of the MOE and particularly if there is a need to use associated procedures/lists. Criteria to guide the maintenance organisation in this decision is provided in the GM (par. 1.6 MOE Structure).

A table has to be included in this paragraph summarizing the documents which are part of the approval and identify the ones where CAAT has agreed that certain changes can be managed without prior approval by CAAT.

- ☐ Type of document part of the approval (column 1) - Enter the document type
- ☐ Document reference (column 2) - Specify for each document a unique identification
- ☐ Identification whether the related document can be changed without prior approval by CAAT (column 3)
- ☐ Who is approving the document (column 4) – Specify for each document the person or entity that is authorised to approve the document
- ☐ Definition of changes which can be done without prior approval by CAAT (column 5) - Specify for each document the changes which can be done without prior approval (as agreed with the assigned inspector)
- ☐ Remarks (column 6) - Specify any relevant remark (e.g. where the organisation provides continuous access to document thought their IT system)

The following table is an example of the associated procedures and lists which can be managed without prior approval by CAAT .

Type of Document	Document Reference	Indirect Approval (Yes/No)	Detail of Changes	Approved by
MOE	CAAT Doc 1	YES	Correction of Typing errors	Compliance Monitoring Manager
Associated Procedures Manual				
Safety Management Manual				
Certifying staff and Support staff list				
Workshop capability list				
List of Subcontractors				
List of Line Maintenance Locations				
NDT Written Practice				
Associated Procedures Manual*				
(…)				

* When the organisation develops several associated procedures (e.g. Tools calibration procedure, Alternative tools procedure, Components storage, personnel training, HF procedure, workshop production planning, critical maintenance tasks, etc.) those procedures shall be gathered into a single Associated Procedures Manual to ease and speed up the approval process by CAAT.

1.11.3 Approval Process of Changes Not Requiring Prior Approval

- ☐ Definition/scope of changes not requiring prior approval. This definition has to be agreed with the allocated inspector and formalised in the table included in the MOE 1.11.2 (column 5).
- ☐ Internal process followed to get the approval from the authorised person;
- ☐ The person responsible for the internal approval of documents (ref. MOE 1.11.2 table column 4)
- ☐ When the documents become valid

Generally, the document becomes valid immediately after internal approval by the maintenance organisation

After this 2-year period the maintenance organisation must demonstrate its ability to manage the compliance monitoring system in order to be eligible for such a privilege. In any case, CAAT must continue to receive a copy of all such minor changes when indirectly approved.

1.11.4 Notification of Changes Not Requiring Prior Approval

The allocated inspector shall be given access to any document not requiring prior approval. This objective can be achieved in various means, according to the following criteria:

- ☐ Document provided by the organisation using file transfer (e.g. mail, data transfer, etc.)
  The organisation shall notify the CAAT via EMPIC of any document approved under this procedure as soon as practicable requesting an acknowledgment receipt which is only intended to exclude possible communication problems.

1.12 Procedures for Alternative Means of Compliance.

Reference: 145.A.120(a), 145.A.120(b), AMC1 145.A.120(b), GM1 145.A.120

This chapter is optional and intended to describe the possibility to apply for an alternative means of compliance in compliance with Item 3 of the Notification of the Civil Aviation Authority of Thailand on Acceptable Means of Compliance (AMC) to Repair Station Certificate Requirements B.E. 2563 (2020).

Such option is to be based upon the ability of the Compliance Monitoring to deal adequately with the TCAR AIR Part-145 requirements..

While organisations are encouraged to follow the published CAAT AMCs and GMs, and there is a presumption that this would meet compliance with the applicable requirements, organisations may choose to propose, and use, subject to approval by CAAT, alternative means of compliance.

- ☐ procedure for assessing AltMoC
- ☐ definition of scope and objectives
- ☐ identification of the applicable requirements affected and demonstration of compliance with these
- ☐ identification of the person responsible for AltMoCs
- ☐ Procedure to apply for an alternative means of compliance

The application for an AltMoc is to be issued with an CAAT Form 2. Any AltMoc shall be approved by the CAAT with the approval of the Exposition including the listed AltMoc in chapter 5.5 .

- ☐ Procedure for monitoring the effectiveness of AltMoC
- ☐ Cross-reference to documents affected

PART 2 MAINTENANCE PROCEDURE

2.1 Supplier Evaluation and Subcontract Control Procedure

Reference: 145.A.42(b)1, GM2 145.A.42(b)1, GM3 145.A.42(b)1, 145.A.42(b)2, 145.A.42(b)3, 145. A.75(b), AMC1 145.A.75(b), GM1 145.A.75(b), 145.A.205(a)1, 145.A.205(a)2, 145.A.205(b), GM1 145.A.205, GM2 145.A.205

2.1.1 Types of Provider

The following definitions are used in this Part:

Providers - Any source of components, materials, and maintenance services external to the maintenance organisation. A provider may fall into one of the following categories:

- Supplier
- Contracted organisation
- Subcontracted organisation

Suppliers – Any source providing components, standard parts or materials to be used for maintenance. Possible sources could be: TCAR AIR Part-145 organisations, operators, distributors, brokers, aircraft owners, etc. This excludes suppliers of tools and tool calibrations services, which should be described in MOE chapter 2.4. The list of suppliers must be managed under the control of the Compliance Monitoring Department.

Contracted organisation – TCAR AIR Part-145 maintenance organisation that carries out maintenance under its own approval for another approved maintenance organisation. The list of contracted organisations should be included in MOE chapter 5.4.

Subcontracted organisation – An organisation, not itself approved to TCAR AIR Part-145, that carries out:

- Aircraft line maintenance
- Minor engine maintenance;
- Maintenance of other aircraft components
- Specialised service as a subcontractor

for an organisation approved under TCAR Part145, 145.A.75(d). The list of subcontracted organisations should be included in MOE chapter 5.2.

☐ Definition of suppliers of materials, standard parts, & components:
  - Sources of supplies (e.g. constructor, original manufacturer (OEM), distributor approved by the manufacturer, retailer, airline)
  - Types of supplies (e.g. components, consumables, standards, materials, ingredients)

☐ Definition of contracted organisations:
  - Sources of services (e.g. TCAR Part 145 approved maintenance organisations and related approved ratings)
  - Types of services (e.g. specialised work, line maintenance, component maintenance)

☐ Definition of subcontracted organisations:
  - Sources of services (non-TCAR AIR Part-145 approved organisations)
  - Types of services (e.g. specialised work, line maintenance, component maintenance)

2.1.2 Supplier Evaluation

The use of suppliers, which are certified to officially recognised standards, does not exempt the organisation from its obligation to ensure supplied components and material are in satisfactory conditions and meet the applicable criteria of TCAR AIR Part-145 regulation.

Supplier evaluation may depend upon different factors, such as:

- Type of component
- Whether or not the supplier is the manufacturer of the component, the TC holder or a maintenance organisation
- Specific circumstances such as aircraft on ground

This evaluation may be a questionnaire from the maintenance organisation to its suppliers, a desktop evaluation of the supplier's procedures, or an on-site audit, as deemed necessary.

- ☐ Initial approval of each type of supplier:
  - Selection process
  - Internal acceptance process
  - Issuance of the internal authorisations (e.g. scope of authorisation, validity)
  - Establishing the list of suppliers, contracted organisations and subcontractors
  - Internal distribution of the list – access/authorisation of the list
- ☐ Monitoring of the lists of each type of supplier compared to internal authorisations:
  - The list of suppliers should be managed by the Compliance Monitoring Department
  - Incoming inspection results, audit results, possible internal limitations etc.
  - Assessment of the services provided
  - Updating of the lists
  - Withdrawal of the internal authorisations, where applicable
- ☐ Management of purchase orders according to approved suppliers
- ☐ Records of supplier information:
  - Files
  - Duration/location
  - Type of documents (e.g. certificates, audit reports, incoming inspection results)

2.1.3 Monitoring Contracted Organisations

A process similar to the case of monitoring suppliers may be adopted.

- ☐ Initial approval of each contracted organisation
- ☐ Hazard identification and risk management of contracted activities
- ☐ Monitoring of the lists of each type of contracted organisation compared to internal authorisations, refer to MOE chapter 5.4
- ☐ Management of purchase orders according to the approved contracted organisation
- ☐ Coordination and reporting lines between the maintenance organisation and the contracted organisation
- ☐ Records of contracted organisations information

2.1.4 Monitoring Subcontractors

- ☐ Initial approval of each subcontractor:
  - Pre-audit before approval and inclusion in the internal audit plan
  - Hazard identification and risk management of subcontracted activities

- Approved maintenance organisation expertise and procedures to control the subcontractor
- Supervision of the inspection and release from the sub-contractor
- Contract must allow CAAT access to the sub-contractor

☐ Monitoring of the lists of each type of subcontractor compared to internal authorisations, refer to MOE chapter 5.2
☐ Management of the purchase orders according to the approved subcontractors
☐ Coordination and reporting lines between the maintenance organisation and the subcontracted organisations, including compliance monitoring audits
☐ Records of subcontractor information

2.2 Acceptance/Inspection of Aircraft Components and Materials and Installation

Reference: 145.A.42(a)1, 145.A.42(a)2, 145.A.42(a)3, 145.A.42(a)4, 145.A.42(a)5, 145.A.42(b)1, 145.A.42(b)2, 145.A.42(b)3, AMC1 145.A.42(a)1, AMC1 145.A.42(a)2, AMC2 145.A.42(a)4, AMC1 145.A.42(b)1, GM1 145.A.42(b)1, GM1 145.A.42(b)2

This MOE chapter should describe the procedures for receiving components, parts, and materials from outside the maintenance organisation, such as from suppliers, contracted organisations, etc.

2.2.1 Classification and Definitions

☐ Serviceable components
☐ Unserviceable components
☐ Standard parts
☐ Raw and Consumable materials
☐ Unsalvageable components

2.2.2 Component/Material Certification

This paragraph should describe the release documents to be expected or accepted for each type of part or material depending upon their status (new or used). It is recommended to develop a table listing all the cases as shown in the example below.

☐ New Parts

Status "NEW"	
Type of Part or Material	**Expected Documents**
Standard parts Materials	**Option 1:** When the part or material is purchased directly from the manufacturer, the Certificate of Conformity (CoC) issued by the manufacturer is expected; **Option 2:** When the part or material is purchased through a third-party supplier (e.g. distributor, operator, maintenance organisation), the accompanying documentation must contain: – Conformity certification to the part or material applicable standard or specification – identification of the manufacturing source – Identification of the supplier source Option 2 information may be included in one single CoC, issued by the supplier containing cross references to the manufacturer CoC. It may also be satisfied by more documents, such as the CoC issued by the manufacturer plus a statement from the supplier source. For both options, the manufacturer CoC must be made available upon request.
Aircraft parts	CAAT Form 1 or one of the following equivalent authorised release certificates: – EASA Form 1 with status "new"; – FAA Form 8130-3 with status "new"; – TCCA Form 1 or TCCA 24-0078 with status "new"; – ANAC Form F-100-01 or ANAC form SEGVÔO 003 with status "new"; – UK CAA Form 1 with status "new". issued in accordance with applicable production standards and certifying that the parts have been manufactured in conformity to approved design data and are in a condition for safe operation. For new parts designed and manufactured in the United States of America under the Part Manufacturer Approval (PMA), FAA Form 8130-3 will be considered as equivalent only if it is a non-critical component. A statement that the part is a non-critical component must be contained in the "Remarks" Block of the authorised release certificate.

☐ Used Parts

Status "USED"	
Type of Part or material	**Expected Documents**
Aircraft parts	CAAT Form 1 or equivalent: – An authorised release certificate issued by an organisation under the terms of a bilateral agreement signed by CAAT. – An authorised release certificate equivalent to CAAT Form 1 as follows: • EASA Form 1 • FAA Form 8130-3 under bilateral agreement conditions: EASA Part 145.A.50 release to service (dual release) • TCCA Form 1 or TCCA 24-0078 under bilateral agreement conditions: EASA Part 145.A.50 release to service (dual release)* • ANAC Form F-100-01 or ANAC form SEGVÔO 003 under bilateral agreement conditions: EASA Part 145.A.50 release to service (dual release) • UK CAA Form 1 under bilateral agreement conditions: EASA Part 145.A.50 release to service (dual release)

* Except for TCCA Form One or TCCA 24-0078 in (c) issued after 16 November B.E. 2567 (2024), which comply with Canadian Aviation Regulation (CAR) 571 or 573, or any general aviation aircraft, which are not operated in accordance with General Aviation Requirement - Part 2 Large and Turbojet Aeroplane Operations of the Notification of CAAT on General Aviation Operations Requirements B.E. 2568 (2025), the Foreign Authorised Release Certificates mentioned in (a) to (e) are acceptable without EASA Part 145.A.50 Release to Service condition."

In addition, the maintenance organisation should describe the specific requirements applicable to PMA parts, life limited parts, used parts, etc.

2.2.3 Receiving Inspection Procedures

☐ Components, Materials and Standard Parts received from external sources

The procedures for acceptance of components, standard parts and materials should have the objective of ensuring that they are in satisfactory condition and meet the maintenance organisation's requirements. These procedures should be based upon incoming inspections.

☐ Physical inspection of components, standard parts and materials should verify the following:
- Accompanying documentation should contain the applicable specification or standard, part number, batch number, supplied quantity, and the manufacturing sources
- General condition of components and their packaging in relation to damages that could affect integrity
- Shelf life of the component has not expired

- Items are received in the appropriate package in respect of the type of component, e.g. correct ATA 300 or electrostatic sensitive devices packaging, when necessary
- Components have all plugs and caps appropriately installed to prevent damage or internal contamination. Care should be taken when tape is used to cover electrical connections, fluid fittings or openings because adhesive residues can insulate electrical connections and contaminate hydraulic or fuel units
- Materials or standard parts received in batches should be supplied in a package. The packaging should state the applicable specification or standard, part number, batch number and the quantity of the items. If the material is acquired from different batches, acceptance documentation for each batch should be provided

☐ Review of accompanying documentation and data:
- Compliance with order or condition
- Conformity with company requirements (e.g. type of release requested, sources)

☐ Identification of parts or material after receiving inspection (e.g. tag)
☐ Traceability of parts or materials to the related documentation (e.g. internal tracking number)
☐ Receiving inspection records
☐ Quarantine procedures
☐ Modification standard and AD compliance
☐ Identification of storage limitation or life limits
☐ Components received in Aircraft-on-Ground (AOG). These parts are normally received directly at the AOG location and dedicated procedures need to be in place.
☐ Receiving inspection of components from internal sources (e.g. transfer between stores, from the workshops):
- Conformity with company requirements
- Records
- Required documentation
- Compliance with order, conditions
- Quarantine procedures
- Identification of storage limitation or life limits
- Internally fabricated parts
- Components removed serviceable from aircraft

☐ Procedures for treatment of a suspected unapproved part (bogus part):
- Identification
- Records
- Notification to CAAT
- Forms used (refer to MOE chapter 2.18)

2.2.4 Installation of Components, Standard Parts and Materials

☐ Procedures for verification of components, standard parts and materials prior to installation

Components, standard parts and materials should only be fitted when specified in the applicable maintenance data. This could include an Illustrated Parts Catalogue (IPC), SB, AMM, etc.

Therefore, the installation of a component, standard part, or material may only be carried out after verifying the applicable maintenance data.

This check should ensure that the part number, modification status, limitations, etc., of the component, standard part or material are the ones specified in the applicable maintenance data of the particular aircraft or component (e.g. IPC, SB, AMM, CMM) where it is going to be installed.

The maintenance organisation should establish procedures to ensure that this check is performed before installation, including:

- ☐ Verification that the applicable maintenance data specifies the particular component, standard part or material
- ☐ verification of satisfactory condition and appropriate documentation for installation
- ☐ verification that a component is eligible to be fitted when a different modification and/or AD configuration may be applicable
- ☐ verification prior to installation of standard parts on an aircraft or component (e.g. traceability, applicable standard as per maintenance data requirement)
- ☐ verification prior to use of any raw or consumable material on an aircraft or component (e.g. due dates, applicable specification as per maintenance data requirement)

2.3 Storage, Tagging and Delivery of Components to Maintenance

Reference: 145.A.25(d), AMC1 145.A.25(d), 145.A.42(a), AMC1 145.A.42(a)1, AMC1 145.A.42(a)3, 145.A.42(c), AMC1 145.A.42(c), GM1 145.A.42(c)1

2.3.1 Storage Procedures

- ☐ Procedures for maintaining satisfactory storage conditions according to manufacturer's recommendations for:
  - aircraft components
  - consumables and raw materials
  - Special storage requirements (conditions and limitations) e.g. ESD sensitive devices, rubber
  - Flammable fluids
  - Engines
  - Bulky assemblies
  - Record of position in the stores
- ☐ Segregation between serviceable, unserviceable and unsalvageable

Unserviceable components should be identified and stored in a secure location under the control of the maintenance organisation until a decision is made on their future status.

- ☐ Systems and procedures to control shelf life, life limits and modification standards.
- ☐ Access to storage facilities restricted to authorised personnel

2.3.2 Tagging

- ☐ Procedures for tagging and labelling of components, standard parts and materials:
  - Serviceable components
  - Unserviceable components

The unserviceable status of a component should be clearly stated on a tag together with the component identification data and any information useful to define actions necessary to be taken. Such information should state, as applicable, in-service times, maintenance status, preservation status, failures, defects or malfunctions reported or detected, exposure to adverse environmental conditions, and if the component was installed on an aircraft involved in an accident or incident. Means should be provided to prevent unintentional separation of this tag from the component.

- Standard parts
- Raw and Consumable materials
- Unsalvageable components
- Mutilation before disposal

Mutilation should be accomplished in such a manner that the components become permanently unusable for their original intended use. Mutilated components should not be able to be reworked or camouflaged to provide the appearance of being serviceable, such as by re-plating, shortening and rethreading long bolts, welding, straightening, machining, cleaning, polishing or repainting.

When, in agreement, with the component owner, the component is disposed of for legitimate non-flight uses, such as training and education aids, research and development, or for non-aviation applications, mutilation may not be appropriate. In such cases, the component may be marked indicating that it is unsalvageable, or the original part number or data plate information can be removed or a record kept of the disposal of the component.

- Records of certified life-limited or other critical components scrapped/mutilated and information provided to original manufacturer
- Quarantine

2.3.3 Release to the Maintenance Process

The release documents expected for components, standard parts and materials are described in MOE chapter 2.2.

☐ Issue of components, standard parts and materials, to the maintenance process (control, identification and batch segregation)

2.4 Acceptance of Tools and Equipment

Reference: 145.A.40(a)1, AMC1 145.A.40(a), 145.A.40(b), AMC1 145.A.40(b)

This MOE chapter should describe procedures for the acceptance of new, maintained, modified, calibrated tools/equipment and also lent/hired tooling.

☐ Tools and equipment acceptance procedures:
- Sources
- Conformity with company requirements (e.g. certification)
- Records

☐ Incoming inspection for tools:
- Required documentation
- Compliance with orders/conditions
- Quarantine procedures
- Internal identification

- Verification of necessary controls/calibration

☐ Monitoring of tool service providers:
- Selection process
- Internal authorisation process
- Monitoring of the internal authorisations (e.g. scope of authorisation, validity)
- Withdrawal of an internal authorisation
- List of tool service providers

A list of tool service providers (inspection, servicing and calibration) must be established, and:
- is not considered an MOE associated list and can be managed under the direct control of Compliance Monitoring Department.
- should be kept separately from the list of suppliers of materials, standard parts and components used in the maintenance process, as described in MOE chapter 2.1. However, the two lists may be also combined provided that the definitions given in MOE chapter 2.1 for suppliers also include the additional case of tool service providers.

For further guidance, refer to the Guidance Material for Tools and Equipment (CAAT- GM-AIR-511).

2.5 Calibration of Tools and Equipment

Reference: 145.A.40(b), AMC 145.A.40(b)

This MOE chapter should describe all the procedures related to the controls, revisions, modifications, checking and calibration of tools and equipment, including:

☐ Inspection, servicing and calibration program; equipment and calibrated tool register
☐ Establishment of inspection, servicing and calibration time periods and frequencies
☐ Person/department responsible for the calibration program, the register, the follow-up, time period and frequencies (link between departments if necessary)
☐ Identification of servicing/calibration due dates
☐ Management of personal or loaned calibrated tools
☐ Procedure for tools found out of tolerance during calibration (feedback to production, safety assessment, process to identify affected components/products and to inform the customer/operator for further actions in case of safety concerns, etc.).

For further guidance, refer to the Guidance Material for Tools and Equipment (CAAT-GM-AIR-511).

2.6 Use of Tooling and Equipment by Staff (including alternative tools)

Reference: 145.A.40(a)1, 145.A.40(a)2, AMC1 145.A.40(a), 145.A.40(b), AMC 145.A.40(b)

☐ Distribution of tools:
- Record of user
- Location of use

☐ Determining tool serviceability prior to issue
☐ Training and control of personnel in the use of tools and equipment (records of training)
☐ Personal (own) instruments/tools control
☐ Loan tool control and audit
☐ Control of alternative tools:
- Demonstration of equivalence between design/manufacturing data of alternative tools and the data/features of the tools recommended in the maintenance data of

the manufacturers
- In-house identification rule of alternative tools (e.g. P/N, S/N)
- Alternative tools validation process
- Register of alternative tools, tagging and relationship between the references of original tools and alternative tools.
- Treatment of possible changes of maintenance data according to the new references of alternative tooling (e.g. modifications limited to the references of the tooling to be used or adaptation of maintenance data regarding alternative tooling)
- Use, storage and maintenance manuals according to the need
- In-house approval of each alternative tooling before servicing
- Storage of the records of alternative tooling

For further guidance, refer to the Guidance Material for Tools and Equipment (CAAT-GM-AIR-511).

2.7 Procedure for Controlling Working Environment and Facilities

Reference: 145.A.25(d), AMC 145.A.25(d), AMC 145.A.47(a), 145.A.60(a)

☐ Organisation of the cleaning of the facilities:
- "Foreign Object" exclusion program
- Cleaning program
- Individual responsibilities
- Timescales
- Waste material disposal
- Special procedure for some facilities (e.g. painting, white room, parts cleaning)
- Segregation of facilities to prevent cross contamination

☐ Environmental control of working environment
- Guidance on the effects of environmental factors in maintenance can be found in ICAO Doc.9824 Human Factors Guidelines for Aircraft Maintenance Manual.

2.8 Maintenance Data and Relationship to Aircraft & Aircraft Component Manufacturer's Instructions, including Updating and Availability to Staff

Reference: 145.A.45.(a), 145.A.45.(b)1, 145.A.45.(b)2, 145.A.45.(b)3, 145.A.45(b)4, 145.A.45(b)5, 145.A.45(d), 145.A.45(e), 145.A.45(f), 145.A.45(g), AMC1 145.A.45(e), AMC1 145.A.45(f), AMC1 145.A.45(g)

This MOE chapter should describe the management of all the technical documentation in use within the maintenance organisation.

It should clearly identify the various types of documentation in use (external or internal origin), to be controlled by the maintenance organisation, in order to perform the intended scope of work. The documentation may be divided in two main groups identified in the paragraphs below.

2.8.1 Maintenance Data Coming from External Sources

This MOE paragraph should identify the applicable maintenance data in use coming from external sources such as TC holders, STC holders and regulatory authorities (instructions for continued airworthiness, AD, SB, etc.).

☐ Control of Maintenance data obtained directly from the author (ADs, SBs, SIL, CMM, AMM, ESM, etc.):
- Subscriptions control

- Technical library
- Issue and amendment control

☐ Control of customer supplied maintenance data

☐ Procedures to ensure all applicable maintenance data is readily available for use when required by maintenance personnel

In the case of an Initial Issue or Change of a maintenance organisation approval for Cx ratings, the maintenance organisation should demonstrate having direct access to the TCH or OEM maintenance data. This means:

a) the maintenance organisation has a subscription for the maintenance data directly with the TC holder or OEM; or

b) In the case of operator provided data, the maintenance has direct access to the TC holder or OEM to verify the revision status of the documentation provided by the customer (e.g. typical example would be that the TC holder or OEM provides this information freely available in its website). In addition, the conditions specified below apply:

1. A contract should be in place detailing the responsibilities for ensuring the availability and update of the maintenance data from the operator and formal authorisation for the use of such data.
2. The maintenance data is available at the time of the audit by CAAT.
3. MOE chapter 1.9 is limited as necessary (to the specific operator) and a notification is made according to MOE chapter 1.10 when the contact is terminated/cancelled as this may affect directly the approval.

2.8.2 Documentation and Maintenance Instructions Issued by the Maintenance Organisation

This procedure should describe the various types of maintenance instructions, which may be developed by the maintenance organisation originating from the maintenance data (e.g. AMM, CMM).

MOE chapter 2.13 should describe the templates and their use in the maintenance process, while MOE chapter 2.8 is intended to cover the procedure on how to ensure that maintenance data is correctly transcribed into work instructions. Specific instructions from manufacturer maintenance data related to Critical Design Configuration Control Limitations (CDCCL) should be considered.

☐ Modification of maintenance instructions by the maintenance organisation, if applicable

☐ Maintenance instructions issued in conformity with approved data in order to facilitate or customise the maintenance (work card or work sheet, engineering orders, technical specifications, etc.) as applicable:

- Paper or computer-generated work cards and related amendment controls
- Qualification requirements for staff involved in the preparation or approval of work cards or work sheets, etc.
- Incorporation of best practices and human factors principles:
  - "complex or long maintenance tasks" subdivided into clear stages to allow the recording of what was actually accomplished by each individual
  - differentiation of disassembly, accomplishment, reassembly, testing tasks
  - compliance and traceability with Fuel Tank Safety (FTS) or CDCCL instructions

'Complex or long maintenance tasks' refers to tasks involving multiple disciplines or multiple shifts, or multiple zones/access opening, special tools etc., or a combination of theses. The stages into which the work cards are to be subdivided should refer to where work can be interrupted. Subdivision should also indicate when a different discipline continues to work if no separate work cards are provided.

☐ Documentation issued for internal information purposes (e.g. quality information bulletins,

quality alerts, occurrence investigation reports) as applicable:
  - Procedures to ensure awareness by staff
- ☐ Control of information:
  - Technical library
  - Issue or amendment controls.

2.9 Acceptance, Coordination and Performance of Repair Works

Reference: 145.A.42(b)3, 145.A.45(a), 145.A.48(c)4, AMC 145.A.50

This MOE chapter describes how the maintenance organisation is performing repairs on aircraft, components and engines according to already available maintenance data and how it is managing repairs not described in the manufacturers' documentation.

The privilege given to develop modified maintenance instructions as described in MOE chapter 2.8, excludes the engineering design of repairs and modifications.

- ☐ Repairs according to already available maintenance data:
  - Repairs in accordance with AMM, SRM, CMM or other maintenance data published by the TC holder, STC holder, etc.
  - Internal processes in use and forms to manage the repairs
- ☐ Repairs requiring a new approval (not already included in the available maintenance data):
  - Repairs in accordance with new maintenance data issued by the TC holder, STC holder, etc.
  - Acceptance of minor or major repair approvals. It is recommended to develop a table listing the various cases
  - Work orders
  - Internal processes in use and forms to manage the repairs
  - Maintenance instructions (job cards, etc.)
- ☐ Control of the scope of work versus the requested repair (limitations and conditions)
- ☐ Acceptance of standard changes and standard repairs, if applicable to the scope of work

2.10 Acceptance, Coordination and Performance of Scheduled Maintenance Works

Reference: AMC1 145.A.50(f)

This MOE chapter is primarily applicable for maintenance under Ax ratings in relation to establishing compliance with the operator's maintenance programme. However, it can also be adopted for maintenance under Bx and Cx ratings when necessary to clarify the terms under which scheduled maintenance is to be defined for an engine or component starting from the work order received from the customer.

A procedure should explain how the maintenance organisation ensures the operator's maintenance program is integrated into the contract for aircraft maintenance. Dedicated procedures applicable to each customer operator should be included in MOE Part 4 or associated documents.

- ☐ Identification of the maintenance program under which the maintenance has to be carried out.
- ☐ Maintenance program access by the maintenance organisation as part of the work order or contract.
- ☐ Procedure to ensure a CRS is issued in compliance with the approved operator's maintenance program. This procedure may cross-refer to MOE chapter 2.16.

The CRS should relate to the task specified in the TC holder's, STC holder's, operator's instructions or the aircraft maintenance program, which itself may cross-refer to maintenance data.

- ☐ Maintenance organisation support provided to the operator in order to substantiate a deviation request from the maintenance program.

Deviations from the maintenance program and related approval by CAAT is intended to be described in the MOE chapter 3.15.

2.11 Acceptance, Coordination and Performance of Airworthiness Directives

Reference: 145.A.42(b)2, 145.A.45(b)2, GM1 145.A.42(b)2, GM1 145.A.50(a)

The follow-up of ADs is the responsibility of the owner/operator who is also responsible for requesting their enforcement on the work order sent to the maintenance organisation. The maintenance organisation is then responsible to embody the ADs which have been ordered.

It is necessary to make a difference between the activities of management / launching of ADs on behalf of the customers and the one carried under the Part-145 approval.

Only the AD related activities which concern TCAR AIR Part-145 approval have to be described in the MOE, with particular reference to the following points:

- ☐ Identification of the responsibilities of the maintenance organisation with regards to ADs, such as but not limited to establishing compliance with the following:
  - Procedures for control of ADs applicable to components in the stores of the maintenance organisation:
    - When the airworthiness control is directly ensured by the owner or operator, the maintenance organisation should demonstrate that a contract is in place, attributing the responsibilities related to ADs to such owner or operator. This also applies to components directly delivered by the operator to line stations.
    - When the maintenance organisation retains control of the airworthiness status of components (e.g. the maintenance organisation owns the component), it should ensure that all applicable ADs are embodied to the parts they have in store. The maintenance organisation should employ qualified staff for the analysis of ADs, issuing internal work orders, and performing AD compliance follow-up.
  - Procedures to access, hold and use applicable current ADs (e.g. ordered by the customer, needed for the control of components in store).

This procedure may also refer to a procedure included in MOE chapter 2.8 endorsing this requirement.

  - Verification that, prior to installation on an aircraft, a component is eligible to be fitted when a different AD configuration may be applicable.

This procedure may also refer to a procedure included in MOE chapter 2.2 endorsing this requirement.

  - Procedures to ensure that a CRS is not issued in cases of any non-compliance, which is known to endanger flight safety (e.g. overdue AD known by the maintenance organisation)

These procedures may also refer to procedures included MOE chapter 2.16 endorsing this requirement.

- ☐ Accomplishment of aircraft, components, engines ADs, work orders specifying the status of the document to be used
- ☐ Awareness of the mandatory character of the associated maintenance data
- ☐ Identification of the mandatory requirement in the maintenance documentation

2.12 Acceptance, Coordination and Performance of Modification Works

Reference: 145.A.45(d), 145.A.48.(c)4, AMC1 145.A.45(d)

This MOE chapter should refer to optional modifications to be embodied on aircraft, engines and components, under TCAR AIR Part-145 approval.

The follow-up of an optional modification is the responsibility of the operator who must ask for its enforcement on the work order sent to the maintenance organisation. Only the activities above which concern the TCAR AIR Part-145 approval have to be presented in the MOE.

The privilege to develop modified maintenance instructions (as described in MOE chapter 2.8), excludes the engineering design of repairs and modifications.

Maintenance procedures should be established to ensure that damage is assessed and modifications and repairs are carried out using data specified in 145.A.48(c)(4).

- ☐ Company policy:
  - Sources of modification approval (TC Holder, etc.)
  - Embodiment of modifications, including STCs
- ☐ Control of the scope of work (limitations or conditions)

2.13 Maintenance Documentation Development, Completion and Sign-off

Reference: 145.A.45(e), 145.A.45(f), 145.A.45(g), 145.A.55(a)1, GM1 145.A.48

It is recommended to structure this MOE chapter in separate paragraphs as indicated below with clear differentiation between each individual rating in the scope of work (e.g. aircraft, engines, components, and specialised services)

2.13.1 Templates in Use to Record Maintenance

This procedure should identify the process of issuing and updating all the various templates in use by the maintenance organisation to record maintenance, such as work sheets, job cards, non-routine cards, deferred items, etc.

With regards to job cards and work sheets, MOE chapter 2.13 should only describe the templates and their use in the maintenance process, while MOE chapter 2.8 is intended to cover the procedure on how to ensure that maintenance data is correctly transcribed into work instructions.

- ☐ Identification of the templates in use to record maintenance
  This procedure may refer to MOE 5.1 where the forms and templates in use by the maintenance organisation are included
- ☐ Analysis and implementation of revisions to manufacturer data
- ☐ Initial approval and revision of the template

2.13.2 Composition of the work package

This procedure should describe the composition of a standard work package as applicable to the scope of work of the maintenance organisation (e.g. for aircraft maintenance this will be routine work cards, non-routine cards, ADs, SBs, Minimum Equipment List (MEL), deferred items, tally sheets, maintenance release certificates).

- ☐ List of maintenance documents which build up a standard work package (e.g. front page with general information, list of tasks required, work cards, associated work orders, expected CRS)
- ☐ Assembly of work packages for issue to maintenance activities
- ☐ Worksheets for non-routine tasks
- ☐ Assembly of completed work packages for certification
- ☐ Control and use of customer supplied work cards or worksheets

2.13.3 Completion of Maintenance Documentation

This procedure should describe the completion of each of the documents identified in the previous paragraph. This may be done by reference to MOE chapter 5.1, where the related sample document is included together with its related filling instructions.

- ☐ Process of declaring a task not applicable including conditional tasks
- ☐ Process of recording test results and dimensions
- ☐ Process of recording materials or parts replaced together with the related traceability to the accompanying documents
- ☐ Records and management of additional works
- ☐ Records and management of deferred items
- ☐ Process to correct a maintenance record incorrectly entered during the performance of maintenance. Obviously, this cannot be done after CRS issuance.
- ☐ Worksheet or work card completion and maintenance or independent inspection sign-off
  - procedure to ensure correct completion of customer provided work cards (training on customer paperwork, etc.)
- ☐ Use of personal stamps
- ☐ Sign-off policy: summary table for sign-off of tasks*

The procedure should clearly indicate when a task is to be considered signed-off and by which means (e.g. use of personal stamp, use of signature, combination of stamp plus signature).

The sign-off policy is established to assign clear responsibilities for the performance of maintenance tasks, even when a task may be signed-off by more than one person (e.g. additional inspections) or it is signed-off based on tasks carried out by contracted or subcontracted organisations.

Any person performing maintenance must be responsible for the tasks performed. A task can only be signed-off by authorised personnel**

The use of a sign-off summary table, an example of which is shown below, is recommended and should be consistent with the procedures in MOE paragraph 2.25.1 and with the job descriptions identified within the maintenance organisation (e.g. C/S – S/S in MOE chapter 3.9, mechanics in MOE chapter 3.14, qualifying inspectors in MOE chapter 3.13).

Note:
* Sign-off is a statement by the competent person performing or supervising the work, that the task or group of tasks has been correctly performed. A sign-off relates to one step in the maintenance process and is, therefore, different from the release to service of the aircraft.

** Authorised personnel mean personnel formally authorised by the maintenance organisation approved under TCAR AIR Part-145 to sign-off tasks. Authorised personnel are not necessarily C/S.

Type of Task	Task Sign-off by Authorised Personnel	Aircraft/Component/Engine Release to Service
Normal task	Authorised person for the task performed (e.g. mechanic, C/S) or	C/S
	Trainee + Authorised person for the task performed under supervision (e.g. C/S, inspector)	C/S
Critical maintenance task (e.g. one engine installation, one flight control rigging) with error capturing method of independent inspection	Authorised person for the task performed (e.g. C/S, mechanic) + Authorised person for the independent inspection (e.g. C/S, inspector) or	C/S
	Trainee + Authorised person for the task performed under supervision (e.g. C/S, inspector) + Authorised person for the independent inspection (e.g. C/S, inspector)	C/S
Critical or identical maintenance tasks limited to unforeseen circumstances when only one person is available (e.g. dual engine oil uplift, replacement of both cabin pressure controllers on one aircraft) with error capturing method of re-inspection	Authorised person for the task performed (e.g. mechanic, C/S) + Additional record of re-inspection by the same authorised person	C/S
Etc.	Etc.	Etc.

2.14 Technical Records Control

Reference: 145.A.55(a)1, 145.A.55(a)2, 145.A.55(a)3, 145.A.55(a)4, AMC1 145.A.55, GM1 145.A.55, GM1 145.A.55(a)(1), AMC1 145.A.55.(a)3, 145.A.55(e), 145.A.55(f), 145.A.55(g)

- ☐ Composition of maintenance records retained by the maintenance organisation
  - CRS copy as applicable to aircraft, engines, components or NDT ratings (e.g. ATL, base maintenance release, CAAT Form 1)

In the case of aircraft base maintenance, copy of the base maintenance release certificate plus the associated CRS in the aircraft technical logbook system must be kept on record by the maintenance organisation.

  - Copy of any detailed maintenance records associated the work carried out
  - Release documents of components, standard parts installed and consumable or raw materials used

Where release documents are not included in the maintenance records, the maintenance organisation should demonstrate traceability is available, in the maintenance records, to the release documents and that they can be retrieved at any time for all the period to which the records retention requirements apply.

In the case of release documents relating to aircraft components, operator agreement is necessary where those documents are only traceable but not included in the maintenance records provided to the operator.

- ☐ Format of the maintenance records:
  - Paper
  - Computer system and related backup

- ☐ Records storage conditions (fire extinguisher system, fire detection, etc.) and retrieval of records (paper or computer based)

Computer record systems should have at least one backup system, which should be updated within 24 hours of any new entry. Computer record systems should include safeguards to prevent unauthorised personnel from altering the data.

All computer hardware used to ensure the backup of data should be stored in a different location from the one that contains the working data, and in an environment that ensures that the data remains in good condition.

When hardware or software changes take place, special care should be taken to ensure that all the necessary data continues to be accessible through at least the full period specified in the relevant provision.

- ☐ Control of access to records (paper and computer-based records)
- ☐ Lost or destroyed records (reconstruction and CAAT acceptance). This procedure should only be proposed to CAAT in cases where there is an actual need
- ☐ Retention of records:
  - Periods
  - Methods and security

The minimum records retention period is three years.

- ☐ Commitment that all retained maintenance records covering the last three years will be distributed to the last owner or customer of the respective aircraft or component in case the maintenance organisation terminates its operation.

2.15 Rectification of Defects Arising During Maintenance

Reference: 145.A.50(c), 145.A.50(e), AMC1 145.A.50(e)

This procedure is applicable to any rating and intended to describe how new defects or incomplete maintenance work orders identified during maintenance should be brought to the attention of the operator. The purpose of this is to obtain agreement to rectify such defects or for completing the missing elements of the maintenance work order.

In cases where the operator declines to have such maintenance carried out, TCAR AIR Part-145, 145.A.50(e) is applicable in order to issue the CRS with incomplete or deferred maintenance, as addressed in MOE chapter 2.16.

- ☐ Procedure to record defects arising during maintenance analysis of defects and rectification
- ☐ Notification process (where necessary) to the operator, manufacturer and CAAT
- ☐ Report to the operator for approval to commence a rectification according to the contract

2.16 Release to Service Procedure

Reference: 145.A.30(g), 145.A.30(h)1, 145.A.30(h)2, 145.A.30(i), 145.A.30(j)3, 145.A.30(j)4, 145.A.30(j)5, AMC1 145.A.30(j)(4), AMC1 145.A.30(j)(5), AMC1 145.A.30(j)(5)(i), AMC145.A.30(j)(5)(ii), 145.A.35(a), AMC1 145.A.48(a), 145.A.48(b), 145.A.48(c)1, 145.A.48(c)3, 145.A.48(c)5, 145.A.48(c)(5), 145.A.50(a), GM1 145.A.50(a), 145.A.50(b), 145.A.50(c), 145.A.50(d), 145.A.50(e), 145.A.50(f), AMC 145.A.50, AMC1 145.A.50(b), AMC1 145.A.50(d), AMC2 145.A.50(d), GM 145.A.50(d), AMC1 145.A.50(e), AMC1 145.A.50(f), 145.A.55(a)1, 145.A.75(c), 145.A.75(e), Appendix I

The maintenance organisation shall be responsible for the maintenance that is performed within the scope of its approval.

2.16.1 General Requirements of the Release to Service

- ☐ Definition of the CRS statement
- ☐ Minimum information to be contained in the CRS:
  - Basic details of the maintenance carried out (by reference to the maintenance data and related revision status, plus any eventually associated work package or job card as applicable to the product or component being maintained)
  - Date such maintenance was completed
  - Location where the CRS is issued
  - Identity and approval number of the maintenance organisation:
  - Identity of the person issuing the CRS, including:
    - TCAR AIR Part-145 C/S or S/S individual authorisation number (handwritten or stamped) issuing such a certificate
    - Signature of the C/S or S/S issuing such a certificate (may include an electronic signature system when approved by CAAT)
  - Limitations to airworthiness or operations, if any

- ☐ Cross-reference to work packs (e.g. initial work order, additional works) to ensure that all the tasks ordered have been performed
- ☐ General verification carried out after completion of maintenance that the aircraft or component is clear of all tools, equipment and any extraneous parts or materials and that all access panels removed have been refitted
- ☐ Inability to sign a CRS due to hazards to flight safety:
  - AD ordered or known to be applicable which is overdue and not embodied
  - Works which were carried out not in accordance with approved data
  - Discrepancies that may have consequences on the airworthiness of the aircraft, component and engine, etc.
- ☐ Inability to sign a CRS due to an unexpected non-availability of facilities, equipment, tooling materials, maintenance data or certifying staff
- ☐ Particular cases of issuance of CRS for aircraft, engine or components known to be in unairworthy conditions. This procedure is optional and should be only included in cases of real need by the maintenance organisation. A CRS in the cases above might be issued as long as the incomplete maintenance or non-airworthy condition is properly identified in the CRS statement and communicated to the operator (and to CAAT in case of disagreement between the maintenance organisation and the operator on the possibility to issue such CRS):
  - NDT inspections with defects outside limits
  - Need to complete a maintenance work order which leaves the aircraft, engine and components in non-approved configuration (e.g. CRS of an aircraft where the maintenance organisation is only ordered to remove an engine)
  - Need to issue a CRS for a maintenance check flight, where an STC has been incorporated which is not yet approved (e.g. parts installed in prototype status, maintenance performed using data pending approval)
- ☐ Specific to CAAT Form 1. This procedure should, at least, address the following issues:
  - Address to be recorded in CAAT Form 1 Block 4 is the address of the PPB which is reflected in the first page of the CAAT Repair Station Certificate. However, to allow the identification of the maintenance site where this is different from the PPB, the maintenance organisation should ensure a system is in place to retrieve the information where the CAAT Form 1 was issued, starting from the tracking number of the CAAT Form 1 (Block 3)
  - Tracking numbering system of CAAT Form 1 should be described demonstrating a unique number is used;
  - Identification system should enable tracking of the location where the maintenance has been released to service;
  - Recording system must allow easy retrieval of all issued Form 1s;
  - Cancellation or correction of a CAAT Form 1 mistakenly completed or issued.

2.16.2 Aircraft Maintenance Release to Service (Ax Ratings)

- ☐ Issuance and completion instructions for CRS after Base Maintenance (e.g. Maintenance Release Certificate):
  - Responsibilities of the TCAR PEL Part - 66 in category C for C/S
  - Responsibilities of the TCAR PEL Part - 66 in category B1, B2 S/S
- ☐ Issuance and completion instructions of CRS after Line Maintenance
- ☐ Issuance of a CRS with limitations/incomplete work within aircraft limitations as per approved data (e.g. maintenance organisation not in a condition to complete all the maintenance ordered, deferred maintenance, need to perform a Maintenance Check Flight*)

Only the authorised C/S, can decide, using maintenance data, whether an aircraft defect seriously hazards flight safety and therefore decide when and which rectification action must be taken before further flight and which defect rectification can be deferred. However, this does not apply when the MEL is used by the pilot or by the authorised C/S.

Note:
* Maintenance Check Flight (MCF): Certain maintenance data issued by the type certificate holder (e.g. AMM) requires that certain checks/tests are performed in flight as a necessary condition to complete the maintenance ordered. Within the approved aircraft limitations, a C/S should release the incomplete maintenance (taking into account the checks/tests to be performed in flight) before the flight on behalf of the maintenance organisation. After performing the flight and any additional maintenance necessary to complete the maintenance ordered, a CRS should be issued in accordance with 145.A.50(a).

- ☐ Temporary fitting an aircraft component without an appropriate release certificate in AOG condition (e.g. 30 hours of flight, agreement of the customer, acceptable certificate, checking the status of the component, technical log record, corrective action when the aircraft returns to its maintenance base)
- ☐ Release to service for components removed serviceable from aircraft
  - Issuance of a CAAT Form 1 for components removed serviceable from Thai-registered aircraft

  This procedure is optional. If the maintenance organisation intends to have this procedure approved, it should comply with paragraph 2.6.1 of AMC2 145.A.50(d). The intention of this MOE paragraph is that a maintenance organisation may issue a CAAT Form 1 for those components only if compliance with paragraph 2.6.1(a) to 2.6.1(i) of the AMC can be demonstrated.

  - Swap or change over serviceable components between Thai-registered aircraft or between different positions of the same aircraft

  This procedure is optional. A component removed serviceable must be issued a component CRS before being installed in another aircraft or another position on the same aircraft. The CRS may be issued by using a CAAT Form 1 or an internal release document as indicated under paragraph 2.16.3. This procedure should describe how the CRS is issued to ensure compliance with paragraph 2.6.1 of AMC2 145.A.50(d), regardless of the type of CRS the maintenance organisation intends to use (CAAT Form 1 or internal release document).

  - Issuance of a CAAT Form 1 for components removed serviceable from a non-Thai registered aircraft.

  This procedure is optional. It is only applicable when paragraph 2.6.2 of AMC2 145.A.50(d) applies.

- ☐ CRS in the case of one-off authorisation. MOE chapter 3.4 specifies the related qualification requirement.
  - Notification to CAAT
  - Definition of records to be kept and location of records
  - Task re-checked when it affects flight safety

2.16.3 Components/Engines/APUs Maintenance Release to Service (Cx/Bx Ratings)

- ☐ Issuance and completion instructions for CRS after components, engines or APUs maintenance (CAAT Form 1):
  - Responsibilities of the components, engines or APU C/S
  - CRS on internal tags (if applicable)
  - CAAT Form 1 issued for unserviceable components undergoing a series of maintenance processes (limitations to be entered in Block 12) (if applicable)
- ☐ Particular cases of issuance of a CRS by using an internal release document instead of a CAAT Form 1.

The use of this procedure is limited to cases where the maintenance organisation maintains a component for use by the same organisation, subject to the acceptance of the operator. The CRS on an internal release document must contain the same level of information included in the CAAT Form 1 and must be issued by an appropriately authorised C/S:

  - Case 1: This procedure may be used under Cx or Bx ratings
  - Case 2: A possible application of this procedure under Ax ratings is to allow issuing the component CRS in the case of swap or change-over of serviceable components between Thai-registered aircraft without need for issuing a CAAT Form 1.

- ☐ Issuance of a CRS with limitations or incomplete work within engine, APU or component limitations as per approved data (e.g. a maintenance organisation is not in a condition to complete all the maintenance ordered, deferred maintenance, operator approval)

2.16.4 NDT Release to Service (D1 Rating)

- ☐ Issuance and completion instructions of CRS after NDT (CAAT Form 1):
  - Responsibilities of NDT C/S
- ☐ Issuance of a CRS with limitations or incomplete work within aircraft, engine, APU and component limitations as per approved data (e.g. a maintenance organisation is not in a condition to complete all the maintenance ordered, deferred maintenance, operator approval)

2.17 Records for the Operator

Reference: 145.A.55(a)2, 145.A.55(a)3

- ☐ Composition of maintenance records to be provided to the operator
- ☐ Contracted record keeping for operators and arrangements for processing and retention of operator's maintenance records

This procedure is only applicable where a maintenance organisation is retaining records on behalf of the operator according to TCAR AIR Part-M requirements (Original Aircraft Technical Logbooks, Life limited parts records, etc.).

2.18 Occurrence Reporting

Reference: 145.A.60(a), 145.A.60(b), 145.A.60(c), 145.A.60(d), AMC1 145.A.60, AMC2 145.A.60, GM1 145.A.60(b), 145.A.60(e), 145.A.60(f), Requirement of the CAAT No.22

2.18.1 Mandatory Occurrences

The internal occurrence reporting system is intended to collect all the reports generated internally by the maintenance organisation and those received from external sources, such as operators, subcontractors. etc.

This MOE chapter shall describe the mandatory reporting to CAAT, the customer/CAMO, and the type certificate holder or Original Equipment Manufacturer (OEM) of the aircraft or component of any safety-related event or condition identified by the organisation that endangers, or that, if not corrected or addressed, could endanger an aircraft, its occupants, or any other person. This includes, in particular, any accident or serious incident.

All maintenance personnel are responsible for reporting occurrences through the internal safety reporting system described in MOE 3.2.1. The scheme shall identify the occurrences to be reported in accordance with the list and method described in this chapter.

- ☐ List of reportable occurrences as per GM1 145.A.60(c):
  - Include the notification to CAAT of all cases where an occurrence is originated as a result of maintenance carried out by the maintenance organisation, regardless of the registration of the aircraft or customer and besides any other reporting responsibility to other NAAs responsible for the approval under which the maintenance was carried out.

    An example is a situation where the maintenance organisation is made aware of a technical incident relating to a non-Thai customer immediately following maintenance carried out by the organisation itself, for example where an incorrect assembly of aircraft parts by the maintenance organisation was identified as the cause of the incident.

- ☐ Method to report occurrences to CAAT using Thailand's Aviation Safety Occurrence Reporting Portal (www.caat.or.th/occurrence):
  - Reporting Suspected Unapproved Parts (SUP)
- ☐ Methods for reporting to:
  - CAAT
  - Organisation responsible for the continuing airworthiness of that aircraft;
    For events or conditions that affect aircraft components, reporting to the entity that requested the maintenance.
  - Organisation responsible for the design
  - Operator/Owner of aircraft
- ☐ Report status:
  - The table below or equivalent should be included in this section, and one of the reporting statuses listed below should be populated when a report (initial notification or subsequent) is submitted:

Closed on issue	Report closed by the reporting organisation at first issuance, if the investigation is closed (justification for closure added in the narrative section).
Open	The report is still open. Only initial information has been received, and the investigation is underway.

Closed (after investigation completed)	An investigation has been completed, and a proposed action plan exists and has been implemented or is under implementation.

- ☐ Confidentiality safeguard for the identify of the reported and the persons mentioned in the report
- ☐ Reporting timescale (including initial notification, follow-up/analysis and investigation closure)
- ☐ Reports must contain pertinent information and evaluation of results (where known)
- ☐ Report fields required to be populated
- ☐ Person responsible for reporting (reference can be based to the safety reporting scheme in MOE 3.2.1)
- ☐ Occurrences reported by subcontractors
- ☐ Follow-up report

This report is intended to provide details of the actions the organisation intends to take to prevent similar occurrences in the future and shall be made as soon as those actions have been identified.

2.18.2 Voluntary Occurrences

This procedure must describe voluntary reporting. This reporting is intended to feed the safety reporting scheme described in MOE 3.2.1.

- ☐ Voluntary reporting method

2.19 Return of Defective Aircraft Components to Store

Reference: 145.A.42(a)3

This MOE chapter should refer to the processing of parts returned by maintenance teams to the store.

- ☐ Aircraft components received in serviceable status but found defective at installation (e.g. involvement of the Compliance Monitoring for investigation, possible need to report the occurrence as per MOE chapter 2.18)
- ☐ Labelling and handling of unserviceable components (link between involved departments)
- ☐ Labelling and handling of unsalvageable components (link between involved departments)

2.20 Defective Components to Outside Contractors

Reference: 145.A.75(b)

This MOE chapter should refer to the process of sending components to outside contractors for repair or modification, and only applicable when the maintenance organisation sending or contracting component maintenance to:

- Contracted TCAR AIR Part-145 approved organisations. This should be reflected in MOE chapter 2.1 and the contracted organisations listed in MOE chapter 5.4; and
- Subcontracted organisations not holding a TCAR AIR Part-145 approval. This should be reflected in MOE chapter 2.1 and the subcontractors listed in MOE chapter 5.2.

- ☐ Dispatch of components for maintenance
- ☐ Identification of required work
- ☐ Return of the serviceable component after maintenance at the contractor or subcontractor facility. Control of dispatch, location and return
- ☐ Return of unserviceable loan parts
- ☐ Management of the packaging and special transportation conditions (e.g. wheels, oxygen bottles)

2.21 Control of Computer Maintenance Records Systems

Reference: 145.A.45(e)

This MOE chapter should refer to the computer systems used to manage or record information regarding the maintenance tasks carried out. This MOE chapter should not be confused with MOE chapter 2.14, which is intended to cover the record keeping requirement addressed in TCAR AIR Part-145, 145.A.55.

- ☐ Description of the computer records systems in use and relate objectives (e.g. software tools tracking on-going maintenance in the hangar)
- ☐ Information retrieval
- ☐ Back-up systems (frequency, means, and delay) and second site storage (frequency, means and delay)
- ☐ Security and safeguards to prevent unauthorised access

2.22 Control of Man-Hour Planning versus Scheduled Maintenance Work

Reference: 145.A.25(a)1, 145.A.25(a)2, AMC1 145.A.25(a), 145.A.30(d), AMC1 145.A.30(d), 145.A.47(b), 145.A.47(c)

- ☐ Maintenance man-hour plan, considering maintenance activities carried out outside the scope of the TCAR AIR Part-145 approval:
  - Reviewed at least every 3 months and updated when necessary
  - Covering all staff (e.g. C/S, inspectors, mechanics, planners, quality auditors)

Attention should be given to the situation when the same person is acting with different roles during a particular maintenance check. In such cases the man-hour plan for the particular maintenance check should consider this aspect to ensure the person is allocated enough time to carry out the necessary activities required for each of the different roles they undertake and appropriate consideration is given to human performance limitations.

- ☐ Hangar visit plan versus man-hour plan

The hangar visit plan should be made available to demonstrate sufficiency of hangar space to carry out planned base maintenance. The relationship between the hangar visit plan and the man-hour plan should be described. The hangar visit plan should also include non-commercial air transport or other activities.

- ☐ Management system of company planning versus time available (e.g. aircraft or components base maintenance activity)
- ☐ Type of planning (man hours availability versus work load)
- ☐ Type of factors in the planning:
  - Human performance limitations
  - Complexity of work
  - Additional factors
- ☐ Planning revision process
- ☐ Organisation of shifts
- ☐ Use of contracted* personnel

Note:
* Contracted means the person is employed by another organisation and contracted by that organisation to the maintenance organisation.

In order to ensure organisation stability, at least half the staff that perform maintenance in each workshop, hangar or flight line on any shift should be employed by the maintenance organisation. For the purpose of meeting a specific operational necessity, a temporary increase in the proportion of contracted staff may be permitted by CAAT, in accordance with an approved procedure to be included in this MOE chapter. This must describe the extent, specific duties, and responsibilities for ensuring adequate organisation stability.

- ☐ Procedure to manage risks of work force unbalances
  - Actual staff available at a lower than planned level for any shift or period
  - Temporary increase in contracted staff for specific operational needs
- ☐ Notification must be made to the Compliance Monitoring Manager and Accountable Manager of deviations exceeding 25% between the work load and the man hour availability.

2.23 Critical Maintenance Tasks and Error-capturing Methods

Reference: 145.A.48(c)2, AMC1 145.A.48(c)2, AMC2 145.A.48(c)3, AMC3 145.A.48(c)2, AMC4 145.A.48(c)2, GM1 145.A.48(c)

2.23.1 Critical Maintenance Tasks

- ☐ Definition of critical maintenance task

Critical maintenance task means a maintenance task that involves the assembly or any disturbance of a system or any part of an aircraft, engine or propeller that, if an error occurred during its performance, could directly endanger flight safety.

- ☐ Procedures to identify a list of critical maintenance tasks defined by the maintenance organisation (e.g. tasks that may affect aircraft stability control systems such as autopilot or fuel transfer, tasks that may affect the propulsive force of the aircraft including installation of engines, propellers, rotors):
  - Persons responsible to amend the list
  - Data sources used to identify and amend the list of critical maintenance tasks (e.g. TC holder data, occurrence reporting, results of audit, feedback from training)

This procedure should ensure that critical maintenance tasks are reviewed to assess their impact on flight safety. The list of critical maintenance tasks should be customised to the scope of work of the maintenance organisation and may contain critical tasks peculiar only to certain aircraft or components. This list may be included into a separate document under the control of the Compliance Monitoring Manager.

The list of critical maintenance tasks should be subject to continuous evaluation and when necessary amended by the maintenance organisation as the result of maintenance error investigations, audit, TC holder data analysis, etc.

When the operator defines its own list of critical maintenance tasks, the effective independent inspection tasks to be carried out are the independent inspections required by the TCAR AIR Part-145 MOE plus the ones required by the operator.

2.23.2 Error-capturing Methods

This MOE paragraph should identify and detail the management of each possible error-capturing method in use by the maintenance organisation.

- ☐ Identification of the error-capturing methods to be used:
  - The primary error-capturing method to be used should be the independent inspection
  - Re-inspection (limited to unforeseen cases when only one person is available)
- ☐ Independent inspection procedure. The requirements of AMC4 145.A.48(c)2 should be addressed:
  - Definition of independent inspection
  - Personnel authorised for the independent inspections, detailed in MOE chapter 3.13
- ☐ How to perform an independent inspection:
  - What has to be checked (e.g. all those parts of the system that have actually been disconnected or disturbed must be inspected for correct assembly and locking)
  - How a task requiring independent inspection is signed-off, refer to MOE chapter 2.13
- ☐ Reinspection procedure, refer to AMC4 145.A.48(c)2:
  - Definition of reinspection
  - How to perform a reinspection by the same person.
  - How to record the identification and the details of the reinspection

2.24 Reference to Specific Procedures

Reference: AMC1 145.A.35(a), 145.A.45(a)

- ☐ Maintenance outside the approved locations

For further guidance, refer to the Guidance Material for Aircraft Maintenance (CAAT-GM-AIR-513)

- ☐ Special maintenance tasks:
  - Engine run up
  - Aircraft pressure run
  - Aircraft towing
  - Aircraft taxiing
  - Technical wash
  - Control or supervision of de-icing systems
  - MCF

2.25 Procedures to Detect and Rectify Maintenance Errors

Reference: 145.A.48(b), 145.A.48(c)3, AMC1 145.A.48(c)3, GM1 145.A.48(c)3

This MOE chapter should describe procedures to minimise the risk of multiple errors and errors being repeated in identical maintenance tasks compromising more than one system or function. Maintenance errors may also be detected as part of the occurrence reporting system, for example following internal or external occurrence reports investigation. This process should be described in MOE chapter 2.18.

2.25.1 Procedures to Minimise the Risk of Multiple Errors and Preventing Omissions

Consistency with MOE 2.13 chapter (sign-off policy) should be ensured.

- ☐ Policy to ensure every maintenance task is signed-off only after completion
- ☐ Describe how the grouping of tasks for the purpose of sign-off allows critical steps to be

clearly identified

☐ Procedures to ensure work performed by non-authorised personnel (e.g. temporary staff, trainees) is checked and signed-off by an authorised person

2.25.2 Procedures to Minimise the Risk of Errors Being Repeated in Identical Maintenance Tasks Compromising more than One System or Function

☐ Criteria to define identical maintenance tasks

The objective is to ensure no person is required to perform a maintenance task involving removal/installation or assembly or disassembly of several components of the same type fitted to more than one system on the same aircraft or component during a particular maintenance check.

2.25.3 Identification of Methods in Use to Minimise Risks

☐ Planning methods (only applicable to identical maintenance tasks)

This paragraph should address GM1 145.A.48(c)3 describing how the planning methods are used to minimise the risk of errors being repeated in identical maintenance tasks by planning the work for different authorised persons for the same task in different systems.

☐ Identification of the error-capturing methods to be used (the specific procedure on how each error capturing method is accomplished should be detailed in the MOE chapter 2.23)

When more than one error-capturing method is defined, a criteria needs to be established to prioritise the methods to be adopted. The use of a table is recommended. An example is given below.

Refer to MOE chapter 2.13 for details of how to sign-off each type of task.

Type of Task	Description of Task	Minimising the risk of errors being repeated in identical maintenance tasks and error capturing methods priority	
		Primary	**Secondary**
Identical Maintenance Task	Removal, installation, assembly or disassembly of **several components of the same type fitting to more than one system**, a failure of which can have an impact on safety, on the same aircraft or component during a particular maintenance check. (e.g. dual engine oil uplift, replacement of both cabin pressure controllers on one aircraft)	**Performance by different authorised persons** of the same task in different systems (planning method)	**Re-inspection** by the same authorised person who has performed the task (**limited to unforeseen cases when only one person is available**)
Critical Maintenance Task	Maintenance task that involves the assembly or any disturbance of a system or any part of an aircraft, engine or propeller that, if an error occurred during its performance, could **directly endanger flight safety** (e.g. one engine installation, one flight control rigging)	**Independent inspection**	**Re-inspection** by the same authorised person who has performed the task (**limited to unforeseen cases when only one person is available**)
Etc.	Etc.	Etc.	Etc.

2.26 Shift/Task Handover Procedures

Reference: 145.A.47(c), AMC1 145.A.47(c)

- ☐ Aims and objectives of the shift handover
- ☐ Training of personnel in shift/task handover processes
- ☐ Recording of shift/task handovers
- ☐ Formalised shift handover process and required information
  - Facility status
  - Work status
  - Manning status
  - Outstanding issues
  - Other possible information
- ☐ Responsible person for managing and detailing the shift/task handover

2.27 Procedures for Notification of Maintenance Data Inaccuracies and Ambiguities
Reference: 145.A.45(c), AMC 145.A.45(c)

- ☐ Definitions of maintenance data ambiguities
- ☐ Method of internal notification of maintenance data ambiguities
- ☐ Method of external notification of maintenance data ambiguities to the authors of that data
- ☐ Method of assessment and extraction of those ambiguities or inaccuracies to be reported under MOE chapter 2.18 as mandatory reportable occurrences
- ☐ Feedback to staff and implementation of TC holder or Manufacturer corrections
- ☐ Impact of the data ambiguity on the on-going maintenance task

The authors may be any of the following:

- Aircraft or component design organisation (e.g. AMM, SB, SRM)
- CAAT
- The organisation itself in the case of organisation job cards
- The customers in the case of job cards issued and furnished by the customers

2.28 Production Planning and Organising of Maintenance Procedures
Reference: 145.A.10, AMC1 145.A.10, AMC1 145.A.45(b), 145.A.47(a), AMC 145.A.47(a), 145.A.47(b), AMC1 145.A.47(b), GM1 145.A.47(b), 145.A.48(a), 145.A.65(b)1, GM1 145.A.65, GM 145.A.65(b)1

- ☐ Decision making process. Analysis of the work order to ensure:
  - A clear work order or contract has been agreed between the maintenance organisation and the operator to clearly establish the maintenance to be carried out

GM2 145.A.65(b)(1) provides guidance on the elements that need to be considered for the maintenance contract between the operator and the maintenance organisation. The maintenance organisation should consider these elements to ensure that a clear contract or work order has been concluded before providing maintenance services.

  - Requested maintenance remains within the approved scope of approval
  - Need for special facilities

The main driver to determine whether the requested maintenance is within the scope of approval, should be the content of the specific maintenance activity ordered. Additional tasks or constraints may be also associated with the requested activity, such as deferred items, rectification of defects, inspection requesting skilled workers, qualification of the C/S, environmental conditions, overall length of the tasks etc.

A decision-making process is necessary to assess whether the content of the maintenance activity is within the scope of approval. In addition, access to special facilities (a hangar for line maintenance, etc.) should be part of the decision making.

- ☐ Verification that the maintenance work package provided by the customer is usable by the maintenance organisation. In any case the maintenance organisation must issue an internal work package as detailed in MOE chapter 2.13:
  - Case 1: Customer job cards to be used (with appropriate training)
  - Case 2: Work package to be developed and prepared by the maintenance organisation based on the customer work order

- ☐ Control of the availability and update of maintenance documents (e.g. list of maintenance manuals, job cards)
- ☐ Procedure for establishing all necessary resources are available before commencement of work (hangar, manpower with required capabilities, staff, facilities, tools, equipment, parts, documentation, etc.)
- ☐ Procedure for outsourcing contractors as necessary
- ☐ Procedure for organising maintenance personnel and providing all necessary support during maintenance
- ☐ Organising shifts

Good practices in the maintenance domain and applicable rules should be considered. The resulting shift schedule should be shared with the maintenance staff sufficiently in advance so they can plan adequate rest. The established shift durations should not be exceeded merely for management convenience even when staff is willing to work extended hours.

- ☐ Working time policy

Guidance on working time may be found on ICAO Doc.9824 Human Factors Guidelines for Aircraft Maintenance Manual.

- ☐ Consideration of fatigue in the planning of maintenance

Fatigue is a physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness, circadian phase, or workload (mental and/or physical activity) that can impair a person's alertness and ability to safely perform his/her tasks.

- ☐ Planning of critical maintenance tasks

For further guidance, refer to the Guidance Material for Aircraft Maintenance (CAAT-GM-AIR-513).

2.29 (Reserved)

2.30 Fabrication of Parts

Reference: 145.A.42(b)

This procedure can only be included when the possibility to fabricate parts is included in the MOE 1.9 chapter.

For further guidance, refer to the Guidance Material for Fabrication of Parts (CAAT-GM-AIR-512).

2.31 Procedure for Component Maintenance under Aircraft or Engine Rating

Reference: GM1 145.A.45(b)

This procedure can only be included when the possibility of using component maintenance data under aircraft or engine ratings is included in the MOE 1.9 chapter.

2.31.1 Conditions for using the privilege

- ☐ Justification to CAAT on the need of this privilege and confirmation that it is a simple component maintenance as defined in the following paragraph
- ☐ Procedure to assess the task is within the technical capability of the maintenance organisation (e.g. staff, tools, maintenance data, materials, etc.)

This assessment can be considered met without further demonstration, where the organisation holds the relevant Cx/Bx rating and performs a task included in the already approved capability at P/N level, however using workshop staff “on-wing” under the Ax rating.

- ☐ Assessment of the need to develop maintenance instructions for using the particular maintenance data in order to precisely record the part of the maintenance task effectively carried out (e.g. a B1 rated AMO using the AMM, will not take care of circuit breaker deactivation in the cockpit and should not record this task as being done by the AMO)
- ☐ Where applicable, procedure to liaise with the Ax rated AMO being responsible for some parts of the task when a Cx or Bx AMO are working on-wing (e.g. circuit breaker deactivation, etc.)
- ☐ Procedure entailing possible CRS limitations (e.g. leak test needed by the Ax AMO following a task carried out by the Cx or Bx AMO)
- ☐ Procedure to cover cases where the same maintenance task is available in different maintenance data with different allowed defects. In such cases, the AMO can only use the particular maintenance data if clearly specified in the work order (e.g. a Bx shall not use the AMM under its own decision, when the same task is available in EMM)
- ☐ Need of training in the use of maintenance data and in the particular maintenance environment (e.g. a Cx or Bx rated AMO working on-wing in an aircraft line or base maintenance environment)
- ☐ Access to the maintenance data

2.31.2 Definition of Simple Component Maintenance

This definition is to be customised to the scope of work of the organisation. It is not intended to define simple tasks which are not applicable to the organisation.

The criteria below are only intended to address the case of an Ax rated organisation wishing to use component maintenance data.

- ☐ The tasks to be carried out are:
  - not requiring any specific workshop environment (e.g. special temperature/humidity requirements, special cleanness standard) and/or workshop test bench
  - limited to cabin related maintenance tasks, such as:
    - cosmetic repairs (e.g. seats, galleys, lavatories, stowage, partitions)
    - minor inspection (e.g. fire extinguisher weighing, seats inspection)
    - minor repairs (e.g. seats subpart replacement)
- ☐ The component may be temporarily removed from aircraft in order to improve access to that component, except when such removal generates the need for additional maintenance. The component shall be reinstalled back to the same aircraft, and the related repair recorded in the aircraft maintenance work package
- ☐ Amendment status of component maintenance data used under this procedure shall be controlled as per MOE chapter 2.8

Other scenarios may be considered for inclusion in this paragraph subject to the acceptance of the assigned inspector

2.32 Maintenance Away from Approved Location

Reference: 145.A.75(c)

This procedure can only be included when the possibility to perform maintenance outside the approved locations is included in the MOE 1.9 chapter.

☐ Maintenance outside the approved location (s)

For further guidance, refer to the Guidance Material for Aircraft Maintenance (CAAT-GM-AIR-513).

2.33 Procedure for Assessment of Workscope as Line or Base Maintenance

The content of chapter may be included in the chapter 2.28 “Production planning and organising of maintenance activities”, which describes the “Decision making process” (in this case the MOE 2.33 should cross-refer to MOE 2.28).

The process described in the title of this MOE 2.33 chapter applies to all types of organisations holding Ax ratings, therefore the assessment of workscope as line or base maintenance is only one particular case of the larger “Decision making process” intended to assess any workscope.

PART L2 ADDITIONAL LINE MAINTENANCE PROCEDURES

MOE Part L2 is intended to provide additional procedures, which are specific for the line maintenance environment and have not been covered in MOE Part 2, or to complement those Part 2 procedure if necessary. Where a procedure has been already covered in MOE Part 2 and there is no need for further detail to be added, a direct reference to the MOE Part 2 chapter may be used in the relevant MOE Part L2 chapter.

L2.1 Line Maintenance Control of Aircraft Components, Tools, Equipment, etc.

Reference: 145.A.75(d)

This MOE chapter should describe the additional or special procedures for the management of:

- Facilities
- Materials
- Ingredients
- Tools
- Equipment
- Technical documentation
- Staff
- Etc.

associated with the line maintenance activity. For example, this applies when a line station, separate from the main maintenance site, needs to use procedures to control the components, tools, and equipment which are not the same as those used in the main site as described in MOE Part 2.

- ☐ Components or material acceptance (e.g. required documentation, conditions and quarantine procedures)
- ☐ Components removed serviceable from aircraft
- ☐ Procedures to maintain satisfactory storage conditions (e.g. routable, perishables, flammable fluids, engines, bulky assemblies and special storage requirements)
- ☐ Systems for control of shelf life and modification standards
- ☐ Tagging or labelling system (e.g. serviceable, unserviceable, scrap)
- ☐ Release of components to the maintenance process
- ☐ Tools and test equipment, servicing and calibration programs, equipment register
- ☐ Identification of servicing or calibration due dates

L2.2 Line Maintenance Procedures Related to Servicing, Fueling, De-icing, etc.

Reference: 145.A.75(d)

This MOE chapter should describe the additional or special procedures for management of the specific activities:

- ☐ Technical and maintenance documentation management (control and amendment)
- ☐ Company technical procedures or instructions management
- ☐ Fuel supply quality monitoring (bulk storage and aircraft re-fueling)
- ☐ Ground de-icing (procedures and monitoring of sub-contractors)
- ☐ Maintenance of ground support equipment
- ☐ Monitoring of subcontracted ground handling and servicing

L2.3 Line Maintenance Control of Defects and Repetitive Defects

Reference: 145.A.75(d)

This MOE chapter should describe the general procedures followed by the maintenance organisation regarding the rectification of defects in line maintenance. The identification and management of repetitive defects is an operator responsibility. However, the maintenance organisation may also identify such repetitive defects or be involved by the operator for rectification actions.

- ☐ Rules for deferring (e.g. periods, review, permitted personnel, conformity with MEL or Configuration Deviation List (CDL) provisions)
- ☐ Awareness of deferred defects carried by aircraft
- ☐ Analysis of tech log (e.g. repetitive defects, crew complaints, analysis and transfer of cabin log items as required)
- ☐ Coordination with the operator
- ☐ Procedure on how to deal with defects requiring TCAR PEL Part - 66 in Category B1 for C/S in the case of line stations where such staff are not permanently available. Refer to Guidance Material for Aircraft Maintenance (CAAT-GM-AIR-513)

L2.4 Line Procedures for Completion of Technical Logs

Reference: 145.A.75(d)

This MOE chapter should describe the additional procedures for management or completion of the technical logs in use. It must also cover the procedures for Extended Diversion Time Operations (EDTO) release where applicable. These procedures must be associated to MOE chapters 2.13 and 2.16.

- ☐ Technical log system:
  - Consideration of operator procedures
  - Completion of sector record pages
  - Distribution of copies

- ☐ Training on operator procedures and maintenance record completion – logbook, etc.
- ☐ Certification or Sign-off – maintenance statements
- ☐ Maintenance Independent Inspections
- ☐ EDTO certification
- ☐ Retention of records
  - Periods
  - Methods and security

L2.5 Line Procedures for Pooled Parts and Loaned Parts

Reference: 145.A.75(d)

This MOE chapter should describe the additional management procedures for pooled or loaned parts specific to the line maintenance activity. It should also cover the removal of serviceable parts from aircraft for use on another aircraft. These procedures must be associated to MOE chapters 2.2, 2.3, 2.19 and 2.20.

- ☐ Verification of approved sources of parts (e.g. sources, conformity with company requirements, modification standards, AD compliance and records)
- ☐ Compliance with loan and contract requirements
  - Tracking and control

- Required documentation

☐ Processing removed loan parts for return to source (e.g. records)
☐ Components removed serviceable from aircraft

L2.6 Line Procedures for Return of Defective Parts Removed from Aircraft

Reference: 145.A.75(d)

This MOE chapter should describe the additional management procedures for treatment of defective components associated with the line maintenance activity. These procedures should cover the same subjects specified in MOE chapters 2.19 and 2.20.

☐ Required documentation
☐ Service records
☐ Processing advice of removal (work order) and dispatch to technical records
☐ Dispatch of the part for rectification

L2.7 Line Procedures for Critical Maintenance Tasks and Error-capturing Methods

Reference: 145.A.75(d)

This MOE chapter is the equivalent of MOE chapters 2.23 and 2.25 for line maintenance activities. It is intended to describe non-normal issues (if any) for managing critical maintenance tasks in the line maintenance environment, together with any associated error-capturing method.

PART 3 MANAGEMENT SYSTEM

3.1 Hazard Identification and Safety Risk Management

Reference: 145.A.200(a)1(iii), AMC1 145.A.200(a)1(iii), GM1 145.A.200, GM1 145.A.200(a)1(iii), 145.A.200(b)

This MOE chapter should describe the identification of safety hazards associated with the maintenance activities, the assessment of the associated safety risks and the investigation process, including the mitigation actions to monitoring of their effectiveness.

☐ Hazard identification process

- Process for safety data collection; proactive and reactive methods
- Identification of data sources, external and internal;
- Process for safety data analysis;
- Procedure(s) for the identification and classification of hazards relevant to the Organisation/activity;
- Records management (hazard log/register);
- Responsibilities and management of the hazard log;
- Internal communication process;

☐ Safety risk management

The Organisation should describe in detail the risk assessment process in place. Once hazards are identified, the associated risks and their potential consequences should be assessed and analysed, and appropriate mitigation actions should be implemented. A formal safety risk management process should be developed and maintained considering the following:

- Analysis process (e.g. in terms of the probability and severity of the consequences of hazards and occurrences)
  - Severity should evaluate the seriousness of the consequences
  - Likelihood should identify the possibility (and frequency) of the occurrence;
  - The likelihood and severity should be clearly defined.
  - Regardless of the method used (ICAO safety risk matrix, ARMS, BOW-TIE, etc.), it is important to customize the risk assessment matrix so as to reflect the operational profile.
- Tolerability assessment
  - The organisation should assess the acceptability of the potential consequences associated with the potential occurrences and hazards identified. This should be done in accordance with the organisation's defined safety performance criteria
- Mitigation actions
  - Control (in terms of mitigation) of risks to an acceptable level
  - Decision-making process, including responsibilities
  - Implementation of actions
  - Monitoring of the effectiveness of the implemented actions

Mitigation is the process of incorporating risk barrier controls (e.g. preventive controls or recovery controls) to reduce the severity and/or the likelihood of the identified hazard, therefore reducing the risk to an acceptable level, and, where possible, eliminating the risk.

Risk controls should be Specific, Measurable, Agreed, Realistic and Time constrained(SMART). Human

Factors should be considered as part of the development of these risk controls.

The person or position responsible for the implementation and management of mitigation measures should be identified, including follow-up procedure.

The effectiveness of mitigations should be monitored. Where necessary, risk controls should be revised based on the result of that assessment.

3.2 Internal Safety Reporting and Investigations

Reference: 145.A.60(f), AMC1 145.A.200(a)1(iii), GM1 145.A.200, 145.A.202(a), 145.A.202(b), 145.A.202(c), 145.A.202(d), 145.A.202(e), AMC1 145.A.202, GM1 145.A.202

☐ Safety Reporting Scheme

As part of its management system, the maintenance organisation shall establish an internal safety reporting scheme to enable the collection and evaluation of occurrences to be reported, as detailed in MOE 2.18.

Through this scheme, the organisation shall:

(1) identify the causes of and contributing factors to any errors, near misses, and hazards reported and address them as part of safety risk management process
(2) ensure evaluation of all known, relevant information relating to errors, the inability to follow procedures, near misses, and hazards, and a method to circulate the information as necessary.

This MOE chapter should include, but not be limited to, the following information, with respect to the internal safety reporting scheme:

☐ Confidentiality and safety promotion

The internal safety reporting scheme should be confidential reporting system and enable and encourage free and frank reporting of any potentially safety-related occurrence, including incidents such as errors or near misses, safety issues and hazards identified. This will be facilitated by the establishment of a just culture.

☐ Identification of clear policy and objectives

The internal safety reporting scheme should include:

- Clearly identified aims and objectives with demonstrable corporate commitment;
- A just culture policy as part of the safety policy (as defined in MOE 1.2), and related just culture implementation procedures

☐ Safety Investigation Process

- Description of the process to investigate occurrences (e.g. criteria to identify occurrences to be investigated, investigation report format, methods of maintenance errors investigation such as “maintenance errors decision aid-MEDA” process, corrective actions in response to investigation findings, follow-up system, feedback to staff, etc.)
- Maintenance errors identified to be used for internal human factors training and for amendment of the procedure for critical maintenance tasks (may cross refer to MOE chapter 2.23)

  In line with its just culture policy, the organisation should define how to investigate incidents such as errors or near misses, in order to understand not only what happened, but also how it happened, to prevent or reduce the probability and/or consequence of future recurrences.

The scope of internal investigations should extend beyond the scope of the occurrences required to be reported to CAAT in accordance MOE 2.18.

The internal safety reporting scheme should include a detailed process:

- ☐ to identify those reports which require further investigation;
- ☐ to classify occurrences against the mandatory reportable criteria established in MOE 2.18 and decide on further actions accordingly;
- ☐ to investigate all the causal and contributing factors, including any technical, organisational, managerial, or Human Factor issues, or any other contributing factors related to the occurrence, incident, error or near miss
- ☐ to analyse the collective data showing the trends and frequencies of the contributing factor
- ☐ to identify, implement and monitor the effectiveness of the appropriate corrective and preventive actions based on the findings of investigations;

Additional considerations for this MOE chapter include:

- ☐ Initial and recurrent training requirements for staff involved in internal investigations;
- ☐ Coordination and cooperation with the customer/operator on occurrence investigations by exchanging relevant information to improve aviation safety;
- ☐ Recurrent training updates, in accordance with the established training policy and procedures, whilst maintaining appropriate confidentiality;
- ☐ Feedback loop to reporters and other maintenance staff.

3.3 Safety Action Planning

Reference: 145.A.200(a)1(i), AMC1 145.A.200(a)1(i), AMC1 145.A.200(a)1(iii), GM1 145.A.200, GM1 145.A.200(a)1(i), GM2 145.A.200(a)1(i), 145.A.200(b), 145.A.202(a)

This MOE chapter should describe the safety action planning process in place, describing the Safety Review Board (SRB) and Safety Action Group (when applicable) composition, meetings and functions.

The SRB should be a high-level committee that considers matters of strategic safety in support of the Accountable Manager's safety accountability. The board should be chaired by the Accountable Manager and composed of the Nominated Persons.

- ☐ The SRB should monitor:
  - safety performance against the safety policy and objectives;
  - that any safety action is taken in a timely manner; and
  - the effectiveness of the organisation's management system processes.
- ☐ The SRB may also be tasked with:
  - reviewing the results of compliance monitoring;
  - monitoring the implementation of related corrective and preventive actions.

Depending on the size of the organisation and the nature and complexity of its activities, a safety action group may be established as a standing group or as an ad hoc group to assist, or act on behalf of the Safety Manager or the SRB.

More than one SAG may be established, depending on the scope of the task and the specific expertise required. The SAG usually reports to, and takes strategic direction from, the SRB, and may be composed of managers, supervisors and personnel from operational areas.

- ☐ The SAG may be tasked with or assist in:
  - monitoring safety performance;

- defining actions to control risks to an acceptable level;
- assessing the impact of organisational changes on safety;
- ensuring that safety actions are implemented within agreed timescales;
- reviewing the effectiveness of previous safety actions and safety promotion.

This MOE procedure should also specify when/how often SRB meetings and SAG meetings take place.

3.4 Safety Performance Monitoring

Reference: AMC1 145.A.200(a)1(iii), GM1 145.A.200, 145.A.202(a)

These MOE chapter 3.3 and 3.4 are strictly connected. The expected intent of both chapters is described in the MOE chapter 3.3. However, this MOE chapter 3.4 can be used to further develop the safety performance monitoring process within the organisation.

3.5 Management of Changes

Reference: GM1 145.A.200, AMC1 145.A.200(a)1(iii), GM2 145.A.200(a)1(iii), 145.A.202(a)

Changes in organisational structure, facilities, scope of work, personnel, documentation, policies and procedures, can result in unintended consequences and the inadvertent introduction of new hazards, exposing the organisation to new or increased safety risk(s).

The introduction of a change is the trigger for the organisation to perform their hazard identification and risk management process.

Some examples of change include, but are not limited to:

- Changes to the organisational structure
- The inclusion of a new aircraft type in terms of approval
- The addition of aircraft of the same or a similar type
- Significant changes in personnel (affecting key personnel or large numbers of personnel, high turn-over)
- New or amended regulations
- Changes to the security arrangements
- Changes in the economic situation of an organisation (e.g. commercial or financial pressure)
- New schedules, locations, equipment, or operational procedures
- The addition of new subcontractors
- Etc.

The change management process should consider, :

- ☐ Identification and description of the change:
- ☐ Assessment of the criticality and impact
- ☐ Existing controls and implementation of new controls
- ☐ Change implementation and transition period
- ☐ Monitoring the effectiveness of the change implementation

The Organisation shall develop and maintain a process to:

- identify and assess changes that may affect the level of safety risk associated with its services, and
- identify and manage the safety risks that may arise from those changes.

The management of change should be a documented process to identify external and internal changes that may have an adverse effect the safety and compliance of its continuing airworthiness management activities. The introduction of a change should trigger the organisation's hazard identification and risk management process.

Regardless of the magnitude of the change, whether large or small, its safety implications should always be proactively considered. This is primarily the responsibility of the team proposing and/or implementing the change.

The magnitude of a change, its safety criticality, and its potential impact on human performance should be assessed as part of the change management process. A change may introduce new human factors issues or exacerbate existing ones. Integrating human factors into the management of change aims to minimise potential risks by specifically considering the impact of the change on personnel within the system.

The process should also consider business-related changes (e.g. organisational restructuring, resources, IT projects) and interfaces with other organisations or departments. Responsibilities and timelines should be clearly defined.

3.6 Safety Training (including Human Factors) and Promotion

Reference: 145.A.30(e), AMC4 145.A.30(e), GM1 145.A.30(e), GM5 145.A.30(e), GM6 145.A.30(e), AMC1 145.A.35 (d), AMC1 145.A.35 (e), AMC1 145.A.200(a)1(iii), GM1 145.A.200, 145.A.200(a)1(iv), AMC1 145.A.200(a)1(iv), GM1 145.A.200(a)1(iv), 145.A.202(a),

3.6.1 Safety Training Programme and Promotion

☐ Safety training programme

Safety training, combined with safety communication and information sharing, forms part of safety promotion. The organisation should ensure that:

- All staff are able to demonstrate an understanding of safety management principles, including Human Factors, relevant to their job function.
- All staff are familiar with the safety policy as well as the procedures and tools available for internal safety reporting.
- Staff designated with safety management responsibilities are familiar with the relevant processes for hazard identification, risk management, and of safety performance monitoring.

For that purpose, personnel involved in the organisation's maintenance activities should receive both initial and recurrent safety training appropriate to their responsibilities. This should include at least the following staff members:

- nominated persons, line managers supervisors
- certifying staff, support staff and mechanics
- Technical support personnel such as planners, engineers, technical record staff
- Persons involved in 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

Initial safety training should cover all the topics of the training syllabus specified in GM1 145.A.30(e) either as a dedicated course or else integrated within other training. The syllabus may be adjusted to reflect the particular nature of the organisation. The syllabus may also be adjusted to suit the particular nature of work for each function within the organisation.

Initial safety training should be provided within 6 months of joining the organisation. However, temporary staff may need to be trained shortly after joining the organisation to cope with the duration of employment. Personnel recruited from another organisation, as well as temporary staff, should be assessed for the need to receive any additional safety training.

Training should be provided to management and staff at least:

- during the initial implementation of safety management processes;
- for all new staff or personnel recently allocated to any safety management related task;
- on a regular basis to refresh their knowledge and to understand changes to the management system;
- when changes in personnel affect safety management roles, and related accountabilities/responsibilities; and
- when performing dedicated safety functions in domains such as safety risk management, compliance monitoring, internal investigations.

Recurrent safety training should be delivered either as a dedicated course or integrated within other training programmes. It should be provided for an appropriate duration in each 2-year period, take into account the relevant compliance monitoring audit findings and other internal or external sources of information available to the organisation regarding safety and HF issues.

Recurrent training should take into account certain information reported through the internal safety reporting scheme.

☐ System of maintaining personnel trained and competent to perform their tasks

The purpose of recurrent safety training is primarily to ensure that staff remain current in SMS principles and HF, and to collect feedback on safety and HF issues. Consideration should be given involving compliance monitoring staff and key safety management personnel in this training to ensure a consistent presence and to facilitate feedback.

There should be a procedure to ensure that feedback is formally reported by the trainers through the internal safety reporting scheme to initiate action where necessary.

The organisation should establish communication about safety matters that:

- ensures that all personnel are aware of the safety management activities, as appropriate, for their safety responsibilities;
- conveys safety-critical information, especially related to assessed risks and analysed hazards;
- explains why particular actions are taken; and
- explains why safety procedures are introduced or changed.

☐ Communication means/information sharing related to safety matters

Significant events, changes and investigation outcomes should be communicated. Safety policy and objectives should be known by staff.

Regular meetings with personnel during which information, actions, and procedures are discussed, may be used to communicate safety matters. Safety bulletins, communications, newsletters, emails, etc. may also be used to share safety information.
The process should describe:

- what safety information is to be communicated,
- when it should be communicated, and
- how it should be communicated.

Subcontracted/Contracted organisations should be included in the communication where appropriate.

The means of communication should be adapted to the audience and the significance of what is being communicated.

3.6.2 Safety Training (including Human Factors) Procedure
Reference: 145.A.30(e), AMC4 145.A.30(e), 145.A.30(e)

This MOE chapter shall refer the human factors training for the organisation personnel.

3.6.2.1 Initial Training (except C/S and S/S)

- ☐ Aims and objectives
- ☐ Categories of staff to be trained
- ☐ Implementation time frame
- ☐ Training methods and syllabus: {refer to GM 1 - 145.A.30 (e)}
- ☐ Duration of training
- ☐ Validation of the training courses (syllabus and duration)
- ☐ Requirements for trainers
- ☐ Training Records
    - Duration / location
    - Type of documents

3.6.2.2 All Maintenance staff Recurrent training

- ☐ Aims and objectives
- ☐ Categories of staff to be trained
- ☐ Training methods and syllabus: tailored to the audience / audit findings / feedback in relation to relevant quality audit findings and other internal/external sources of information available to the organisation on human errors in maintenance
- ☐ Duration of training
- ☐ Validation of the training courses (syllabus and duration)
- ☐ Requirements for trainers
- ☐ Training Records
    - Duration / location
    - Type of documents

Human factors training could be adjusted to reflect the particular nature of the organisation (e.g. size and scope of work). Human factors recurrent training shall be of an appropriate duration in each two-year period.

3.7 Immediate Safety Action and Coordination with the Operator's ERP

Reference: 145.A.155(a), 145.A.155(b), AMC1 145.A.200(a)1(iii), GM1 145.A.200

3.7.1 Immediate Safety Action

A procedure should be implemented to enable the organisation to act promptly when safety concerns with the potential to have an immediate effect on flight safety are identified. The procedure should include clear instructions on who to contact (e.g. owner, customer, or operator) and how they should be contacted, including arrangements outside normal business hours.

- ☐ Identification of responsibilities for contacting owner, operator, or CAMO in case of safety concern with potential immediate effect on flight safety is identified.
- ☐ Internal and external coordination, including contact details of key functions and personnel within the maintenance organisation (e.g. manager, nominated postholder, etc.) and within the operator/CAMO (e.g. Maintenance Control Center, operator/CAMO contact person, etc.).

3.7.2 Coordination with the Operator's ERP.

A procedure should be implemented to enable the organisation to act promptly when the Emergency Response Plan (ERP) is triggered by the operator and support from the Part-145 organisation is required. This procedure should include clear instructions on who to contact at the owner, customer, or operator, and how to contact them, including outside normal business hours.

- ☐ Identification of responsibilities for the implementations and management of the ERP
- ☐ Procedure(s) for transition from normal to emergency operations
- ☐ Procedure(s) for transition from emergencies to normal operations
- ☐ Internal and external coordination, including contact details of key functions and personnel
- ☐ ERP training requirements
- ☐ ERP training/simulations (scope, frequency)

3.8 Compliance Monitoring

3.8.1 Audit Plan and Audit Procedures

Reference: 145.A.95(a), 145.A.95(b), 145.A.95(c), AMC1 145.A.95, AMC2 145.A.95, GM1 145.A.95, 145.A.200(a)2, AMC1 145.A.200(a)2, AMC2 145.A.200(a)2, AMC3 145.A.200(a)2, AMC4 145.A.200(a)2, GM1 145.A.200(a)2, GM2 145.A.200(a)2

This MOE chapter should explain how the audit of an independent monitoring function is organised and managed in accordance with TCAR AIR Part-145 requirements. In particular, this MOE chapter should describe how the requirements for systems and procedures audits are complied with and the methodology of the audit. Small organisations may choose to subcontract the audits to another organisation or an outside person with satisfactory technical knowledge and satisfactory audit experience, but the compliance monitoring system cannot be subcontracted.

- ☐ Definition of the system or procedures audit
  - Single audit or subdivided audit program over 12 months
  - Definition of remote audit methodology and applicability

When remote audit methodology is used it should be clearly stated in the related audit reports.

- ☐ System or procedures audit plan
  - The audit plan should ensure that all aspects of TCAR AIR Part-145 compliance are checked every 12 months. The cross-reference table included in section 1.5 of this GM

can be used as a reference for a compliance check of applicable regulation requirements and MOE chapters and can also be used to determine the expected detail in the system or procedures audit.
- Annual audit planning procedures
- Grouping of audits
- Dates and timeframe
- Audit of the compliance monitoring system by an independent auditor, being either:

It is important to note that the Compliance Monitoring is required to be "independent" which normally means that the Compliance Monitoring Manager and the Quality Monitoring Staff are not directly involved in the TCAR AIR Part-145 function being audited.

  - A person employed by the maintenance organisation and working in another department (e.g. production), or
  - A person contracted by the maintenance organisation (part-time basis or short time contract based on TCAR AIR Part-145, 145.A.30(d)) to perform audits on the compliance monitoring system procedures.
- Audit of contracted organisations, subcontractors or suppliers, depending upon the monitoring criteria defined in MOE chapter 2.1.
- Scheduled audits and unannounced audits to be carried out during maintenance, including night shifts.
- Validation, internal approval and management of changes of the audit plan
- Follow up of the audit plan (e.g. schedule, audit completed, audit report issued, Findings status)

For an example of the audit plan, refer to the table at the end of this paragraph.

☐ Maintenance organisation audit policy, including compliance audit:
- Audit notification
- Audit reports (e.g. documents used, writer, issuance, scope, Findings classification, and deadline for non-compliance rectifications)
- Allocation of resources to the audit (e.g. audit team, team leader)
- Procedures when deviations are noted on a line of products

☐ Compliance monitoring audit reports and retention:
- Duration (at least 5 years from the date of the Findings closure) and location
- Type of documents (e.g. audit notification, audit reports, checklists and audit plans)

Audit reports should be raised every time a system audit is carried out describing what was checked and the resulting Findings against applicable requirements, procedures and products.

The following describes one example of an acceptable audit plan, with associated criteria that should be met:

☐ Audit plan is intended to monitor compliance with the applicable requirements and at the same time review all areas of the maintenance organisation where such requirements are applicable

☐ Identification of all regulatory requirements that are applicable to activities and the scope of work under consideration:
- Each topic (e.g. facilities, personnel) should be cross-referred to the relevant requirements and related procedure in the MOE.
- If an AMC is applied to demonstrate compliance with TCAR AIR Part-145

requirements, that information should also be stated.

- Identification of all functional areas in which TCAR AIR Part-145 requirements are intended to be carried out, including applicable subcontracting of any topic to each functional area
- A matrix can be used, as shown in the example below:
  - This matrix is intended to be a living document customised by each particular maintenance organisation depending upon scope of work and structure.
  - This matrix should show the overall compliance of the audit system and needs to be amended, as necessary, based upon any change to the applicable regulations, the procedures, or functional areas of the maintenance organisation (a change in the scope of work to include line maintenance, etc.).

Topic	Requirement	MOE	Functional Areas				
			Base Maintenance	Compliance Monitoring	Subcontracting	Component Workshop	…
Facilities	145.A.25(a)(1)	1.8	X	N/A	X	X	…
	AMC1 145.A.25(a)	2.22	X	N/A	N/A	X	…
	…	…	…	…	…	…	…
Personnel	…	…	…	…	…	…	…
	145.A.30(c)	1.4	N/A	X	N/A	N/A	…
	145.A.30(d)	1.7, 2.22	X	X	X	X	…
	…	…	…	…	…	…	…
Record-keeping	145.A.55	…	…	…	…	…	…
…	…	…	…	…	…	…	…

- The audit plan can be presented as a simplified schedule (see below), showing the operational areas of the organisation against a timetable to indicate when each particular area was scheduled for audit and when the audit was completed. The audit plan should include a number of product audits (depending upon the number of product lines), some of which should be unannounced.
  - Example of an audit plan for an organisation, mentioned above, that has 2 base maintenance hangars, hydraulic and electrical workshops and a subcontractor:

Operational Area	Functional Area	Planned	Completed	Remarks
Base maintenance hangar 1	Base maintenance	mmm yyyy	dd mmm yyyy	
Base maintenance hangar 2	Base maintenance	mmm yyyy	dd mmm yyyy	
Hydraulic workshop	Component workshop	mmm yyyy	dd mmm yyyy	
Electrical workshop	Component workshop	mmm yyyy	dd mmm yyyy	
Subcontractor 1	Subcontracting	mmm yyyy	dd mmm yyyy	
Product audit 1	Base maintenance	mmm yyyy	dd mmm yyyy	
Product audit 2	Component workshop	unannounced	dd mmm yyyy	
…	…	…	…	

- The audit of each operational area should review all the topics that are applicable to the relevant functional area:
  - For each topic, the audit should check that the particular TCAR AIR Part-145 requirement is documented in the corresponding procedure in the MOE and that the procedure is effectively implemented in the operational area that is being audited

- Any practice or process implemented in the operational area, which has not been documented in any procedure in the MOE, should be identified.

3.8.2 Product Audit and Inspections

Reference: AMC2 145.A.200(a)2, AMC3 145.A.200(a)2

This MOE paragraph should describe the procedures related to product audits (e.g. aircraft, aircraft components, engines and specialised services) according to TCAR AIR Part-145.

Small maintenance organisations may choose to subcontract the audits to another organisation or an outside person with satisfactory technical knowledge and satisfactory audit experience. For details, refer to MOE chapter 3.12.

☐ Definition of Product Audit

The sample check of a product to witness any relevant testing and visually inspect the product and associated documentation. The sample check should not involve repeated disassembly or testing unless the sample check identifies Findings requiring such action.

☐ Product Audit Policy:
- Dedicated product audit policy may be added, provided it does not conflict with the one described in MOE paragraph 3.8.1.
- Audit procedure should include the quality audit of aircraft, components, or specialised services.

☐ Product Audit Program:
- Product samples for each line of product (e.g. aircraft, components, engines or specialised services)
- Dates and timeframe

☐ Product Auditing Methods:
- Sampling
- Trail or Investigation audits

☐ Records of Product Audit Reports:
- Duration (for at least 5 years from the date of the Findings closure) and location
- Type of documents (e.g. notifications, audit reports, checklists, audit plans)

An audit report should be raised each time a product audit is carried out, describing what was checked and the resulting Findings against applicable requirements, procedures and products.

3.8.3 Audit Findings and Corrective Action Procedures

Reference: 145.A.95(a), 145.A.95(b), 145.A.95(c), AMC1 145.A.95, AMC2 145.A.95, GM1 145.A.95 AMC4 145.A.200(a)2

This paragraph should describe the procedures for follow-up of corrective actions.

☐ Findings classification refer to TCAR AIR Part-145, 145.A.95
- Notification to the Accountable Manager and CAAT where a Level 1 Finding is identified by the internal audit and immediate actions to self-limit the approval or privileges as necessary

☐ Management of Findings due dates:
- Alert system, Findings database
- Extension of due dates
- Procedure describing maintenance organisation actions when the corrective action deadline has to be postponed or when the rectification has not been completed on time

☐ Corrective action process:
- Root cause analysis and associated generation of Corrective Action Plan (CAP) and Corrective Action Report (CAR)

  A procedure is expected to describe the methodology used for the root cause analysis, and the associated development of CAP and CAR.

  It is important that the analysis does not primarily focus on establishing who or what caused the non-compliance, but rather why the non-compliance occurred. Establishing the root cause(s) of a non-compliance often requires an overall view of the events and circumstances that led to it, in order to identify all the possible systemic and contributing factors (e.g. regulatory, human factors, organisational factors, technical) in addition to the direct factors.

  This is an essential element of the compliance monitoring function to prevent the recurrence of findings.

  The following describes a typical step by step process
  - **Collect information**
    Gather relevant information, including the environment in which the finding was identified, the personnel involved, and associated documentation.
  - **Identify the root causes and contributing factors**
    This step should not only confirm the finding but also assess its potential impact on other areas of the organisation in order to detect similar or related non-compliances. The “5 Whys” or Fishbone (Ishikawa) analysis methodologies may be used to support the identification of root causes leading to the non-compliance.
  - **Define a CAP**
    The plan should specify the intended corrective actions and the timeframe for their implementation, within the established due date for each finding. It should address not only the identified non-compliance but also any related non-compliances identified during the root cause analysis.
  - **Demonstrate the implementation of corrective actions**
    Evidence should be provided to demonstrate that the corrective actions have been effectively implemented. Such evidence should not rely on promises or statements related to actions not yet completed. For example, a statement indicating that training will be completed or is ongoing is not acceptable as evidence of corrective action implementation.

- Corrective action planning and follow-up (e.g. notification, corrective action acceptance, opening and closure)

  Findings follow-up should describe the actions taken by the auditor or auditing manager to verify the implementation of corrective actions.

- The corrective action plan should be designed to identify and record the Findings, the root cause, the relevant immediate and long-term preventive actions with the appropriate timescales
- Management responsibilities for corrective actions and follow-up
- Process of corrective actions following Findings from CAAT (the same principles indicated above in the root cause and CAP/CAR generation are expected. The CAP/CAR shall be performed within the period specified by CAAT. Where observations are issued by CAAT, the organisation shall give them due consideration and record the decisions taken in respect to those observations)

☐ Description of the compliance monitoring feedback reporting system
- Access to Accountable Manager
- Review of the compliance monitoring function overall results
- Meetings with the Accountable Manager, including record of meeting procedures
- Regular meetings to check the progress of corrective actions
- All records pertaining to the independent audit and the feedback system should be retained for the period specified in TCAR AIR Part-145, 145.A.55(c) or for such periods as to support changes to the audit planning cycle in accordance with AMC2 145.A.200(a)2., whichever is the longer.

Note: The compliance monitoring feedback reporting system cannot be subcontracted.

3.9 Certifying Staff and Support Staff Qualifications and Training Procedures

Reference: 145.A.30(e), AMC3 145.A.30(e), 145.A.30(f), AMC1 145.A.30(f), 145.A.30(g), AMC 145.A.30(g), 145.A.30(h)1, 145.A.30(h)2, 145.A.30(i), AMC1 145.A.30(h), 145.A.30(j)1, 145.A.30(j)2, 145.A.35(a), 145.A.35(b), 145.A.35(c), 145.A.35(d), 145.A.35(e), 145.A.35(f), 145.A.35(g), 145.A.35(h), , 145.A.35(l), 145.A.35(m), 145.A.35(n), AMC 145.A.35(b), AMC 145.A.35(c), AMC1 145.A.35(d), AMC1 145.A.35(e), AMC 145.A.35(m), AMC 145.A.35(n) and Appendix IV

This MOE chapter should describe qualification procedures for the certifying staff and support staff qualification in accordance with TCAR PEL Part - 66. Clear differentiation is expected for each different rating in the scope of work (e.g. aircraft, engines, components, specialised services). Initial and recurrent training in relation of each job function needs to be specified.

3.9.1 Aircraft C/S – S/S

☐ The minimum age for C/S and S/S is 21 years.

☐ Experience, training and competency requirements, including compliance with TCAR AIR Part-145 Appendix IV for staff not qualified in accordance with the applicable regulation for CAAT aircraft maintenance licensing.

Note: The CAAT Appendix IV Checklist (CAAT-AIR-CL-CER-RSC-535) should be used as a mean to verify compliance with TCAR AIR Part-145 requirements, including the relevant CAAT provisions for aircraft C/S who do not qualify under TCAR PEL Part-66.

☐ TCAR AIR Part-145 C/S – S/S individual authorisation - requirements for initial issue, extension (scope of work), renewal, withdrawal of the authorisation, including, as applicable:
- Certification Authorisation for aircraft line or base maintenance C/S
- Individual Authorisation for aircraft base maintenance S/S

- ☐ Recurrent training procedures (e.g. maintenance organisation procedures, new technology, human factors issues)
- ☐ Demonstration of 6/24 months maintenance experience, including a table of similar aircraft types (relevant to the scope of work held by the maintenance organisation) to be used for the demonstration of 6/24 months requirement
- ☐ One-off certification authorisation - CRS procedure following one-off authorisation to be included in MOE chapter 2.16

The competency assessment process for issuance, extension, and renewal of the TCAR AIR Part-145 C/S – S/S individual authorisation should be described in MOE chapter 3.14.

For further guidance, refer to:

- Guidance Material for Aircraft Certifying Staff and Support Staff (CAAT-GM-AIR-507)
- Guidance Material for Aircraft Type Training (Theoretical and Practical) (CAAT-GM-AIR-508)
- Guidance Material for Demonstration Of 6/24 Months Maintenance Experience (CAAT-GM-AIR-509)
- Guidance Material for Aircraft Maintenance (CAAT-GM-AIR-513)

3.9.2 Components, Engines and APU Certifying Staff

- ☐ The minimum age for C/S is 21 years.
- ☐ Experience, training and competency requirements
- ☐ TCAR AIR Part-145 C/S individual authorisation - initial issue, extension (scope of work), renewal and withdrawal procedures

The competency assessment process for issuance, extension, renewal of the TCAR AIR Part-145 C/S individual authorisation should be described in MOE chapter 3.14.

- ☐ Recurrent training procedures (e.g. maintenance organisation procedures, new technology, human factors issues)
- ☐ Demonstration of 6/24 months maintenance experience including criteria to define similarity of engines, components or APUs, relevant to the scope of work held by the maintenance organisation, to be used for the demonstration of 6/24 months requirement.

For further guidance, refer to:

- Guidance Material for Components, Engines and APU Certifying Staff (CAAT-GM-AIR-510)
- Guidance Material for Demonstration of 6/24 Months Maintenance Experience (CAAT- GM-AIR-509)

3.9.3 Specialised Services (NDT) Certifying Staff

- ☐ The minimum age for C/S is 21 years
- ☐ Internal experience, training and competency requirements in addition to EN4179
- ☐ TCAR AIR Part-145 C/S individual authorisation - initial issue, extension (scope of work), renewal and withdrawal procedures

For further guidance, refer to Guidance Material for Non-Destructive Testing (NDT) Qualification (CAAT-GM-AIR-516).

Note:
The competency assessment process for issuance, extension, renewal of TCAR AIR Part-145 C/S individual authorisation should be described in MOE chapter 3.18.

- ☐ Continuation training procedures (e.g. maintenance organisation procedures, new technology, human factors issues)
- ☐ Demonstration of 6/24 months maintenance experience

For further guidance, refer to Guidance Material for Demonstration of 6/24 Months Maintenance Experience (CAAT-GM-AIR-509).

3.10 Certifying Staff and Support Staff Records

Reference: 145.A.55(d)1, 145.A.55(d)3, 145.A.55(d)4, 145.A.55(d)5, 145.A.35(j), 145.A.35(k), 145.A.35(h), AMC1 145.A.55, GM1 145.A.55, AM1C 145.A.55(d), 145.A.55(e), 145.A.55(f), 145.A.55(g)

This MOE chapter should describe how the C/S – S/S records are managed.

- ☐ Composition of the records:
  - Identity
  - date of birth
  - TCAR AIR Part-145 C/S – S/S individual authorisation reference number
  - Experience
  - Scope of the authorisation, date of issue, validity
  - Copy of the licence
  - Copy of diplomas, copy of training certificate
  - Continuation training
  - Copy of the TCAR AIR Part-145 C/S – S/S individual authorisation
  - Summary sheet
  - C/S assessment check lists and associated documents and materials
  - Type of records - electronic or paper copy
  - Management of C/S records
  - Etc.
- ☐ Retention of records
  Personnel records shall be kept for the duration of the person's employment with the organisation and shall be retained for at least 3 years after the person has left the organisation or after an authorisation issued to that person has been withdrawn.
  - Duration and location
  - Type of documents
- ☐ Format of the TCAR AIR Part-145 C/S – S/S individual authorisation document and authorisation codes
- ☐ Procedure to ensure C/S can show their authorisation certificate to any authorised person within 24 hours, including line maintenance locations and activities outside the approved locations, etc.
- ☐ Control of C/S records:
  - Authorised persons
  - CAAT personnel
  - Authorised managers
  - Delivery of a copy of their TCAR AIR Part-145 C/S – S/S individual authorisation in either a documented or electronic format. The scope of work has to be detailed, including limitations when applicable.

- ☐ Access to records
  - C/S – S/S should be given access upon request to their personal records
  - Maintenance organisation should furnish C/S – S/S with a copy of their personal record upon request, when leaving the organisation.

For further guidance, refer to Guidance Material for Aircraft Certifying Staff and Support Staff (CAAT-GM-AIR-507).

3.11 (Reserved)

3.12 Compliance Monitoring and Safety Management Personnel

Reference: AMC1 145.A.10, 145.A.30(e), AMC3 145.A.30(e), 145.A.55(d)3, 145.A.55(d)4*, 145.A.55(f), 145.A.55(g), 145.A.75(b), AMC1 145.A.75(b), GM1 145.A.75(b)*

This MOE chapter should describe how compliance monitoring and safety management personnel are managed. Initial and recurrent training in relation of each job function needs to be specified.

- ☐ Required experience and competency (e.g. professional background, minimum number of audits performed under supervision)
- ☐ Required training including audit techniques, regulations, MOE and recurrent training
- ☐ Specific experience and technical training in order to be authorised to audit specific areas or to cover specific audit functions, as applicable to the maintenance organisation (e.g. audit of NDT areas, Lead Auditor)
- ☐ Scope of authorisation for auditors (e.g. Product Auditor, System Auditor, NDT Auditor)
- ☐ Authorisation issuance, extension, renewal or withdrawal procedures

Note: The competency assessment process for issuance, extension, and renewal of the TCAR AIR Part-145 authorisation should be described in MOE chapter 3.19.

- ☐ Independence of compliance monitoring audit personnel when the maintenance organisation uses skilled personnel working within another department, other than that of compliance monitoring
- ☐ Retention of records:
  Personnel records shall be kept for the duration of the person's employment with the organisation and shall be retained for at least 3 years after the person has left the organisation or after an authorisation issued to that person has been withdrawn.
  - Duration and location
  - Type of documents
- ☐ Process to check that the number of compliance monitoring personnel remains relative to the maintenance activity to be supervised, refer to MOE chapter 2.22
- ☐ Allocated man-hours (if not full-time employed)

3.13 Independent Inspection Staff Qualification

Reference: 145.A.30(e), 145.A.55(d)1, 145.A.55(d)3, 145.A.55(d)4, 145.A.55(e)

This MOE chapter should describe the qualification and authorisation of the inspectors, which undertake inspection functions and sign-off related tasks. Initial and recurrent training in relation of each job function needs to be specified.

- ☐ Identification of the various types of inspectors in the maintenance organisation

The various types of inspector personnel, as applicable to the maintenance organisation, should be addressed (e.g. aircraft inspector, component inspector, engine inspector, store receiving inspector), with a clear differentiation for each different rating in the scope of work (e.g. aircraft, engines, components, specialised services).

It is recommended that a list of all maintenance personnel, formally authorised to sign-off tasks as Inspectors, is available in the maintenance organisation under the control of the compliance monitoring Manager

For example, they may be authorised:

- As aircraft, component and engine inspectors, in order to sign-off the tasks performed under supervision, refer to MOE chapter 2.13 table
- As aircraft, component and engine inspectors, in order to sign-off independent inspection tasks, refer to MOE chapter 2.13 table
- As receiving inspectors, to perform and attest to the receiving inspection of aircraft components and materials as detailed in MOE chapter 2.2

An aircraft, component and engine inspector is not authorised to issue a release to service for aircraft or components or engines, unless they also hold a certifying staff privilege.

In the aircraft base maintenance environment, the inspector's function does not correspond to the S/S function. After the task sign-off, a further inspection stage is necessary by TCAR PEL Part-66 in category B1, B2, B2L, B3 and L for S/S, as applicable. S/S should ensure that all relevant tasks or inspections have been carried out to the required standard before the TCAR PEL Part-66 in category C for C/S issues the CRS.

Where staff are holding more than one authorisation (e.g. mechanic, inspector and C/S), the different authorisations must be clearly distinguished. For example, a person may be at the same time:

- airframe mechanic on the A320 (CFM56), B777 (GE90) and ERJ-170 (GE CF34)
- airframe inspector on the A320 (CFM56) and B777 (GE90)
- holding an authorisation as C/S only for the B777 (GE90)

☐ Experience, training and competency requirements:

- Aeronautical and practical experience
- General Training (FTS, CDCCL, EWIS when needed and Human Factors, MOE, standard practices, etc.)
- Specific training requirements applicable to the scope of activity (aircraft, engines, stores, etc.)
- Knowledge of the language in which the maintenance approved data is written
- Authorisation issuance, extensions, renewals or withdrawal procedures including scope of authorisation

The competency assessment process for issuance, extension, renewal of the TCAR AIR Part-145 authorisation should be described in MOE chapter 3.19.

☐ Recurrent training procedures, including:

- Training program (MOE and associated procedures, TCAR AIR Part-145, Human Factors, special requirements, etc.)
- Training set-up
- Duration and intervals

☐ Retention of records
Personnel records shall be kept for the duration of the person's employment with the organisation and shall be retained for at least 3 years after the person has left the organisation or after an authorisation issued to that person has been withdrawn.
- Duration and location
- Type of documents

3.14 Mechanics qualification and records

Reference: 145.A.30(e), AMC3 145.A.30(e), 145.A.55(f), 145.A.55(g) 145.A.55(d)3, 145.A.55(d)4

This MOE chapter should refer to the different specialties of mechanics (e.g. airframe mechanics, powerplant mechanics, avionics, sheet metal workers, cabin, fuel, engines, painters, welders, cleaners, components, NDT staff, composites, line maintenance), as applicable to the maintenance organisation. Those personnel have to be authorised by the maintenance organisation approved under TCAR AIR Part-145 to sign-off tasks that they have personally performed. Consistency should be ensured with the sign-off policy described in MOE chapter 2.13. An authorised mechanic is not authorised to issue a release to service for aircraft, components, engines or NDT, unless they also hold a certifying staff privilege. Initial and recurrent training in relation of each job function needs to be specified.

☐ Identification of the various types of mechanics in the maintenance organisation

It is recommended, that a list of all maintenance personnel, formally authorised to sign-off tasks as mechanics, is available in the maintenance organisation under the control of the Compliance Monitoring Manager.
Where staff hold more than one authorisation (e.g. mechanic, inspector, C/S), the different authorisations must be clearly distinguished. For example, a person may be at the same time:
- airframe mechanic on the A320 (CFM56), B777 (GE90) and ERJ-170 (GE CF34)
- airframe inspector on the A320 (CFM56) and B777 (GE90)
- holding an authorisation as C/S only for the B777 (GE90)

There should be clear differentiation for each different rating in the scope of work (e.g. aircraft, engines, components and specialised services)

☐ Experience, training and competency requirements
☐ Aeronautical and practical experience,
☐ General training (e.g. FTS, CDCCL, EWIS when needed and Human Factors, MOE, standard practices)
☐ Specific training requirements applicable to the scope of activity (e.g. aircraft, engines)
☐ Knowledge of the language in which the maintenance approved data is written
☐ Authorisations issuance, extensions, renewals or withdrawal procedures including scope of authorisation

The competency assessment process for issuance, extension, renewal of the TCAR AIR Part-145 Authorisation should be described in MOE chapter 3.19.

☐ Recurrent training procedures
- Training program (e.g. MOE and associated procedures, TCAR AIR PART-145, Human Factors, specific technical requirements)
- Training set-up

- Duration and intervals

☐ Retention of records

Personnel records shall be kept for the duration of the person's employment with the organisation and shall be retained for at least 3 years after the person has left the organisation or after an authorisation issued to that person has been withdrawn.

- Duration and location
- Type of documents

3.15 Process for exemption from aircraft/aircraft component maintenance tasks

Reference: 145.A.65(b)1, GM2 145.A.65(b)1

This MOE chapter should describe the procedures of the maintenance organisation regarding exceptional authorisations related to maintenance tasks. Deviations have to be requested by the operator to CAAT or granted by the operator in accordance with a procedure acceptable to CAAT. The contract between the operator and the maintenance organisation must specify the level of support that the maintenance organisation may provide to the operator in order to substantiate the deviation request. This MOE chapter should be applicable only under these circumstances.

☐ System for control and processing with CAAT for exemptions:

- Support the maintenance organisation may provide to the operator/customer in order to substantiate a deviation request from the maintenance programme (e.g. one time extension of task interval due to unavailability of tools, materials, parts, etc.)

Deviations from the maintenance programme shall be managed by the CAMO. The contract between the maintenance organisation and the CAMO should specify the support expected from the maintenance organisation in this regard.

This MOE chapter should describe the policy in place on this matter, while the detailed procedures applicable to each customer/operator should be included in MOE Part-4 or in separate interface documents.

☐ Relationship with the operator in a case of exemption for an intervention in progress by the workshop

☐ Supply the operator with information enabling the formulation of requests for exceptional authorisation applications

☐ Control of the approval by CAAT (linked with CRS)

The difference between work associated with the exceptional authorisation application related to maintenance tasks, on behalf of the operator and the normal TCAR AIR Part-145 activities should be considered.

3.16 Concession Control for Deviations from the Organisations' Procedures

Reference: AMC1 145.A.65(2)

This MOE chapter should describe the procedures to be followed by the maintenance organisation in order to deviate from the approved MOE procedures.

Any request for concession to deviate from MOE procedures must remain in compliance with any regulatory requirement, with particular reference to TCAR AIR Part-145. Under no circumstances may this MOE chapter be used to deviate from regulatory requirements.

- ☐ Concession criteria:
  - Objective, procedures involved, justifications, compensatory conditions, period of validity, etc.
- ☐ Concession management procedure
  - Internal evaluation
  - Drafting process
  - Response
  - Internal validation process and follow-up
- ☐ System of approval and control of concession
- ☐ Feedback from the compliance monitoring system to CAAT
  - Any concession must be approved by CAAT

3.17 Qualification Procedure for Specialised Activities such as NDT, Welding, etc.

Reference: 145.A.30(f), AMC3 145.A.30(e), 145.A.55(d)3, 145.A.55(d)4, 145.A.55(f), 145.A.55 (g)

This MOE chapter must refer to the qualification of specialised services staff such as defined in AMC1 145.A.30(f). It should apply to all the specialised services mentioned in MOE paragraph 1.9.4 (e.g. NDT, painting, welding, machining, NDI).

This MOE chapter should be structured to provide qualification requirements for each group of specialised services staff in a separate paragraph. Initial and recurrent training in relation of each job function needs to be specified.

EN4179 requires that an NDT written practice must be in place to define:

- ☐ Specific techniques for each NDT method used in the maintenance organisation
- ☐ Qualification and authorisation of NDT staff to meet the requirements of EN4179

The following document must be issued:

- ☐ A document associated to the MOE to be referred to as the NDT Manual, detailing only the technical compliance of NDT activities and techniques under the control and approval of the responsible NDT Level 3 – refer to MOE chapter 1.9. In addition, the related approval process is to be described in MOE chapter 1.11.
- ☐ A procedure detailing the qualification and authorisation of NDT staff is to be included in MOE chapter 3.11.

3.17.1 NDT Personnel

The organisation shall develop a NDT written practice detailing the NDT qualification and certification programme.

This MOE chapter shall detail the procedures for the issue of an NDT sign-off authorisation.

- ☐ NDT staff
  - List of NDT personnel
  - Levels of qualification and authorisations

- Role and privileges of these staff (including responsible Level 3 person who must approve the organisation's NDT Manual)

☐ Experience and qualification
- Criteria regarding experience, training and skills
- Experience required by NDT methods for each level of authorisation
- Responsible NDT Level 3 must demonstrate an appropriate knowledge of the manufacturers' maintenance data, TCAR AIR Part-145 requirements, MOE, Human Factors, FTS and EWIS
- Level 3 requires suitable training and examination provided by an organisation under the general control of NDT Board acceptable to CAAT

☐ Training
- Basic NDT training for each level of authorisation
- Training on the NDT procedures of the maintenance organisation

☐ Examination
- Procedure for skills assessment (practical assessment and examination related to the job card)
- General examination on the fundamentals of the NDT methods
- Specific examination by NDT method
- Practical examination by level of authorisation
- Medical examination
- Eyesight testing

☐ Continuation training and testing

☐ Authorisations issuance, renewal or withdraw procedures

☐ Retention of NDT staff records
- Duration and location
- Types of documents

☐ Contract arrangement, applicable in the case of contracted staff as per AMC1 145.A.30(d)

For further guidance on the related requirements for personnel training, experience and examination, refer to Guidance Material for Non-Destructive Testing (NDT) Qualification (CAAT-GM-AIR-516).

For further guidance on NDT Level 3 qualification requirements, refer to Guidance Material for Maintenance Organisation Management Personnel (CAAT-GM-AIR-505).

3.17.2 Other Specialised Activities Personnel (Welders, Painters, etc.)

☐ Identification of the various types of specialised activities personnel in the maintenance organisation

The maintenance organisation should include the qualification process for each specialised activity (refer to MOE paragraph 3.17.1 for an example of the topics listed for NDT staff qualification procedure). The qualification process should be based on international industry standards or manufacturer published standards.

3.18 Management of External Working Teams

Reference: 145.A.47(d), GM1 145.A.47(d), 145.A.205

This MOE chapter should refer to the role of outside teams acting in the premises of the maintenance organisation to carry out a maintenance task on an aircraft, engine or component in the scope of a task under the responsibility of the maintenance organisation.

3.18.1 External Team Working under their own TCAR AIR Part-145 Approval

In this case, at the end of the work, the external team must issue their own CRS for the work done (aircraft CRS or CAAT Form 1, as applicable).

- ☐ Segregation between the two maintenance organisations working in the same premises
- ☐ Clear work order provided to the external working team
- ☐ Type of support (e.g. tools, equipment, facilities) made available to the external team
- ☐ Management of the progress of work (e.g. meetings)
- ☐ TCAR AIR Part-145 CRS to be expected from the external team

3.18.2 External Working Team not holding TCAR AIR Part-145 Approval

In this case, the external working team should be considered as a subcontractor and the applicable procedures developed in MOE chapter 2.1 should be followed. The maintenance organisation should be listed in MOE chapter 5.2 together with the scope of authorisation.

- ☐ Control of the subcontractor
- ☐ System for control of materials, tools, working instructions and procedures
- ☐ System for control of documentation such as drawings, modification, repairs instructions
- ☐ Management of the progress of work (e.g. meetings)
- ☐ Certification procedure for work performed by the outside team (e.g. repairs, replacements, modifications, overhauls, tests, inspections)
- ☐ Environmental conditions
- ☐ Final certification
- ☐ Training on internal procedures to external staff

3.19 Competency Assessment of Personnel

Reference: 145.A.30(a)3, 145.A.30(a)4, 145.A.30(e), AMC1 145.A.30(a), AMC1 145.A.30(e) , AMC2 145.A.30(e), AMC5 145.A.30(e), GM2 145.A.30(e), GM3 145.A.30(e), 145.A.35(a), AMC1 145.A.35(a), AMC1 145.A.35 (f), Appendix I to AMC3 145.A.30(e)

This MOE chapter applies to all maintenance personnel involved in TCAR AIR Part-145 activities (management personnel, C/S, mechanics, inspectors, compliance monitoring auditors, engineering staff, production planning staff, store inspectors, tools administrators, purchasers, etc.).
The qualification requirements to be assessed for each category of staff (being different for each staff category) are expected to be found in the relevant MOE chapter, for example:

- MOE chapter 3.9 in the case of C/S – S/S
- MOE chapter 3.12 for compliance monitoring and safety management auditors
- MOE chapter 3.13 for inspectors
- MOE chapter 3.14 for mechanics
- Etc.

- ☐ Management of competency assessments
  - Procedures for initial issuance, extension and renewal of an authorisation (process and methods used)
  - Responsible person
  - Intervals
  - Assessors
  - Examination and assessment committee
  - Actions to be taken when the assessment is not satisfactory

☐ Competency assessment should include:
- Verification that all the applicable qualification requirements for the specific category of staff as detailed in the relevant MOE chapter and Job Description are met, for example MOE chapter 3.9 in the case of C/S.
- Verification of the competencies listed in GM2 145.A.30(e) and include verification of:
  - relevant knowledge skills and experience on the product or technical area as applicable to the job function
  - appropriate attitude towards safety and observance of procedures
  - knowledge of the procedures as applicable to the job function (e.g. handling and identification of components, MEL use)

☐ Competency assessments should be based on:
- Review of personnel records
- Interviews
- Evaluation of competency On-the-Job performance or testing of knowledge by appropriately qualified staff (e.g. in the case where the assessment is related to a new activity for which the maintenance organisation is not yet approved, such as a new aircraft type, new component, new maintenance level)

☐ Assessment records
- Retention at least 3 years after the person has left the organisation, or after an authorisation issued to that person has been withdrawn
- Location
- Type of documents
- Clear identification of the scope of the assessment (initial, extension or renewal of an TCAR AIR Part-145 C/S – S/S individual authorisation).

For example:
- For aircraft C/S, which is/are the category(s) (e.g. B1 line maintenance certifying staff, B1 base maintenance support staff, C base maintenance certifying staff, A line maintenance certifying staff, etc.) and which is/are the aircraft type (s) being assessed for endorsement in the authorisation (initial or extension of privileges);
- For components C/S, which ratings (e.g. C14, C6, C5) and which specific components associated to each rating (e.g. Landing Gears P/N, Battery P/N) are assessed for endorsement in the authorisation (initial or extension of privileges);
- For compliance monitoring and safety management auditors, what is the scope of the auditor authorisation (e.g. system, procedures or product audit)
- Etc.

☐ The maintenance organisation should provide staff with a copy of their personal records, upon request, when leaving the organisation

A template in GM3 145.A.30(e) may be used to record the professional experience gained and the training received in the maintenance organisation. This document can be provided to staff when leaving the organisation together with associated evidence, such as training certificates or experience logbooks, etc., and be considered during the competency assessment of the individual in another organisation.

☐ Procedures to take credit for experience and training for new maintenance personnel joining the maintenance organisation - refer to GM3 145.A.30(e)

☐ Procedures to assess the need for EWIS training for the various categories of maintenance personnel, when applicable to the scope of approval of the maintenance organisation

For further guidance on EWIS training programs for maintenance organisation personnel, refer to Guidance Material for Electrical Wiring Interconnection Systems Training Program (CAAT-GM-AIR-515).

- ☐ Procedure to assess the need for FTS training for the various categories of maintenance personnel, with particular reference to those involved in the compliance of CDCCL tasks, when applicable to the scope of approval of the maintenance organisation - refer to Appendix I to AMC3 145.A.30(e)

3.20 Training Procedures for On-the-Job Training

Reference: Section 6 of Appendix III to TCAR PEL Part-66

This MOE chapter should detail the process / procedure for conducting and delivering OJT. This shall include:

- ☐ List of supervisors / assessors
- ☐ List of types OJT being conducted
- ☐ List of approved OJT log books

Note:

- OJT can only be performed in an Organisation holding a valid TCAR AIR Part-145 approval.
- The list(s) may be directly inserted in this chapter of the MOE or managed as a separate associated list.

For further guidance, please refer to Section 6 of Appendix III to TCAR PEL Part-66

3.20.1 OJT Content and OJT Logbook

The OJT shall include a series of activities and tasks representative of the aircraft type rating, systems, and license category applied for and may cover more than one license category.

The OJT shall be documented in an OJT logbook reporting the following:

- ☐ Name of the applicant;
- ☐ Date of birth of the applicant;
- ☐ The approved maintenance organisation(s) where the OJT was carried out;
- ☐ Aircraft rating and license categories applied for;
- ☐ List of tasks, including:
  - task description;
  - reference to job card/work order/aircraft tech log, etc.;
  - location of task completion;
  - date of task completion;
  - aircraft registration(s).
  - names of the mentors (including license number, if applicable);
  - a signed recommendation of the mentors for the successive final assessment of the applicant

3.20.2 Final assessment of the applicant

The final assessment of the applicant may only be performed once the OJT logbook has been completed and the mentors have signed the related recommendation.

The designated assessor(s) conducting the final assessment shall notify the date of the assessment to the licensing authority well in advance to allow a possible participation of the same authority.

The objective of the final assessment is to verify that the applicant has sufficient technical knowledge

as well as the appropriate skills and attitude and that he or she is competent to work independently as type-rated certifying staff on a particular aircraft type.

The final assessment shall have a minimum duration of one working day.

- ☐ The assessment shall sample:
  - the general technical knowledge required for the particular license category;
  - the aircraft-type-specific knowledge and skills for the particular license category;
  - the understanding of the license privileges relevant to the aircraft and to the license category;
  - the appropriate behavior and safety attitude of the applicant in relation to the maintenance
  - environment.
- ☐ The assessment shall be recorded in a report containing the following information:
  - identification data of the applicant;
  - identification data of the assessor(s);
  - date and time frame of the assessment;
  - content of the assessment;
  - result of the assessment: Passed or Failed.
  - signature of the assessor(s), the candidate and, if applicable, the independent observer(s).
- ☐ A failed assessment may be retaken after 3 months or, if additional training has been received and a new recommendation by the mentors has been made, earlier than 3 months if agreed by the assessor(s). After three failed attempts, the complete OJT shall be repeated.

3.20.3 Requirements for mentors and assessors

- ☐ Mentors
  - hold a valid aircraft maintenance license (AML) issued in accordance with TCAR PEL Part-66 or a valid and fully compliant with ICAO Annex 1 AML in accordance with TCAR AIR Part-145 Appendix IV, which is acceptable to the CAAT;
  - have been holding, for at least 1 year, an AML in the same category, when compared to the one for which the OJT is being mentored, that is endorsed with a type rating appropriate to exercise the privileges on the related aircraft;
  - have the necessary release or sign-off privileges in the maintenance organisation where the OJT is performed;
  - have experience in training other people (such as being apprenticeship instructors, instructors in accordance with TCAR PEL Part-147, having received train-the-trainer courses or having any other comparable national qualification, or having a training to do so that is acceptable to the CAAT).
- ☐ Assessors of the final assessment
  - hold a valid AML issued in accordance with Part-66 or a valid and fully compliant with ICAO Annex 1 AML in accordance with TCAR AIR Part-145 Appendix IV, which is acceptable to the CAAT;
  - have been holding, for at least 3 years, an AML in the same category, when compared to the one for which the OJT is being assessed, endorsed with the same or similar aircraft type rating;
  - have experience and/or have received training in assessing others (such as being apprenticeship instructors, examiners in accordance with TCAR PEL Part-147, having

received train-the-trainer courses, or having any other comparable national qualification, or having a training to do so that is acceptable to the CAAT);
- shall not have been involved as a mentor of the applicant in the OJT; when the assessor has taken part in the OJT performance, then an independent observer shall be present during the OJT assessment.

3.21 Procedure for the Issuance of Recommendation to CAAT for First Aircraft Type Endorsement

Reference: TCAR PEL Part 66

This paragraph is limited to 'A' rated TCAR AIR Part-145 organisations, where CAAT, as the licensing authority for the TCAR PEL Part-66 License, will accept a submission of recommendation letter from the organisation for the issue of a license.

By recommending an application, the organisation confirms that they believe the applicant meets all requirements of TCAR PEL Part-66 for the issue of a license in the category, sub-category or rating stated on the recommendation letter. In all cases, the aircraft maintenance license can only be issued to the applicant by the CAAT.

The section should detail or refer to the internal procedures that the organisation has developed to verify the knowledge training and certification, and the accuracy and correctness of the experience recorded in the logbook.

For further guidance please refer to AMC and GM to TCAR PEL Part-66 Appendix II — Aircraft Type Practical Experience and On-the-Job Training – List of Tasks

The procedure should include how the following steps are achieved.

3.21.1 Submission of OJT Plan through The CAAT EMPIC System

The applicant shall submit the OJT application package through the CAAT EMPIC system with all supporting documents required for review and acceptance. The submission shall include,

- ☐ OJT Application Plan and Evaluation Form;
- ☐ Approved OJT Programme and detailed OJT Plan as specified in the relevant Part-145 Maintenance Organisation Exposition (MOE);
- ☐ Details of OJT Plan, Task of OJT and the nominated OJT Mentor(s) and Assessor(s) qualification and experience requirements defined in the approved MOE;
- ☐ Copy of a valid Aircraft Maintenance License (AML);
- ☐ Completion Certificate of the relevant approved Type Training Course;
- ☐ Any additional supporting evidence required by CAAT.
- ☐ The OJT Plan clearly identify the aircraft type, scope of tasks, training duration, assessment method, and location where the OJT will be conducted.

Note: The submitted OJT Plan shall be reviewed by PEL (ATO Inspector, AME Inspector, and Subject Matter Expert (SME-AME)) as applicable, to verify compliance with the requirements of TCAR PEL Part-66, applicable procedures, and the approved Part-145 MOE.

- Verify that the submitted OJT Plan complies with TCAR PEL Part-66, applicable AMC/GM provisions, and the approved Maintenance Organisation Exposition (MOE).
- Review the OJT programme structure and task distribution to ensure that the tasks are appropriately divided between line and base maintenance activities, including critical and complex maintenance tasks, and meet the minimum required task percentages for the applicable license category.

- Confirm that the OJT timeline and sequencing comply with regulatory requirements, including completion of the OJT within 3 years before application and performance of at least 50% of the OJT tasks after completion of the related aircraft theoretical type training.
- Verify that the nominated Mentor and Assessor meet the required qualifications, license validity, experience requirements, certification privileges, and independence criteria in accordance with the approved OJT procedures.
- The result of the review, including acceptance, rejection, or request for additional information, shall be notified to the applicant through the CAAT EMPIC system

3.21.2 Submission of Request for Final Assessment for First Type Rating Endorsement

The applicant shall submit a request for the final practical assessment through the CAAT EMPIC system with the complete OJT package and supporting evidence. The submission shall include:

- ☐ Assessment Observation and Type Rating Endorsement Application Form;
- ☐ Fully completed OJT records and OJT Logbook;
- ☐ Recommendation and certification signed by the OJT Mentor(s);
- ☐ Evidence of completion of all required OJT tasks;
- ☐ Proposed date, time, and location of the practical assessment;
- ☐ Notification from the nominated Assessor(s) submitted sufficiently in advance to allow CAAT participation or observation, where deemed necessary by PEL

Note: PEL shall review the submitted OJT package to verify completeness, compliance with TCAR PEL Part-66, AMC/GM requirements, and readiness for the final assessment. The review shall include:

- verify the OJT logbook contains all required information, including applicant details, approved maintenance organisation, training location, aircraft registration, and detailed task descriptions.
- confirm that each completed task is signed by the applicant and countersigned by the designated Mentor, with reference to the corresponding job card or work sheet.
- ensure that a Compliance Report is provided, demonstrating that the OJT programme meets all applicable requirements of TCAR PEL Part-66.
- verify that a recommendation for final assessment is signed by the Mentor(s) and included in the OJT package.
- verify that the assessment had a minimum duration of one working day.
- ensure the assessment sampled all four required areas: general technical knowledge, type-specific knowledge/skills, license privileges, and safety attitude/behavior
- verify the final assessment arrangements, including notification of final assessment by assessor and assignment of an AME Inspector through the CAAT EMPIC system, when applicable.
- the result of the review, including acceptance, rejection, or request for additional information, shall be notified to the applicant through the CAAT EMPIC system before the final assessment may proceed.

The assigned AME Inspector shall observe the conduct of the practical assessment to verify that the assessment is performed in accordance with the approved OJT programme, applicable procedures, and regulatory requirements. The AME Inspector shall:

- monitor the assessment process;
- verify the competency demonstration performed by the applicant;
- ensure the assessment is conducted fairly and objectively;
- complete the applicable Assessment Observation Checklist;
- the assignment shall be managed through the EMPIC system;
- following completion of the observation, the completed Assessment Observation Checklist

shall be uploaded and submitted through EMPIC as part of the official assessment record.

3.21.3 Submission of Assessment Result and Supporting Documents.

The applicant shall submit the final assessment results and complete OJT package through the CAAT EMPIC system. The submission shall include:

- ☐ Assessment Observation and Type Rating Endorsement Application Form;
- ☐ Completed Assessment Observation Checklist (if applicable);
- ☐ Final assessment result endorsed by the Assessor(s);
- ☐ Complete OJT Logbook and supporting task records;
- ☐ Any additional documents required by CAAT for processing of the aircraft type rating endorsement

Note: PEL shall review and evaluate the submitted assessment results and supporting documents to verify:

- the final assessment report, including confirmation of the assessment result, applicant and assessor identification details, assessment date and duration, assessment tasks, and required signatures of the assessor, applicant, and independent observer (if applicable).
- the assessment covered the required competency areas, including general technical knowledge, aircraft-type-specific knowledge and skills, understanding of AML privileges, use of maintenance data and procedures, troubleshooting ability, and appropriate safety attitude and human factors awareness.
- the review of supporting documentation, including compliance Report, assessment checklist demonstrating compliance with TCAR PEL Part-66 requirements.
- the final approval and notification of the assessment result through the CAAT EMPIC system for further processing and aircraft type rating endorsement.
- the failure and retake requirements, including confirmation that applicants who fail the assessment shall undergo additional training or practical experience in the deficient areas before reassessment. Any retake shall normally be conducted at least 3 months after the failed assessment unless additional training has been completed and supported by a new mentor recommendation accepted by the assessor. Applicants who fail the assessment three times shall be required to repeat the complete OJT programme before applying for a new assessment.

PEL shall review and evaluate the submitted documents and process the endorsement of the aircraft type rating in accordance with the applicable requirements specified in TCAR PEL Part-66. The aircraft type rating endorsement shall be carried out in accordance with the requirements and limitations prescribed in TCAR PEL Part-66.

3.21.4 Submission of Aircraft Type Rating Endorsement Documents

The applicant shall submit:

- ☐ Application Form for Endorsement Type Rating;
- ☐ Any additional supporting documents may be required by PEL for further review and evaluation

3.22 Management System Record Keeping

Reference: AMC1 145.A.55, GM1 145.A.55, 145.A.55(c), 145.A.55(f), 145.A.55(g), 145.A.200(c), 145.A.200(a)1(v), GM1 145.A.200(a)1(v)

This MOE chapter should describe the management system record-keeping process.

The maintenance organisation shall ensure that the following records are retained:

- ☐ Records of management system key processes;
- ☐ Contracts, both for contracting and subcontracting;

Management system records shall be kept for a minimum period of 5 years.

It should include the following details:

- ☐ Definition of records to be stored and format
- ☐ Storage type, location and accessibility
- ☐ Responsibilities
- ☐ Access to records
- ☐ Retention periods
- ☐ Storage procedure and preservation of records
- ☐ Subcontracting record storage
- ☐ Facility management, including third party facilities
- ☐ Storage of electronic records
- ☐ Electronic safeguards and remote servers
- ☐ Transfer of records
- ☐ Management of records in specific circumstances (e.g. accidents)

PART 4 RELATIONSHIP WITH CUSTOMER/ OPERATORS

This MOE Part is to be considered applicable only when the maintenance organisation is holding a maintenance contract for aircraft, and is intended to cover any operator specific requirement, which has to be endorsed in the MOE for the purpose of being used in the performance of maintenance. An example of this could be how to acquire the necessary information for removal of serviceable components, etc. It is recommended to have a separate procedure for each operator.

When the maintenance organisation provides a service in accordance with the IATA Standard Ground Handling Agreement, this part is not applicable. Line maintenance procedures to be followed are the ones indicated in MOE Part L2, and any other line maintenance procedures directly provided by the operator (e.g. operator line station manual).

4.1 List of the Commercial Operators to Which the Organisation Provides Regular Aircraft Maintenance Services

Reference: 145.A.70(a)13

This MOE chapter should list those operators for whom maintenance is provided, with details of the types of aircraft, engines, APUs and the scope of work undertaken (e.g. Base maintenance, Line maintenance, Defect rectification) with any limitations.

4.2 Customer Interface Procedures and Paperwork

Reference: 145.A.55(a) 2, 145.A.55(a)3, 145.A.60(d), 145.A.65(b)1, GM2 145.A.65(b)1

4.2.1 Customer interface procedures.

This MOE chapter should describe the special mode of operation between the maintenance organisation and each contracting operator.

- ☐ Details of:
  - Procedures
  - Documents
  - Exchange of information, regarding:
    - Planning meetings
    - Technical issues
    - Quality of the maintenance performed
    - Reliability of the maintenance performed
- ☐ Training on customer operator procedures, including procedures to ensure correct completion of customer provided work cards (e.g. training on customer paperwork)

4.2.2 Customer paperwork

This MOE chapter should describe, for each contracting operator, how the maintenance organisation:

- ☐ completes operator's log books
- ☐ maintains the operator's technical records
- ☐ retains records on behalf of the operator
- ☐ communicates with the operator

PART 5 SUPPORTING DOCUMENTS

5.1 Sample of Documents

Reference: AMC 145.A.70(a)

This MOE chapter should list all the documents and forms in use by the maintenance organisation. Each form should be uniquely identified with a number and revision date to allow traceability of changes.

The following list is given as an example:

- ☐ Request to CAAT for approval of an MOE amendment
- ☐ Request to CAAT for acceptance of a capability list change
- ☐ Material tags: serviceable, unserviceable and scrap labels
- ☐ Tooling identification tag
- ☐ Maintenance task card (scheduled maintenance)
- ☐ Maintenance task card (additional defects)
- ☐ Base maintenance CRS
- ☐ Line maintenance CRS
- ☐ CAAT Form 1
- ☐ Compliance monitoring audit report form
- ☐ Compliance monitoring audit corrective action report form
- ☐ Personnel training records
- ☐ TCAR AIR Part-145 C/S – S/S individual authorisations, etc.

5.2 List of Subcontractors as per 145.A.75(b)

Reference: 145.A.70(a)14

This MOE chapter should:

- ☐ list the subcontractors, not holding a TCAR AIR Part-145 approval, working under the maintenance organisation compliance monitoring system. The list of subcontractors list shall include the following minimum information:
  - Name of the Subcontracted Organisation;
  - Locations(s) where subcontracted activities are carried out;
  - Activities which are subcontracted;
- ☐ be linked with MOE chapter 2.1 and 2.2.

5.3 List of Line Maintenance Locations as per 145.A.75(d)

Reference: 145.A.70(a)15, 145.A.75(d)

This MOE chapter should:

- ☐ list the line station locations, including airports and address;
- ☐ be linked with MOE chapter 1.8 and 1.9.

5.4 List of Contracted Organisations as per 145.A.70(a)16

Reference: 145.A.70(a)16

This MOE chapter should:

- ☐ list the contracted organisations holding a CAAT approval for the maintenance activity contracted;
- ☐ be linked with MOE chapter 2.1 and 2.2.

5.5 List of Used Alternative Means of Compliance as per Point 145.A.70(A)(17)

Reference: 145.A.70(a)(17), 145.A.120(a), 145.A.120(b)

This MOE chapter should include the list of alternative means of compliance currently approved/used and it is only applicable when the MOE 1.12 includes a procedure to develop AltMoC.

☐ Content of the list.

This list must include at least the following main information, as applicable:

- Title of the approved alternative means of compliance
- Reference of the approved alternative means of compliance;
- Date of approval

PART 6 RESERVED

PART 7 RESERVED

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