CIVIL AVIATION DIRECTIVE – 19

SAFETY MANAGEMENT

CIVIL AVIATION AUTHORITY OF MALAYSIA

ISSUE 02
REVISION 00 – 17TH DECEMBER 2021

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Introduction

In exercise of the powers conferred by section 24O of the Civil Aviation Act 1969 [Act 3], the Chief Executive Officer makes this Civil Aviation Directive 19 – Civil Aviation Safety Management (CAD 19 SM), pursuant to Regulation 167 of the Civil Aviation Regulations 2016, and Regulation 15 of the Civil Aviation (Aerodrome Operations) Regulations 2016.

The standards and requirements in this Directive are based mainly on standards and recommended practices (SARPs) stipulated in International Civil Aviation Organisation (ICAO) Annex 19 to the Chicago Convention — Safety Management.

This Directive is published by the Chief Executive Officer under section 24O of the Civil Aviation Act 1969 [Act 3] and comes into effect on 17 December 2021.

Non-compliance with this CAD

Any person who contravenes any provision in this CAD commits an offence and shall on conviction be liable to the punishments under Section 24O (2) of the Civil Aviation Act 1969 [Act 3] and/or under Malaysia Civil Aviation Regulations 2016.

(Captain Chester Voo Chee Soon)
Chief Executive Officer
Civil Aviation Authority of Malaysia

Civil Aviation Directive components and Editorial practices

This Civil Aviation Directive is made up of the following components and are defined as follows:

Standards: Usually preceded by words such as *"shall"* or *"must"*, are any specification for physical characteristics, configuration, performance, personnel or procedure, where uniform application is necessary for the safety or regularity of air navigation and to which Operators must conform. In the event of impossibility of compliance, notification to the CAAM is compulsory.

Recommended Practices: Usually preceded by the words such as "*should"* or "*may*", are any specification for physical characteristics, configuration, performance, personnel or procedure, where the uniform application is desirable in the interest of safety, regularity or efficiency of air navigation, and to which Operators will endeavour to conform.

Appendices: Material grouped separately for convenience but forms part of the Standards and Recommended Practices stipulated by the CAAM.

Definitions: Terms used in the Standards and Recommended Practices which are not self-explanatory in that they do not have accepted dictionary meanings. A definition does not have an independent status but is an essential part of each Standard and Recommended Practice in which the term is used, since a change in the meaning of the term would affect the specification.

Tables and Figures: These add to or illustrate a Standard or Recommended Practice and which are referred to therein, form part of the associated Standard or Recommended Practice and have the same status.

Notes: Included in the text, where appropriate, Notes give factual information or references bearing on the Standards or Recommended Practices in question but not constituting part of the Standards or Recommended Practices;

Attachments: Material supplementary to the Standards and Recommended Practices or included as a guide to their application.

It is to be noted that some Standards in this Civil Aviation Directive incorporates, by reference, other specifications having the status of Recommended Practices. In such cases, the text of the Recommended Practice becomes part of the Standard.

The units of measurement used in this CAD are in accordance with the International System of Units (SI) as specified in CAD 5. Where CAD 5 permits the use of non-SI alternative units, these are shown in parentheses following the basic units. Where two sets of units are quoted it must not be assumed that the pairs of values are equal and interchangeable. It may, however, be inferred that an equivalent level of safety is achieved when either set of units is used exclusively.

Any reference to a portion of this document, which is identified by a number and/or title, includes all subdivisions of that portion.

Throughout this Civil Aviation Directive, the use of the male gender should be understood to include male and female persons.

Record of Revisions

Revisions to this CAD shall be made by authorised personnel only. After inserting the revision, enter the required data in the revision sheet below. The *'Initials'* has to be signed off by the personnel responsible for the change.

Rev No.	Revision Date	Revision Details	Initials

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Summary of Changes

ISS/REV no.	Item no.	Revision Details
ISS02/REV00	Chapter 2	SMS framework content reindexed to Chapter 3.
	Chapter 3	Revised chapter
	Chapter 4	Removed. Contents are reindexed to Chapter 3 and CAGM 1902.
	Chapter 5	Removed. Contents are reindexed to Chapter 3 and CAGM 1902.
	Chapter 6	Removed. Contents are reindexed to Chapter 3 and CAGM 1902.
	Chapter 7	Removed. Contents are reindexed to Chapter 3 and CAGM 1902.
	Chapter 8	Removed. Contents are reindexed to Chapter 3 and CAGM 1902.
	Chapter 9	Removed. Contents are reindexed to CAGM 1902.

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1 General

1.1 Citation

1.1.1 These directives are the Civil Aviation Directive 19 – Safety Management (CAD 19 – SM), Issue 02/Revision 00, and comes into operation on 17 December 2021.

1.1.2 This CAD 19 – SM, Issue 02/Revision 00 will remain current until withdrawn or superseded.

1.2 Applicability

1.2.1 This CAD applies to all service provider as defined in Regulation 167 of Civil Aviation Regulations 2016 and Regulation 15 of Civil Aviation (Aerodrome Operations) Regulations 2016.

Note 1. – Safety management provisions for CAAM are contained in the Malaysian SSP document.

Note 2. – No provision of this CAD is intended to transfer to the State the responsibilities of the aviation service provider or operator. This includes functions related to, or in direct support of, the safe operation of aircraft.

Note 3. – In the context of this CAD, "responsibility" (singular) refers to "State responsibility" with respect to international obligations under the Convention on International Civil Aviation, while "responsibilities" (plural) should be given its ordinary meaning (i.e., when referring to functions and activities that may be delegated).

Note 4. – Safety management provisions pertaining to specific types of aviation activities are addressed in the relevant Annexes.

Note 5. – Basic safety management principles applicable to the medical assessment process of licence holders are contained in Annex 1.

1.3 Revocation

1.3.1 This CAD revokes CAD 19 – Safety Management Issue 01 Revision 00, dated 1 April 2021.

1.3.2 This CAD also revokes AN 2101 – Safety Management System Issue 1, dated 1 November 2019.

1.4 Abbreviations

AAIB	Air Accident Investigation Bureau
ADREP	Accident/incident data reporting
ADRS	Aircraft Data Recording Systems
AMO	Approved Maintenance Organisation
AOC	Air Operator Certificate
ATO	Approved Training Organisation
ATS	Air Traffic Services

ATSP	Air Traffic Service Provider
CAAM	Civil Aviation Authority of Malaysia
CAD	Civil Aviation Directive
CAGM	Civil Aviation Guidance Material
CAMO	Continuing Airworthiness Management Organisation
DO	Design Organisation
FDA	Flight data analysis
FDAP	Flight data analysis programme
FDR	Flight data recorder
FOQA	Flight operational quality assurance
MTO	Maintenance Training Organisation
PO	Production Organisation
QAR	Quick Access Recorder
SARPS	Standards and Recommended Practices
SDCPS	Safety data collection and processing systems
SMM	Safety management manual
SMS	Safety management system
SPI	Safety performance indicator
SPT	Safety performance target
SSO	State safety oversight
SSP	State safety programme
TAC	Technical Approval Certificate

1.5 Definitions

1.5.1 When the following terms are used in the Standards for Safety Management, they have the following meanings:

Accident means an occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

a) a person is fatally or seriously injured as a result of:

1) being in the aircraft, or

2) direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or

3) direct exposure to jet blast,

except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or

b) the aircraft sustains damage or structural failure which:

1) adversely affects the structural strength, performance or flight characteristics of the aircraft, and

2) would normally require major repair or replacement of the affected component, except for engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome);

c) or the aircraft is missing or is completely inaccessible.

Note 1. – For statistical uniformity only, an injury resulting in death within thirty days of the date of the accident is classified, by ICAO, as a fatal injury.

Note 2. – An aircraft is considered to be missing when the official search has been terminated and the wreckage has not been located.

Note 3. – The type of unmanned aircraft system to be investigated is addressed in 5.1 of ICAO Annex 13.

Note 4. – Guidance for the determination of aircraft damage can be found in Attachment E of ICAO Annex 13.

Aeroplane means defined as power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight.

Aircraft means any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

Air Accident Investigation Bureau (AAIB) means a body established by Ministry of Transport, Malaysia to conduct air accident investigations.

Hazard means defined as a condition or an object with the potential to cause or contribute to an aircraft incident or accident.

Helicopter means defined as a heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes.

Note. – Some States use the term "rotorcraft" as an alternative to "helicopter".

Incident means an occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.

Note. – The types of incidents which are of interest for safety-related studies include the incidents listed in CAD 13, Attachment C.

Industry codes of practice are Guidance material developed by an industry body, for a particular sector of the aviation industry to comply with the requirements of the International Civil Aviation Organisation's Standards and Recommended Practices, other aviation safety requirements and the best practices deemed appropriate.

Note. – Some States accept and reference industry codes of practice in the development of regulations to meet the requirements of ICAO Annex 19, and make available, for the industry codes of practice, their sources and how they may be obtained.

Operational personnel mean personnel involved in aviation activities who are in a position to report safety information.

Note. – Such personnel include, but are not limited to: flight crews; air traffic controllers; aeronautical station operators; maintenance technicians; personnel of aircraft design and manufacturing organisations; cabin crews; flight dispatchers, apron personnel and ground handling personnel

Safety means defined as the state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level.

Safety data are a defined set of facts or set of safety values collected from various aviation-related sources, which is used to maintain or improve safety.

Note. – Such safety data is collected from proactive or reactive safety-related activities, including but not limited to:

a) accident or incident investigations;

b) safety reporting;

c) continuing airworthiness reporting;

d) operational performance monitoring;

e) inspections, audits, surveys; or

f) safety studies and reviews.

Safety information means defined as Safety data processed, organised or analysed in a given context so as to make it useful for safety management purposes.

Safety management system (SMS) means a systematic approach to managing safety, including the necessary organisational structures, accountability, responsibilities, policies and procedures.

Safety oversight means a function performed by a State to ensure that individuals and organisations performing an aviation activity comply with safety-related national laws and regulations.

Safety performance means a state or a service provider's safety achievement as defined by its safety performance targets and safety performance indicators.

Safety performance indicator (SPI) means a data-based parameter used for monitoring and assessing safety performance.

Safety performance target (SPT) means defined as the State or service provider's planned or intended target for a safety performance indicator over a given period that aligns with the safety objectives.

Safety risk means the predicted probability and severity of the consequences or outcomes of a hazard.

Serious injury means an injury which is sustained by a person in an accident and which:

a) requires hospitalisation for more than 48 hours, commencing within seven days from the date the injury was received; or

b) results in a fracture of any bone (except simple fractures of fingers, toes or nose); or

c) involves lacerations which cause severe haemorrhage, nerve, muscle or tendon damage; or

d) involves injury to any internal organ; or

e) involves second- or third-degree burns, or any burns affecting more than 5 per cent of the body surface; or

f) involves verified exposure to infectious substances or injurious radiation.

State safety programme (SSP) are an integrated set of regulations and activities aimed at improving safety.

Surveillance defines the State activities through which the State proactively verifies through inspections and audits that aviation licence, certificate, authorisation or approval holders continue to meet the established requirements and function at the level of competency and safety required by the State.

2 Safety Management System (SMS)

Note 1. — Guidance on implementation of an SMS is contained in the CAGM 1902 Safety Management Systems.

Note 2. — An organization may elect to extend one SMS across multiple service provider activities.

2.1 General

2.1.1 The SMS of a service provider shall:

a) be established in accordance with the framework elements contained in Chapter 3; and

b) be commensurate with the size of the service provider and the complexity of its aviation products or services.

2.1.2 The service provider shall develop a plan to facilitate SMS implementation.

2.1.3 The SMS of an approved training organization, in accordance with CAD 1, that is exposed to safety risks related to aircraft operations during the provision of its services shall be made acceptable to the CAAM.

2.1.4 The SMS of a certified operator of aeroplanes or helicopters authorized to conduct international commercial air transport, in accordance with CAD 6, Part I or Part III, Section II, respectively, shall be made acceptable to the CAAM.

2.1.5 The SMS of an approved maintenance organization providing services to operators of aeroplanes or helicopters engaged in international commercial air transport, in accordance with CAD 6, Part I or Part III, Section II, respectively, shall be made acceptable to the CAAM.

2.1.6 The SMS of an organization responsible for the type design of aircraft, engines or propellers, in accordance with CAD 8, shall be made acceptable to the CAAM.

2.1.7 The SMS of an organization responsible for the manufacture of aircraft, engines or propellers, in accordance with CAD 8, shall be made acceptable to the CAAM.

2.1.8 The SMS of an ATS provider, in accordance with CAD 11, shall be made acceptable to the Secretary General of the Ministry of Transport.

2.1.9 The SMS of an operator of a certified aerodrome, in accordance with CAD 14, Volume I, shall be made acceptable to the CAAM.

2.2 International general aviation — aeroplanes

Note. — Guidance on the implementation of an SMS for international general aviation is contained in the CAGM 1902 Safety Management Systems.

2.2.1 The SMS of an international general aviation operator, conducting operations of large or turbojet aeroplanes in accordance with CAD 6 Part II, Section 3, shall be commensurate with the size and complexity of the operation and meet the criteria established by the CAAM.

2.2.2 The following are also required to implement SMS for their operations:

a) Any operator of an aeroplane registered in Malaysia with a maximum certificated take-off mass exceeding 5,700 kilograms or equipped with one or more turbojet engines used in any international general aviation operations; and

b) An approved maintenance organisation providing services for the operator of an aeroplane registered in Malaysia with a maximum certificated take-off mass exceeding 5,700 kilogrammes or equipped with one or more turbojet engines used in any international general aviation operations.

3 Framework for A Safety Management System (SMS)

Note 1. — Guidance on the implementation of the framework for an SMS is contained in the CAGM 1902 Safety Management Systems.

Note 2. — The service provider's interfaces with other organizations can make a significant contribution to the safety of its products or services. Guidance on interface management as it relates to SMS is provided in the CAGM 1902 Safety Management Systems.

Note 3. — In the context of this appendix as it relates to service providers, an "accountability" refers to an "obligation" that may not be delegated, and "responsibilities" refers to functions and activities that may be delegated.

3.1 SMS Framework

3.1.1 This chapter specifies the framework for the implementation and maintenance of an SMS. The framework comprises four components and twelve elements as the minimum requirements for SMS implementation:

COMPONENT	ELEMENT
1. Safety policy and objectives	1.1. Management commitment
	1.2. Safety accountability and responsibilities
	1.3. Appointment of key safety personnel
	1.4. Coordination of emergency response planning
	1.5. SMS documentation
2. Safety risk management	2.1. Hazard identification
	2.2. Safety risk assessment and mitigation
3. Safety assurance	3.1. Safety performance monitoring and measurement
	3.2. The management of change
	3.3. Continuous improvement of the SMS
4. Safety promotion	4.1. Training and education
	4.2. Safety communication

3.2 Safety policy and objectives

3.2.1 Management commitment

3.2.1.1 The service provider shall define its safety policy. The safety policy shall:

a) reflect organizational commitment regarding safety, including the promotion of a positive safety culture;

b) include a clear statement about the provision of the necessary resources for the implementation of the safety policy;

c) include safety reporting procedures;

d) clearly indicate which types of behaviours are unacceptable related to the service provider's aviation activities and include the circumstances under which disciplinary action would not apply;

e) be signed by the accountable executive of the organization;

f) be communicated, with visible endorsement, throughout the organization; and

g) be periodically reviewed to ensure it remains relevant and appropriate to the service provider.

3.2.1.2 Taking due account of its safety policy, the service provider shall define safety objectives. The safety objectives shall:

a) form the basis for safety performance monitoring and measurement as required in paragraph 3.4.1.2;

b) reflect the service provider's commitment to maintain or continuously improve the overall effectiveness of the SMS;

c) be communicated throughout the organization; and

d) be periodically reviewed to ensure they remain relevant and appropriate to the service provider.

3.2.2 Safety accountability and responsibilities

3.2.2.1 The service provider shall:

a) identify the accountable executive who, irrespective of other functions, is accountable on behalf of the organization for the implementation and maintenance of an effective SMS;

b) clearly define lines of safety accountability throughout the organization, including a direct accountability for safety on the part of senior management;

c) identify the responsibilities of all members of management, irrespective of other functions, as well as of employees, with respect to the safety performance of the organization;

d) document and communicate safety accountability, responsibilities and authorities throughout the organization; and

e) define the levels of management with authority to make decisions regarding safety risk tolerability.

3.2.3 Appointment of key safety personnel

3.2.3.1 The service provider shall appoint a safety manager who is responsible for the implementation and maintenance of the SMS.

Note. — Depending on the size of the service provider and the complexity of its aviation products or services, the responsibilities for the implementation and maintenance of the SMS may be assigned to one or more persons, fulfilling the role of safety manager, as their sole function or combined with other duties, provided these do not result in any conflicts of interest.

3.2.4 Coordination of emergency response planning

3.2.4.1 The service provider required to establish and maintain an emergency response plan for accidents and incidents in aircraft operations and other aviation emergencies shall ensure that the emergency response plan is properly coordinated with the emergency response plans of those organizations it must interface with during the provision of its products and services.

3.2.5 SMS documentation

3.2.5.1 The service provider shall develop and maintain an SMS manual that describes its:

a) safety policy and objectives;

b) SMS requirements;

c) SMS processes and procedures; and

d) accountability, responsibilities and authorities for SMS processes and procedures.

3.2.5.2 The service provider shall develop and maintain SMS operational records as part of its SMS documentation.

Note. — Depending on the size of the service provider and the complexity of its aviation products or services, the SMS manual and SMS operational records may be in the form of stand-alone documents or may be integrated with other organizational documents (or documentation) maintained by the service provider.

3.3 Safety risk management

3.3.1 Hazard identification

3.3.1.1 The service provider shall develop and maintain a process to identify hazards associated with its aviation products or services.

3.3.1.2 Hazard identification shall be based on a combination of reactive and proactive methods.

3.3.2 Safety risk assessment and mitigation

3.3.2.1 The service provider shall develop and maintain a process that ensures analysis, assessment and control of the safety risks associated with identified hazards.

Note. — The process may include predictive methods of safety data analysis.

3.4 Safety assurance

3.4.1 Safety performance monitoring and measurement

3.4.1.1 The service provider shall develop and maintain the means to verify the safety performance of the organization and to validate the effectiveness of safety risk controls.

Note. — An internal audit process is one means to monitor compliance with safety regulations, the foundation upon which SMS is built, and assess the effectiveness of these safety risk controls and the SMS.

3.4.1.2 The service provider's safety performance shall be verified in reference to the safety performance indicators and safety performance targets of the SMS in support of the organization's safety objectives.

3.4.1.3 The service provider safety performance shall be verified in reference to the safety performance indicators (SPI) and safety performance targets (SPT) of the SMS in support of their safety objectives.

3.4.1.4 The service provider shall provide CAAM the actual SPI, safety performance target and alert level every month

3.4.2 The management of change

3.4.2.1 The service provider shall develop and maintain a process to identify changes which may affect the level of safety risk associated with its aviation products or services and to identify and manage the safety risks that may arise from those changes.

3.4.3 Continuous improvement of the SMS

3.4.3.1 The service provider shall monitor and assess its SMS processes to maintain or continuously improve the overall effectiveness of the SMS.

3.5 Safety promotion

3.5.1 Training and education

3.5.1.1 The service provider shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform their SMS duties.

3.5.1.2 The scope of the safety training programme shall be appropriate to each individual's involvement in the SMS.

3.5.2 Safety communication

3.5.2.1 The service provider shall develop and maintain a formal means for safety communication that:

a) ensures personnel are aware of the SMS to a degree commensurate with their positions;

b) conveys safety-critical information;

c) explains why particular actions are taken to improve safety; and

d) explains why safety procedures are introduced or changed.