



GUIDANCE MATERIAL FOR MAINTENANCE ORGANISATION STAFF NUMBERS

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ABBREVIATIONS

AD	Airworthiness Directive
AMC	Acceptable Means of Compliance
AMM	Aircraft Maintenance Manual
APU	Auxiliary Power Unit
CAAT	The Civil Aviation Authority of Thailand
CMM	Component Maintenance Manual
EWIS	Electrical Wiring Interconnection Systems
FTS	Fuel Tank Safety
MOE	Maintenance Organisation Exposition
NDT	Non-Destructive Testing
SB	Service Bulletin
TCAR	Thailand Civil Aviation Regulation

0. INTRODUCTION

0.1 Scope and Applicability

The Civil Aviation Authority of Thailand (CAAT) is the Competent Authority for maintenance organisations¹ that are involved in the maintenance of Thai registered aircraft and components intended for fitment thereto as established by TCAR Part 145.A.1 General. CAAT is therefore responsible for the final approval of these maintenance organisations and for establishing procedures detailing how TCAR Part 145 applications and approvals are managed.

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

0.2 Purpose

The purpose of this GM is to provide guidance for:

- determining the staff numbers to be declared in MOE chapter 1.7: Manpower Resources and in CAAT Form 2
- demonstrating that sufficient staff are available to plan, perform, supervise, inspect and monitor the quality of the maintenance organisation in accordance with the approval (adequate resources to justify the grant of approval as defined in MOE chapter 1.8: Facilities to be Approved, and chapter 1.9: Scope of Work)

Note: CAAT auditors will check that:

- there are sufficient staff to plan, perform, supervise, inspect and monitor the quality of the maintenance organisation in accordance with the approval
- the staff numbers declared in CAAT Form 2 are consistent, at the time of the audit, with TCAR Part 145

0.3 Associated Instructions

CAAT has developed associated provisions (guidance, forms, 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 Web Site (www.caat.or.th)

0.4 Communication

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

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

0.5 Management of Approvals by CAAT

Maintenance organisation staff numbers must be approved by CAAT. This is done as part of the MOE approval or CAAT MOE supplement acceptance process.

0.6 References

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

1. CATEGORY OF PERSONNEL TO BE CONSIDERED

1.1 Management Personnel

The maintenance organisation must appoint an Accountable Manager and nominate a group of persons who represent the maintenance management structure. Depending upon the size and complexity of the maintenance organisation and the extent of approval, functions and responsibilities may be subdivided under individual managers or combined in any number of ways.

For example, in a small maintenance organisation, the Accountable Manager could combine responsibilities with those related to any of the following manager positions:

- line maintenance manager
- base maintenance manager
- workshop manager
- compliance monitoring manager
- safety manager

1.2 Technical Support Staff

Staff to be considered are those who are involved in the process of:

- planning the maintenance activities (planners)
- planning the availability of the resources necessary to perform the work (including availability of hangars, ground support equipment, etc.)
- keeping maintenance data available and up to date (librarians)
- preparing the relevant work packages (engineers and appropriate technical experts)
- archiving the maintenance records (technical records staff)

In addition, where a maintenance organisation is using its own job cards, the personnel who transpose the maintenance data (AMM, AD, SB, CMM, etc.) into maintenance tasks or who analyse and report inaccurate or ambiguous data, must also be considered.

1.3 Compliance Monitoring and Safety Staff

The staff numbers must include every person who is involved in:

- the safety policy and objectives
- maintenance organisation procedures issuance and revision
- independent audits including safety audits as applicable (internal and external) process, which are based on the annual audit plan
- compliance monitoring feedback reporting (requesting remedial actions)
- quality control (if applicable)
- SMS implementation

Note: Where the independent audit part of the compliance monitoring system is subcontracted to a person with an appropriate knowledge or to another maintenance organisation approved under TCAR Part 145, the time spent by this person or group of persons must be considered in the relevant staff hour plan.

1.4 Certifying Staff

The staff number must include every person who is authorised by the maintenance organisation (MOE chapter 3.9) to release an aircraft or an aircraft component to service.

The following types of certifying staff must be included:

- aircraft certifying staff: all staff who hold a company authorisation allowing the holder to release an aircraft to service within the A1 to A4 rating. Aircraft certifying staff must hold a license qualified in accordance with the regulation applicable to CAAT aircraft maintenance engineer licenses in Thailand with the relevant type or group rating.
- engine and APU certifying staff: all staff who hold a company authorisation allowing the holder to release an engine or APU to service within the B1 to B3 rating
- component certifying staff: all staff who hold a company authorisation allowing the holder to release a component to service within the C1 to C22 rating
- specialised services certifying staff: all staff who hold a company authorisation allowing the holder to release a specialised service performed on an aircraft, engine, APU or component to service within the D1 rating
- every commander or flight engineer who is authorised by the maintenance organisation to carry out and certify tasks which are listed in AMC1 145.A.30 (j) (4) paragraph 3

1.5 Support Staff

The staff number must include every person who is authorised by the maintenance organisation to support the Certifying Staff in managing and releasing the aircraft to service after base maintenance activity while not necessarily holding certification privileges.

Note: Support Staff must ensure that all relevant tasks or inspections have been carried out to the required standard before the Certifying Staff issues the certificate of release to service.

1.6 Maintenance Technical Staff other than Certifying Staff

The staff number must include every person who is authorised by the maintenance organisation (MOE chapters 3.8 and 3.11) to perform, sign-off or inspect any maintenance carried out on an aircraft, engine, APU or aircraft component according to approved data under the TCAR Part 145 approval.

Technical staff required to be considered are those acting within the approved ratings A1 to A4, B1 to B3, C1 to C22, D1 and include, but are not limited to:

- aircraft maintenance technicians (mechanic, avionics, cabin, etc.)
- components, engines, APU maintenance technicians
- support activities technicians (NDT, welding, cleaning, machining, etc.)
- supervisors and inspectors

1.7 Stores and Purchasing Department Staff

Staff numbers must include every person who makes available to the maintenance organisation, parts, components, tools and consumables:

- store keepers
- procurement staff (staff in charge of placing purchasing orders to any sources internally or externally)

1.8 Training Staff

Staff numbers must include every person who is responsible for providing training related services on behalf of the maintenance organisation, and include, but are not limited to:

- continuation and recurrent trainers
- safety trainers
- human factors specialists
- practical trainers
- classroom trainers (TCAR Part 145, aviation legislation, EWIS, FTS, etc.)

1.9 Contracted Staff

Contracted staff are all the external staff who are not directly or permanently employed by the maintenance organisation and who are involved in the maintenance activities.

Only long term contracted staff need to be considered for the purpose of defining the organisation's staff numbers. However, this does not release the maintenance organisation from complying with TCAR Part 145 requirements when using contracted staff for short-term periods.

2. CRITERIA TO BE CONSIDERED

2.1 Scope of Activity

A maintenance organisation must have sufficient staff according to the approved scope of work. This means that the following criteria must be considered:

- the size of the maintenance organisation
- the extent of the requested or approved scope
- number of sites (headquarters, main bases, line stations, engine and component shops)
- number of line and base maintenance contracts
- the variety of the capability list
- number of CRS and CAAT Form 1 releases

2.2 Production Planning

Production planning, must take into account human limitations and the total amount of lines of product to be managed at the same time. This information can be used to compare the adequacy of the workload and the staff hour availability during maintenance activities.

In addition, staff planning must show that the maintenance organisation has sufficient staff to plan, perform, supervise, inspect and monitor the quality of the maintenance organisation based upon the approved scope of work.

2.3 Staff Number Variation Requiring a CAAT Form 2 and MOE Application for Change

A CAAT Form 2 and MOE Application for Change must be made when a reduction or increase of the staff numbers meets the following criteria:

- is more than 25% of the total staff number declared in the MOE chapter 1.7 (e.g. reduction of 25 staff when the staff to maintain the approval was 100) or
- is affecting the approval (e.g. all Certifying Staff for a certain aircraft type approved under an A1 rating leave the maintenance organisation)

Note: Permanent and contracted staff must be considered

3. SUMMARY TABLE

	Categories	Sub-categories	Total by Sub-categories	Total
1.1	Management personnel	Accountable Manager		
		Compliance Monitoring Manager		
		Safety Manager		
		Line Maintenance Manager		
		Base Maintenance Manager		
		Workshop Manager		
		Etc.		
1.2	Technical support staff	Planners		
		Librarians		
		Engineers		
		Technical records staff		
		Etc.		
1.3	Compliance monitoring and Safety staff	Compliance monitoring personnel		
		Safety management personnel		
		Auditors		
		Quality control staff		
		Etc.		
1.4	Certifying Staff	Aircraft Certifying Staff – Ax rating		
		Engine and APU Certifying Staff – Bx rating		
		Component Certifying Staff – Cx rating		
		Specialised Service Certifying Staff – D1 rating (ET, PT, UT, etc.)		
		Commander or flight engineer holding a limited certification authorisation in accordance with 145.A.30(j)(4)		
		Etc.		
1.5	Support Staff for base maintenance	Support Staff		
1.6	Maintenance technical staff	Aircraft		
		Engine and APU		
		Component		
		Specialised services, etc.		

	Categories	Sub-categories	Total by Sub-categories	Total
1.7	Stores and Purchasing			
1.8	Training staff (in accordance with TCAR Part 145, 145.A.30(g))			
1.9	Certifying Staff (in accordance with TCAR Part 145, 145.A.30(g))			
1.10	Contracted staff			
Total				

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