# CAAT

สำนักงานการบินพลเรือนแห่งประเทศไทย
Civil Aviation Authority of Thailand

# Guidance Material on Operational Safety Competencies of Aerodrome Operators

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# 1    Introduction

## 1.1    Background

A.    The Director General (DG) of The Civil Aviation Authority of Thailand (CAAT) is responsible for providing regulatory oversight of the persons and entities conducting air operations in Thailand, operating and/or maintaining Thailand registered aircraft, operating and/or maintaining aerodromes and heliports in Thailand, or providing an air navigation service in Thailand. As part of CAAT's regulatory oversight responsibility, the DG may issue, modify, suspend, or revoke certificates, licenses, authorizations, and/or approvals.

B.    The DG may also make decisions and/or take actions to ensure appropriate compliance with the Aerodrome Regulations of Thailand.

C.    The Guidance Material (GM) is published by CAAT. The GM is a means of circulating essential information of an administrative or technical nature to holders of CAAT's License and Certificate.

## 1.2    Purpose

A.    The purpose of this Guidance Material is to provide supplementary guidance to aerodrome operators and applicants applying for a Public Aerodrome Operating Certificate on assessing the competence of operational personnel responsible for safety.

## 1.3    Applicability

A.    This Guidance Material applies to all persons or entities operating and/or maintaining aerodromes and/or heliports in Thailand and applicants applying for a Public Aerodrome Operating Certificate.

## 1.4    Terminology

A.    For ease of interpretation, several key terms used throughout this Guidance Material are defined as follows:

Background Knowledge    — The collective body of information and skill sets, gained through experience and training, that people need to have if they are to perform their roles competently. This includes memorized relevant facts, regulations, theories and principles, and knowing where to find such data when it is not necessary to commit them to memory.

| Experience | — Knowledge or skill in a particular job or activity, which you have gained because you have done that job or activity for a long time. |
| Hazard | — A condition or an object with the potential to cause or contribute to an aircraft incident or accident |
| Named Person | — A person, identified by name, who currently holds a specified post. |
| Risk | — The predicted probability and severity of the consequences or outcomes of a hazard. |
| Specified Post | — A post within an aerodrome management structure which has been identified as having accountability for the management of a specific safety related task. |
| Task | — An area of work for which a defined competence is deemed necessary. |
| Training / Education | — The process of learning the skills you need to do a particular job or activity. |

## 1.5 Application

A. The person at an aerodrome with overall responsibility for its safety management and/or an appropriately delegated person should identify which areas of competence and tasks are relevant to their aerodrome.

B. The tasks listed in the areas of competence, appropriate to a particular aerodrome, are those that should be vested in a particular "specified post" and "named person" occupying that post, and annotated in the document against each relevant task.

C. It is assumed that the "named person" for each task will have a comprehensive knowledge and understanding of the aerodrome management's policies and procedures.

## 2 Areas of Competence

A. The area of competence provides an aerodrome operator / applicant with a suggested checklist for assessing the level of operational safety management competence existing within their respective organizations, including any areas that are contracted out, and to ensure that they have the necessary expertise, at the appropriate level, to formulate and implement systems to adequately manage safety.

B. Some tasks associated with some competence areas may be contracted out by the aerodrome operator; whilst day-to-day operational management is the responsibility of the contractor, the aerodrome operator continues to have overall responsibility for the safe integration of contracted activities with the rest of the aerodrome operation.

C. The areas of competence also take account of the need to accommodate a range of aerodromes and their varied scope of operations. The following should be considered:

   1) Not all of the tasks listed will be appropriate or necessary for all aerodromes, an issue of particular interest to the smaller aerodromes; and

   2) Not all of the areas of competence have to be vested in one person, an issue of particular interest to the larger aerodromes.

D. The areas of Competence will assist the aerodrome operator to:

   1) Be satisfied that persons within the management structure possess the relevant operational safety competence;

   2) Identify the post and person that have accountability for a specific task;

   3) Identify gaps that may exist in the areas of competence for their particular aerodrome;

   4) Develop job specifications, and in recruitment and succession planning; and

   5) Provide, for aerodrome certification purposes, the safety assurance sought by the CAAT's Aerodrome Standards Department (AGA) on operational safety competence.

## 2.1    Regulatory Framework for Aerodrome Certification

| | Tasks | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Ensure that aerodrome certification requirements are met, and that the aerodrome operates in accordance with certification conditions restriction and statutory requirements. | | | | |
| 2 | Ensure an understanding of the CAAT's statutory duties in certificating and inspecting aerodromes. | | | | |
| 3 | Ensure an understanding by the aerodrome management of a Public Aerodrome Operating Certificate. | | | | |
| 4 | Ensure an understanding by the aerodrome management of the legal requirement for and status of the Aerodrome Manual. | | | | |
| 5 | Ensure that an aerodrome implements, communicates, and amends information and instructions concerned with ensuring the safe operation of aircraft in accordance with statutory and aerodrome management requirements. | | | | |
| 6 | Ensure that an aerodrome takes all reasonable steps to ensure that the aerodrome and its airspace are safe at all times for use by aircraft. | | | | |

## 2.2 Aerodrome Physical Characteristics

| | Tasks | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Determine aerodrome reference codes for taxiways and runways. | | | | |
| 2 | Ensure that the paved areas, runway strips, clear, and graded areas meet certification requirements. | | | | |
| 3 | Ensure that aerodrome is clear of obstructions, debris, and spoil. | | | | |
| 4 | Determine and instigate repair programmes process for aerodrome pavements and surfaces. | | | | |
| 5 | Ensure that the design and layout of the apron and manoeuvring area is adequate for the safety of intended operations. | | | | |
| 6 | Ensure that there is adequate provision for aerodrome drainage, particularly of the runway and runway strip. | | | | |
| 7 | Ensure that appropriate separation distances are provided between runways, taxiways, and aprons. | | | | |
| 8 | Calculate appropriate runway declared distances for normal and obstacle restricted operations. | | | | |
| 9 | Ensure variations of certification requirements are kept under review and removed where practicable, and as part of significant changes to aerodrome infrastructure, traffic levels, or aircraft types. | | | | |

## 2.3   Airside Safety Management and Flight Safety

| | Tasks | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Develop a safety management system for the control of airside safety risks, including those in relation to staff and passengers. | | | | |
| 2 | Establish systems for the carrying out of safety auditing and operational inspections. | | | | |
| 3 | Analyze feedback from auditing and inspections. | | | | |
| 4 | Use feedback from auditing and inspections to make appropriate changes to airside safety management procedures and their implementation. | | | | |
| 5 | Monitor airside planning and development for compliance with aerodrome safety policy. | | | | |
| 6 | Manage the interaction of aircraft servicing operations and other activities. | | | | |
| 7 | Plan and implement the training of internal and external staff working airside. | | | | |
| 8 | Establish systems to assess the safety performance of internal and external staff working airside. | | | | |
| 9 | Establish an aerodrome process for the reporting and follow-up of accidents and incidents on the aerodrome and in its local airspace, including closure action. | | | | |
| 10 | Establish and maintain an Airside Safety Committee. | | | | |

## 2.4 Risk Assessment

| | Tasks | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Establish and implement a process for carrying out risk assessments as part of the safety management system. | | | | |
| 2 | Identify hazards. | | | | |
| 3 | Evaluate risks. | | | | |
| 4 | Select and implement appropriate risk control measures, including the elimination of intolerable risks. | | | | |
| 5 | Review assessment of hazard and the effectiveness of risk control methods. | | | | |
| 6 | Plan and implement the training and development of internal and external staff involved in risk assessments. | | | | |

## 2.5 Safety Management and Human Factors

| | Tasks | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Develop, implement, and review an integrated Safety Management System for the aerodrome, taking account of the difference. between risks to people and risks to aircraft | | | | |
| 2 | Integrate safety, project, and resource management into strategic decision making. | | | | |
| 3 | Define the work of teams and individuals to achieve objectives with due regard for safety issues. | | | | |
| 4 | Develop productive working relationships. | | | | |
| 5 | Understand the impact of human factors when establishing safety systems and procedures. | | | | |
| 6 | Design systems and procedures taking full account of human factors, to encourage a positive safety culture at all working levels. | | | | |

## 2.6 Airfield Work in Progress

| | Tasks | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Undertake risk and resource assessments to ensure safe operations. | | | | |
| 2 | Monitor and maintain aerodrome status systems and equipment according to laid down procedures. | | | | |
| 3 | Promulgate and record information about aerodrome status and condition. | | | | |
| 4 | Inspect and monitor work in progress. | | | | |
| 5 | Ensure that adequate systems, procedures, and resources are in place for the planning, co-ordination, control, and oversight of work in progress. | | | | |
| 6 | Ensure that contingency plans are drawn up to manage breakdowns in operating systems. | | | | |
| 7 | Revise declared runway distances and other aerodrome operational limitations as appropriate. | | | | |
| 8 | Ensure that airside safety briefings are provided for external contractors and work areas are controlled to maintain safe operations. | | | | |
| 9 | Ensure compliance with the SMS requirements and SOPs when returning an operational area to service. | | | | |

## 2.7 Aerodrome Safeguarding

| Tasks | | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Ensure that building and other developments including wildlife habitats, both on and off the aerodrome, meet appropriate aerodrome certification, planning, and other legislation, in particular where the safety of operations may be affected. | | | | |
| 2 | Establish and maintain contact on safeguarding issues with the local authorities. | | | | |
| 3 | Assess proposed development against safeguarding criteria. This should include aerodrome certification requirements, Air Navigation Safety Zone, and other the safeguarding requirement. | | | | |
| 4 | Monitor immediate airport environs for safeguarding purposes, including temporary obstacles. | | | | |
| 5 | When appropriate carry out risk assessments to underpin safeguarding plans. | | | | |
| 6 | Monitor and review safeguarding policy and practice and amend if appropriate. | | | | |
| 7 | Ensure that:<br>a) The necessary surveys are undertaken in order to ensure the validity of the data used to promulgate obstacle information, and that changes in the obstacle environment that may affect aircraft operations is promulgated in a timely manner; and<br>b) The zoning maps are prepared and amended as necessary, and as required by relevant regulation(s). | | | | |

## 2.8   Aircraft Operations and Loading

| | Tasks | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Take account of aircraft performance requirements with regard to runway declared distances and reduced declared distances, other runway physical characteristics, obstacle criteria and the effects of crosswind, weather and contaminated runways. | | | | |
| 2 | Establish procedures for normal and dangerous cargo and be aware of load requirements for aircraft. | | | | |
| 3 | For aerodromes that undertake their own airside ground handling, ensure that aircraft are loaded in accordance with airline / operators' requirements, whilst meeting other safety requirements. | | | | |
| 4 | Where relevant, ensure that internal and external staff are trained in aircraft loading. | | | | |

## 2.9 Airside Vehicle Operations

| | Tasks | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Establish and monitor systems for the issue of Airside Driving Permits and Airside Vehicle Permits. | | | | |
| 2 | Ensure that procedures for auditing driver training and vehicle maintenance programmes are to established standards. | | | | |
| 3 | Ensure that airside vehicle accidents and incidents are recorded, investigated and closed by appropriate action, and ensure a system is established for the reporting of vehicle faults, documented according to laid down procedures. | | | | |
| 4 | Ensure that vehicles are operated in accordance with standard operating procedures and with regard to other airside users, traffic rules, signs, and markings. | | | | |
| 5 | Ensure that audits are undertaken to ensure compliance with procedures and practices which contribute to the safety of airside traffic and apron operations. | | | | |
| 6 | Ensure that the Airside Safety Committee considers and reviews all the above requirements. | | | | |

## 2.10 Runway Surface Friction

| | Tasks | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Ensure that runway surface friction measurement conforms to organizational, and national, taking account of prevailing weather conditions and trends. | | | | |
| 2 | Ensure that essential equipment for runway friction measurement and reporting is provided. | | | | |
| 3 | Make adequate provision for the storage, calibration, and care of runway surface friction measurement and reporting equipment. | | | | |
| 4 | Monitor runway surface friction measurement and reporting to ensure equipment is used according to established procedures. | | | | |
| 5 | Ensure that staff are trained in the use of runway surface friction measurement, and analyzing and reporting results. | | | | |
| 6 | Establish a system for the recording and retrieval of runway surface friction data. | | | | |
| 7 | Ensure that there are procedures for the analysis and interpretation of data collected by runway surface friction measurement. | | | | |
| 8 | Take account of the effect of work-in-progress on runway surface friction and ensure that the necessary procedures and promulgation action is taken. | | | | |

## 2.11  Wildlife Hazard Control

| | Tasks | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Establish a wildlife hazard control plan, including habitat management, and assess relevant areas for wildlife hazards using all available information sources. | | | | |
| 2 | Communicate information about wildlife hazards to all relevant parties. | | | | |
| 3 | Initiate and review appropriate bird dispersal action according to local circumstances and aerodrome characteristics. | | | | |
| 4 | Keep appropriate records in relation to wildlife hazard, bird strikes and bird dispersal. | | | | |
| 5 | Ensure that<br><br>a)  training and development for internal and external staff is given in the use of wildlife control measures; and<br><br>b)  sufficient trained and competent staff and well-maintained equipment resource is always made available. | | | | |
| 6 | Ensure that wildlife control process, including that outsourced meets the contract specifications and is effective, in accordance with safety performance metrics. | | | | |
| 7 | Liaise with the local community and local authority on wildlife hazard issues. | | | | |

## 2.12 Aeronautical Information Systems

| | Tasks | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Make available appropriate and up-to-date information on facilities, equipment status, procedures, obstacles, and other information that is considered relevant to flight safety. | | | | |
| 2 | Organize and promulgate information using appropriate information systems. | | | | |
| 3 | Promulgate information to relevant parties in an appropriate format for the safety and expedition of air navigation. | | | | |
| 4 | Ensure that the information and data provided meets the accuracies required by the national regulations and users, particularly that which is essential to aircraft operation. | | | | |

## 2.13 Surface Movement and Guidance System (SMGCS), Visual Aids for Approaches, and Electrical Systems

| Tasks | | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Ensure that all airside lighting, marking, and signs are in accordance with the licensing standard and in good. | | | | |
| 2 | Ensure that approach and aerodrome lights are installed and maintained in accordance with the licensing standard. | | | | |
| 3 | Ensure that visual approach slope indicator systems (i.e. PAPI) are regularly calibrated and maintained in accordance with the manufacturers and national licensing. | | | | |
| 4 | Ensure that indicators and signaling devices are installed and maintained in accordance with the licensing standard. | | | | |
| 5 | Ensure that electrical power supply systems for air navigation and communication facilities are provided and approved where appropriate, and facilities are operating, tested and maintained to the design and licensing. | | | | |
| 6 | Ensure that there is an effective mechanism to monitor the status, operation and effectiveness of the SMGCS. | | | | |

## 2.14 Low Visibility and Night Operations

| | Tasks | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Ensure that Aerodrome / Aeronautical Ground Lighting (AGL) and other essential equipment for night operations and Low Visibility Procedures (LVPs) is provided and located in relation to the aerodrome layout and in accordance with regulations. | | | | |
| 2 | Ensure that aerodrome procedures for LVPs are developed in conjunction with Air Traffic Control, Aerodrome Standards Department (AGA) of CAAT and other stakeholders, particularly the users. | | | | |
| 3 | Ensure that LVPs on the aerodrome are monitored to ensure the integrity of procedures. | | | | |
| 4 | Promulgate instructions and guidance relating to aerodrome procedures for LVPs. | | | | |
| 5 | Plan and instigate the training of internal and external staff involved in LVPs. | | | | |

## 2.15 Fire and Rescue Operations

| Tasks | | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Ensure emergency fire and rescue facilities are compatible with sizes, types, and frequency of aircraft in accordance with company and regulatory requirements. | | | | |
| 2 | Ensure that rescue and firefighting polices, procedures, and training fulfil the aims of the aerodrome and meet regulatory requirements. | | | | |
| 3 | Review policy and procedures as appropriate taking into account legislative changes, accident / incident data and changes to aerodrome layout, buildings, and facilities. | | | | |
| 4 | Plan and implement the co-ordination between internal staff and external personnel involved in firefighting and emergency operations. | | | | |
| 5 | Assess the feasibility of continuing aerodrome operations in an emergency situation. | | | | |
| 6 | Establish an aerodrome process for the reporting and follow-up of accidents, incidents, and emergencies on the aerodrome. | | | | |

## 2.16 Aviation Fuel Safety

| | Tasks | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Ensure that there is a system to verify that fueling areas and zones are maintained so as to reduce hazards to aircraft, staff, and vehicles. | | | | |
| 2 | Monitor operations involving the receipt and storage of fuel, and the fueling of aircraft, to ensure that they take place according to regulations and procedures. | | | | |
| 3 | Maintain records of all fuel operations, including receipt and use of fuel and quality tests. | | | | |
| 4 | Ensure that an adequate system exists for the sampling, testing, and recording of fuel quality. | | | | |
| 5 | Ensure that an adequate system exists for the inspection of facilities used to transport, store, and dispense fuel to ensure it is maintained to appropriate standards. | | | | |
| 6 | Ensure that appropriate account is taken of fire hazard during all fuel related operations. | | | | |
| 7 | Ensure that training and development of internal and external staff is given in the use of aircraft fueling, fuel storage, and quality control. | | | | |

## 2.17 Aviation Emergency Procedures

| | Tasks | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Ensure emergency systems, procedures, and practices meet organizational safety management and regulatory requirements including those covering an airborne emergency that involves the aerodrome. | | | | |
| 2 | Promulgate systems, procedures, and practices to all personnel as necessary. | | | | |
| 3 | Plan and undertake emergency and contingency planning exercises periodically in accordance with regulatory and organizational safety management and regulatory requirements. | | | | |
| 4 | Ensure that personnel are trained and exercised in the execution of the emergency plan according to their intended role and level of responsibility. | | | | |

## 2.18 Environmental Issues and Noise Monitoring

| Tasks | | Background Knowledge | | Specified Post | Named Person |
|---|---|---|---|---|---|
| | | Training / Education | Experience | | |
| 1 | Keep up-to-date with environmental and noise issues which affect aerodrome and terminal developments. | | | | |
| 2 | Obtain and collate information on environmental and noise issues affecting aerodrome and terminal development, and if appropriate make the information available to relevant parties. | | | | |
| 3 | Ensure that plans for aerodrome and terminal development take into account environmental and noise issues without jeopardizing safety. | | | | |
| 4 | Liaise with the local community and local authority on environmental and noise issues. | | | | |
| 5 | Monitor and review noise and environmental policy, practice, and organization. | | | | |