Guidance Material on Reporting of Civil Aviation Occurrences

CAAT-SMD–OCC

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Abbreviations

AAIC	Aircraft Accident Investigation Committee
ADREP	The Accident/Incident Data Reporting
ASAG	Aviation Safety Action Group
CAAT	The Civil Aviation Authority of Thailand
CAO	Civil Aviation Organization
COR	Critical Occurrence Response
ECCAIRS	European Co-ordination Centre for Aviation Incident Reporting System
HIRA	Hazard Identification and Risk Assessment
ICAO	International Civil Aviation Organization
JRC	Joint Research Centre
MOR	Mandatory Occurrence Report
MoU	Memorandum of Understanding
SDCPS	Safety Data Collection and Processing Systems
SMS	Safety Management System
SSP	State Safety Programme
TASP	Thailand Aviation Safety Plan
UTC	Universal Time Coordinated/Coordinated Universal Time
VOR	Voluntary Occurrence Report

Chapter 1: Introduction

1.1 About this guidance material

The purpose of this document is to provide guidance on the implementation of the CAAT Requirement No.22 on Reporting of Civil Aviation Occurrences[1] (the Requirement No.22). It includes the rationales, obligation, possible means of compliance, and examples of best practices in order to ensure the effective implementation of the Requirement across the Thai aviation industry.

The document is divided into 8 chapters as follows:
- Chapter 1: Introduction;
- Chapter 2: Obligations of the civil aviation organization;
- Chapter 3: Obligations of the operator;
- Chapter 4: Individual and other organization reporting;
- Chapter 5: Requirement on the occurrence report submission;
- Chapter 6: Occurrence reporting using ECCAIRS compatible software;
- Chapter 7: Occurrence reporting using CAAT's PDF forms; and
- Chapter 8: Guideline on mandatory occurrence list.

In addition, for the effective implementation and continuous improvement of safety, this guidance material has a complementary section on the CAAT website[2], which provides more information regarding safety management from both international and domestic best practices (i.e. more examples from good practices, tools, supporting educational materials, etc.)

Note that this guidance material is a living document and will be revised as a result of post implementation feedback and any amendments of the Requirement No.22.

1.2 Why is the Requirement No.22 needed?

Managing safety needs the identification of hazards to manage the potential safety risks to an acceptable level. This cannot be done without a systematic safety data collection and analysis system as a foundation of a Safety Management System (SMS). In this regard, ICAO Annex 19: Safety Management, 2nd edition requires States to establish a mean to capture, store, aggregate and enable the analysis of safety data and safety information. This will enable the CAAT to develop a true risk picture of the Thai aviation system.

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[1] ข้อกำหนดของสำนักงานการบินพลเรือนแห่งประเทศไทย ฉบับที่ 22 ว่าด้วยการรายงานเหตุการณ์ด้านความปลอดภัยในการบินพลเรือน

[2] www.caat.or.th/occurrence

CAAT adopted and transposed this ICAO standard into the Requirement No.22 as a foundation of the standardized safety reporting framework in the Thai civil aviation system as a part of the State Safety Programme (SSP).

1.3 When does the Requirement No.22 become effective?

The Requirement No.22 was signed by the General Director of CAAT on 6 November 2019, and becomes effective on 1 April 2020 .

1.4 What should we do with existing requirements related to occurrence reporting?

Article 3 of the Requirement No.22 indicates that any by-law documents including Requirement, Announcement, Rule, and Order that have been effective prior to the Requirement No.22, which are either duplicating or contradicting with the provisions in the Requirement No.22, are to be replaced by provisions of the Requirement No.22 which contains at least, but not limited to, the list (as of 1 April 2020) provided below:

- ประกาศกรมการขนส่งทางอากาศ เรื่อง ระบบการรายงานข้อบกพร่องในขณะปฏิบัติการ (Announcement of Department of Civil Aviation on Service Difficulty Reporting System)
- ประกาศกรมการขนส่งทางอากาศ เรื่องการรับรองหน่วยซ่อม ข้อ ๓๓ (No. 33 of Announcement of Department of Civil Aviation on Repair Station Certification)
- ข้อบังคับของคณะกรรมการการบินพลเรือน ฉบับที่ ๗๙ ว่าด้วยการสอบสวนอุบัติการณ์จราจรทางอากาศ ข้อ ๕ (No. 5 of Regulations of Civil Aviation Board No. 79 on Air Traffic Incident Investigation)
- ประกาศสำนักงานการบินพลเรือนแห่งประเทศไทย เรื่อง ข้อกำหนดการรับรองผู้ดำเนินการเดินอากาศ (Air Operator Certificate Requirements) (ฉบับที่ ๗) พ.ศ. ๒๕๖๒ Chapter 2 No. 17.1 – 17.3, Chapter 8 No. 8.3 and Appendix Q (Chapter 2 No. 17.1 – 17.3, Chapter 8 No. 8.3 and Appendix Q of the Announcement of the Civil Aviation Authority of Thailand on Air Operator Certificate Requirements (No.7) B.E. 2562)
- ประกาศสำนักงานการบินพลเรือนแห่งประเทศไทย เรื่อง การปฏิบัติการของอากาศยานที่ใช้ทำการบินทั่วไป พ.ศ. ๒๕๖๒ ข้อ GA-P1A.1005 และ GA-P3H.703 (703.1) (GA-P1A.1005 and GA-P3H.703 (703.1) of the Announcement of the Civil Aviation Authority of Thailand on General Aviation Requirements)
- ข้อบังคับของสำนักงานการบินพลเรือนแห่งประเทศไทย ฉบับที่ ๔ ว่าด้วยการขนส่งวัตถุอันตรายทางอากาศ หมวด ๑ ข้อ ๑๓ และ หมวด ๓ ข้อ ๑๗ (Section 1 No. 13 and Section 3 No. 17 of Requirement of the Civil Aviation Authority of Thailand No. 4 on Transportation of Dangerous Goods by Air)

– ข้อกำหนดของสำนักงานการบินพลเรือนแห่งประเทศไทย ฉบับที่ ๑๔ ว่าด้วยมาตรฐาน
สนามบิน หมวด ๑ ส่วนที่ ๒ ข้อ ๑๘
(Section 1 Part 2 No. 18 of Requirement of the Civil Aviation Authority of
Thailand No. 14 on Aerodrome Standards).

1.5 How would the Requirement No.22 enhance aviation safety?

As mentioned in Section 1.2, the Requirement No.22 establishes the safety reporting
framework to ensure that the safety occurrences in the Thailand's aviation industry are
collected and analyzed to support the full spectrum of safety management activities across
the aviation industry.

For the aviation industry, the Requirement aims to ensure that the industry is aware of
outstanding and potential risks so that the proper mitigation measures are put in place in a
collaborative approach.

On the other hand, CAAT as a regulator has the national commitment to improve aviation
safety to the best extent possible. The Requirement allows CAAT to be better informed of
the outstanding and potential risks in the industry. This will enable CAAT to take action to
improve aviation safety from a national perspective.

1.6 Scope related to the Requirement No.22

1.6.1　The term "Occurrences"

In the Requirement No.22, an occurrence refers to any event that occurs within Thai territory
or an occurrence involving a Thai Air Operator outside the territory. By this definition,
information of all risks related to Thai aviation system should be captured. The occurrence
also refers to a safety event that had already occurred and any observed aviation hazard
related to, or in direct support of the safe operation of aircraft.

1.6.2　The reporters

The Requirement No.22 puts reporting obligations to different categories of reporters as
specified in the Requirement as follows:

1) "Civil Aviation Organizations" (CAOs) refer to the category of reporter that are Thai or foreign civil aviation organizations required or shall be required to implement SMS by other laws, including:

a) Thai Civil Aviation Organizations:
   i) Air operator
   ii) Public aerodrome operator
   iii) Air traffic management service provider
   iv) Communication, navigation, and surveillance service provider
   v) Approved training organization with aircraft operations
   vi) Approved maintenance organization
   vii) Manufacture of aircraft, engines or propellers organization
   viii) Type design of aircraft, engines or propellers organization
   ix) General Aviation Operator operating with
      (1) An aeroplane with a maximum certified take-off weight exceeding 5,700 kg.; or
      (2) An aeroplane certified for a maximum seating configuration of more than nine seats; or
      (3) An aeroplane equipped with one or more turbojet engine.

b) Foreign Civil Aviation Organizations:
   i) Foreign Air Operator operating in Thai territory.

The guideline for the CAOs is provided in **Chapter 2**.

2) "Operators" refer to the category of reporter that are individuals or organizations not classified as CAOs that perform aviation activities classified as general aviation and aerial work in Thailand .

The guideline for the Operators is provided in **Chapter 3**.

3) "Individual" refers to the category of reporter that are natural persons who should submit a voluntary occurrence report directly to CAAT as per Article 12 of the Requirement No.22 specifically such as passengers, persons witnessing an occurrence or employees of CAOs who wish to report voluntarily on their behalves to CAAT.

4) "Other organizations" refer to the category of reporter that are neither the CAOs nor Operators defined in the Requirement No.22 which would like to submit a voluntary occurrence report to CAAT as per Article 12 of the Requirement No.22 such as ground handing organizations.

The guideline for the individual reporters and other organizations is provided in **Chapter 4.**

1.6.3 Mandatory and voluntary occurrence reporting

The Requirement No.22 differentiates between occurrences that:

- – are required to be reported under the Mandatory Occurrence Reporting (MOR) scheme, and
- – may be reported if judged relevant by potential reporters under the Voluntary Occurrence Reporting (VOR) scheme.

However, "reporting of any safety relevant occurrence" is encouraged throughout the industry. The difference between MOR and VOR is that the MOR should capture the highly visible events compromising safety, while, the VOR is a mean to proactively identify potential safety hazards in aviation operations.

1.7 Will "Just Culture" be applied to MOR and VOR schemes?

Yes, as the effectiveness of occurrence reporting and the use of occurrence information for the improvement of safety depends on the level of trust between the reporter and the entity in charge of the collection and assessment of the information .

The Thailand State Safety Policy states our commitment to apply "Just Culture" to all occurrence reporters. This will ensure the continuing availability of safety data and safety information feeding into the Thailand SSP so that appropriate and timely corrective and preventive action can be taken and aviation safety improved.

Thailand's commitment to foster "Just Culture" will also be transposed into subsequent outputs which are CAAT enforcement policy and Safety Data and Safety Information Protection Requirement that is mandated at State and industry levels by ICAO Annex 19.

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Chapter 2: Civil Aviation Organization's Obligations

Article 15 of the Requirement No.22 requires each Civil Aviation Organization (CAO) to establish a system (or systems) to facilitate the collection of both mandatory and voluntary reportable occurrences. The MOR and VOR systems, as well as the analysis established by the Requirement, are an embedded part of the existing safety management processes of an organization's SMS. This chapter aims to provide better understanding of the Requirement No.22 on the CAO's obligations and provide guidelines to help CAOs to comply with the Requirement.

2.1 What are the occurrence reporting obligation and process for CAOs?
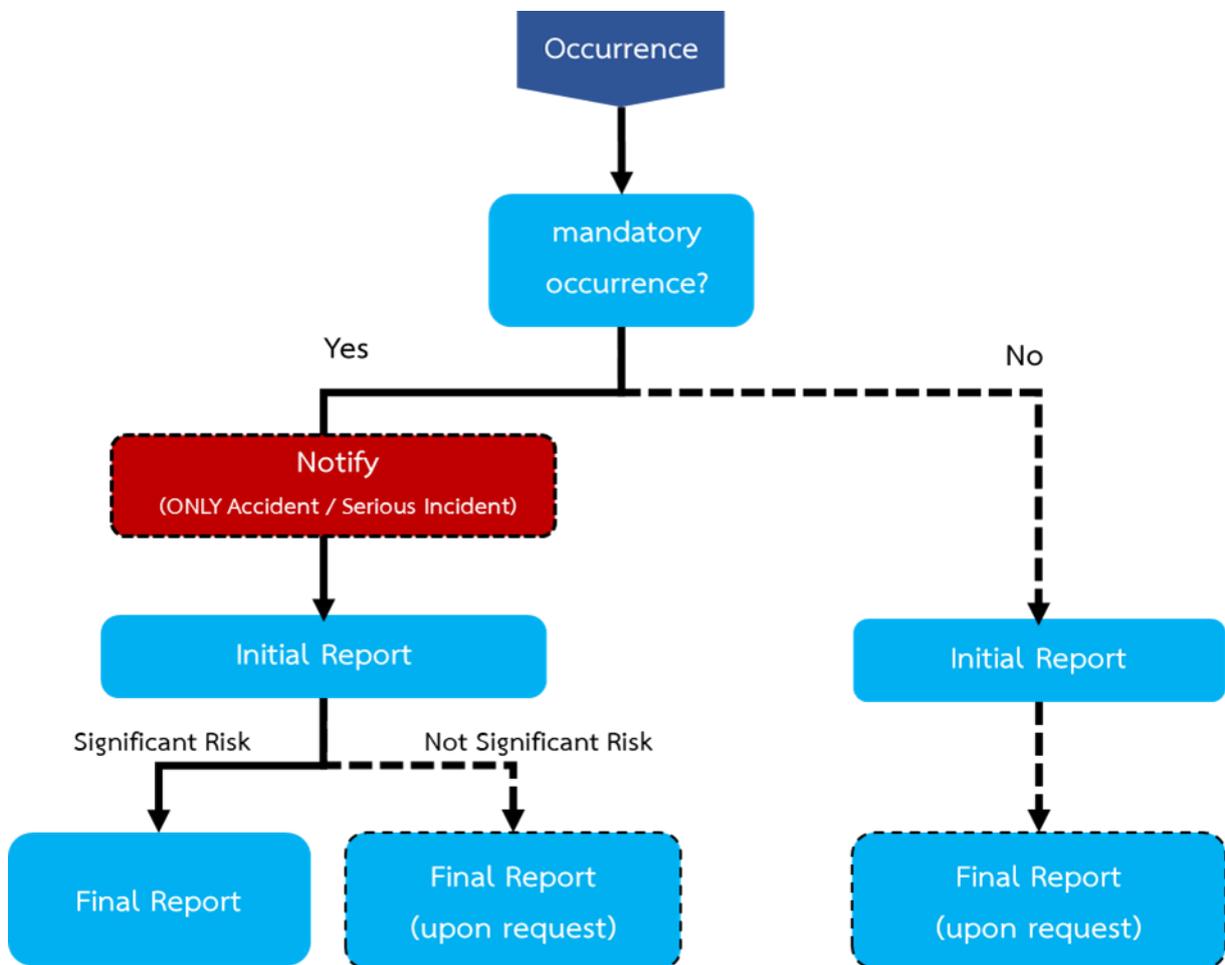
Figure 2-1: CAO's occurrence reporting obligations and process

Figure 2.1 summarizes the occurrence reporting obligations and process of the CAOs. It starts from when the CAOs become aware of an occurrence .Then, the CAO shall verify the occurrence against the Requirement No.22 and take appropriate response accordingly.

If the occurrence falls under the MOR scheme, the CAO shall take actions as per Article 5 to Article 9 of the Requirement No.22. If it is not considered mandatory, CAOs should also comply with the VOR scheme. In this regard, the CAO shall take actions as per Article 10 and 11 of the Requirement No.22 accordingly. Detailed explanation related to CAO's MOR and VOR reporting obligations are provided in Section 2.7 and 2.15, respectively.

2.2 What does it mean by "becoming aware of an occurrence"?

The Requirement No.22 prescribes the timeframes that each CAO needs to notify and submit an initial report of an occurrence under the MOR scheme to CAAT when becoming aware of an occurrence. The notion of "becoming aware of an occurrence" refers to the time when the person responsible for reporting as defined in the CAO's SMS becomes aware by any means that an occurrence has occurred. This includes cases where a CAO learns about an occurrence through its automatic data capturing systems (e.g. Flight Data Monitoring). Further guideline on managing occurrence reporting within CAOs can be found in Section 2.5.

2.3 Who is responsible to submit the report to CAAT and process the report?

The Requirement No.22 prescribes obligations for notification and reporting of occurrences on the CAO as an entity. Therefore, CAOs, as a part of their SMS, shall designate one or more persons depending on size and complexity of CAOs to:

- independently act on behalf of the organization as the focal point to handle occurrences internally; and
- liaise with CAAT in an effective and consistent manner to ensure its compliance with the MOR and VOR related obligations.

2.4 What should CAOs plan initially to implement the reporting systems to comply with the Requirement No.22?

Besides the recommendation to establish the occurrence focal point in Section 2.3, CAOs should further assess whether there are any gaps between the requirements and the existing reporting systems. Any gaps identified should be addressed commensurate with operational complexity of CAOs. This include the collection, evaluation, processing, analysis and storage of occurrences reported within the CAOs' SMS.

The handling of the reports should be done with a view to preventing the use of information for purposes other than safety, and shall be appropriately safeguarded to protect the confidentiality of the identity of the reporter and of any persons mentioned in the report. This will promote an appropriate "Just Culture" and a positive safety culture. To achieve this, CAOs should consider establishing, documenting and communicating a Just Culture policy with supporting procedures, and clearly defined roles and responsibilities. This should include ensuring those people involved in the transfer of occurrence information understand the importance of maintaining and protecting confidentiality.

2.5 How to manage data collection within the organization?

Once an occurrence has occurred and becoming aware by relevant person who has an obligation as per CAO's SMS process to report such an occurrence, a CAO should ensure that the information is transferred to the CAO's occurrence system for further processing within the organization.

Within a CAO, basically, those who should have occurrence reporting obligation mandatorily and voluntarily are all employed personnel, especially the front-line operational personnel who are exposed to the CAO's safety-related activities. However, where the CAO contracts to other organizations not subject to the Requirement No.22, the CAO is responsible for ensuring that the contracted organizations are parts of the CAO's reporting systems. It is also necessary for those contractors to be included in any analysis or investigation of an occurrence.

If an occurrence has been identified through the automatic data capturing, the CAO should request a retrospective report to acquire the relevant information from the personnel involved. If this is the case, it should be done in a positive way as it may be perceived as an act against "Just Culture" environment.

For MOR in particular, there are lists of mandatory reportable occurrences for the different aviation domains in the Requirement No.22. Therefore, CAOs should ensure that relevant personnel are aware and always report those occurrences through their systems. It is suggested that when establishing the reporting systems, the CAO communicates the certain types of occurrences that are relevant to their operational activities. It is worth emphasizing once again that, although there is a clear distinction between MOR and VOR, the "reporting of any safety relevant occurrence" should be encouraged throughout the organizations.

2.6 Should CAOs protect the data and information related to occurrences?

The Requirement No.22 puts obligations on the protection of safety data captured by and safety information derived from MOR and VOR systems and related sources in Article 16 and Article 7. However, the provisions of such protection pertaining to the Requirement is referred to the other CAAT Requirement dedicated to protection of safety data and safety information in which the concept can be briefly explained here.

As a basic principle, information derived from occurrence reports shall only be used for the purpose for which it has been collected. CAOs should not make available or use safety data or safety information collected, stored or analyzed in accordance with the provisions in the Requirement No.22 for the purposes other than maintaining or improving safety. This includes using the information to attribute blame or liability unless it is determined that the principles of exception are applied.

Safety practitioners should keep in mind that safety data and safety information protection is a prerequisite for creating and maintaining successful reporting systems. It helps to build trust between reporters and organizations. In this regard, the handling of occurrence reports and information obtained through occurrence analysis process shall be done to appropriately safeguard the confidentiality of the identity of the reporter and of the persons mentioned in the occurrence to promote a "Just Culture".

In addition, CAOs should put in place and document the mechanism to ensure that they limit access to the information contained in occurrence reporting systems to only relevant personnel authorized to deal with occurrence reports.

2.7 What are the CAO's obligations for mandatory occurrence reporting?

Once a CAO becomes aware of any mandatory occurrence listed in Appendix ก (ภาคผนวก ก) of the Requirement No.22 from its operations or by personnel under the CAO's scope of SMS, it must consider to fulfill its obligations as described in **Table 2-1**.

Figure 2-2 further illustrates the flow of information, main deadlines and stages of the MOR in relation to the obligations listed in **Table 2-1**.

No.	Action to be taken	Required timeframe	Reference
1	Notify the occurrence if it falls under accident or serious incident categories	Notify without delay after becoming aware	Article 5, 17
2	Submit an initial report with required information by the Requirement	− Within 24 hours after becoming aware (accident and serious incident) − Within 72 hours after becoming aware (other occurrences)	Article 5, 17
3	Perform analysis of any single occurrence or together with a group of other occurrences either: − within the organization; and/or − with the involvement of other entities by: 1) requesting information from the relevant entities; or 2) conducting the occurrence analysis with the entities involved with the occurrence in order to accurately identify hazards, assess the risk, and determine the appropriate risk control measures, if any.	-	Article 6, 7
4	Submit the final report to CAAT, only for occurrences with significant safety risks to: − the CAO's own operations; or − the aviation related operations caused by the CAO's operations. However, if it is deemed necessary, CAAT may request any data or final report for other occurrences.	No later than 60 days from date of submission of the initial report(s)	Article 8, 17 Article 14, 17

No.	Action to be taken	Required timeframe	Reference
5	Notify deferment of the final report submission when not being able to submit the report within 60 days after submission of the initial report(s). Submit the final report to CAAT after deferment	Before 60-day deadline in No.4 No later than another 60 days from deadline in No.4	Article 9, 17

Table 2-1: Summary of CAO's obligations for MOR
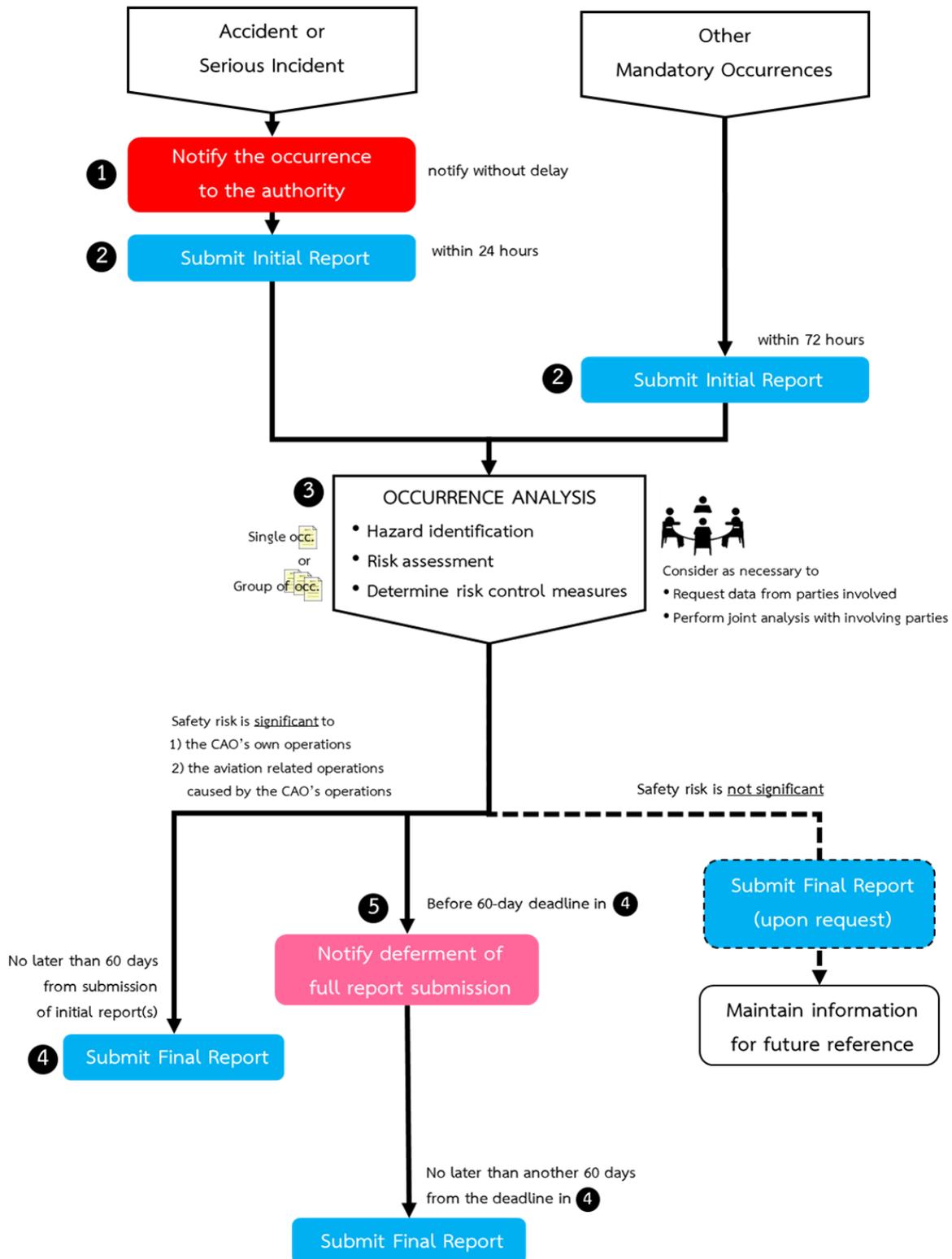
Figure 2-2: Flow of mandatory occurrence notification and reporting for a CAO

2.8 Why does CAAT mandate CAOs to notify accidents and serious incidents?

As a regulator of national civil aviation, it is necessary that CAAT be informed of such occurrences as soon as possible to determine any immediate actions to ensure continued safe operations through the CAAT's Critical Occurrence Response (COR) process.

2.9 Why does CAAT mandate CAOs to notify accidents and serious incidents to use the same channel and format prescribed in Chapter 7 Section 64/10 of Air Navigation Act (No.14), B.E. 2562?

The Requirement No.22 utilizes the same channel and format for accident and serious incident notification to the Aircraft Accident Investigation Committee of Thailand (AAIC) in order to facilitate a single notification by CAOs. Note that CAAT has put in place a mechanism to exchange such information between the two State entities to ensure timely acknowledgement of the occurrence being notified.

2.10 Do all mandatory occurrences need to be analyzed and subject to submission of final report to CAAT?

This is to emphasize once again that as per Article 6 of the Requirement No.22, all mandatory occurrences collected in a CAO's reporting system are subjected to occurrence analysis as a part of SMS to identify hazards, assess risks, and determine appropriate risk control measures (if necessary). However, those occurrences required the final report to be submitted to CAAT, are those, which the analysis of single occurrence or together with a group of other occurrences has led to the identification of an actual or potential risk that is significant to:

- its own operations; and/or
- other aviation related operations within the aviation system caused by that particular CAO's operations.

It should be understood that the analysis of occurrence required under the Requirement No.22 is conducted in the context of CAO's existing SMS required under other rules. This is not intended to create another system alongside the SMS. However, the occurrence analysis related provisions in the Requirement No.22 may create gaps in existing SMS processes of CAOs that need to be addressed systematically in the organization.

2.11 How should CAOs perform occurrence analysis in accordance with the Requirement No.22?

Article 6 of the Requirement No.22 relates to occurrence analysis, which follows the basic risk management process shown in Figure 2-3. It covers a range of core activities of SMS, including hazard identification, risk assessment and risk mitigation.
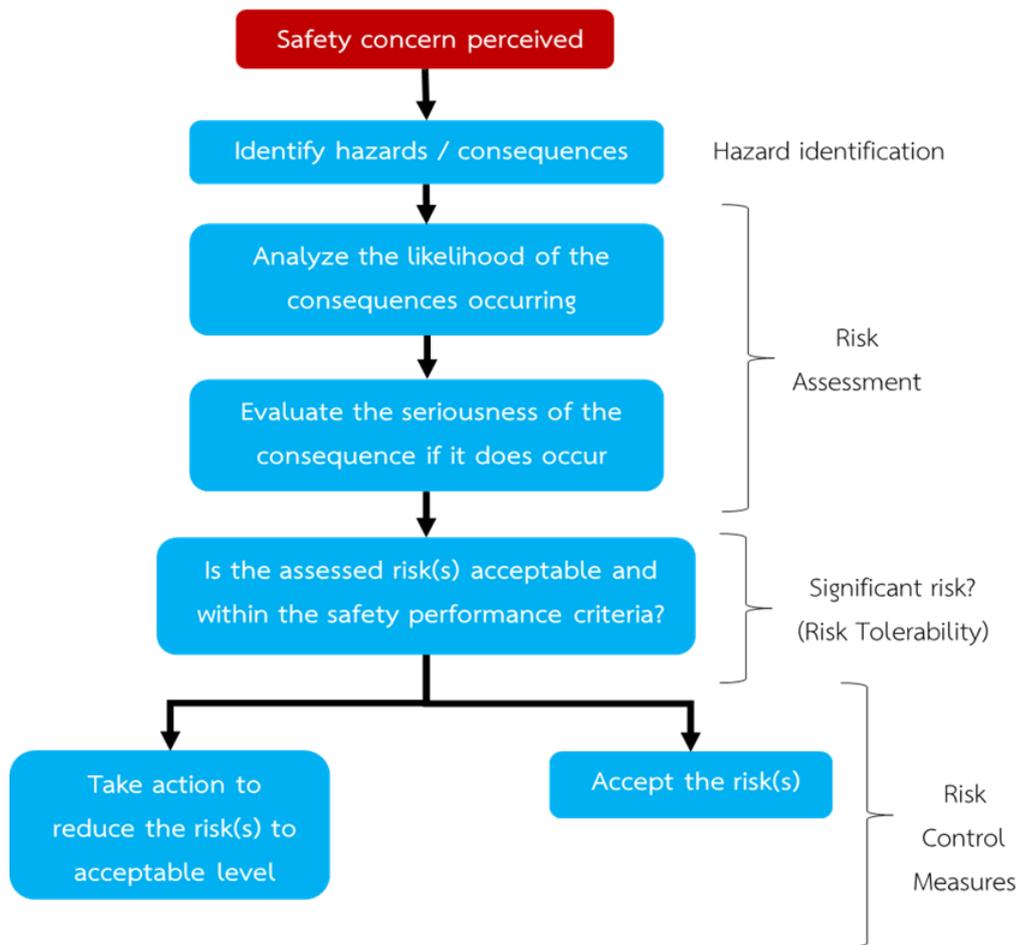
Figure 2-3: Safety risk management process

In principle, when safety concerns associated with operations of a CAO are collected through the reporting systems, each CAO should gather as much as possible relevant factual information about the occurrence or groups of occurrences and analyses the collected information in order to identify safety hazards that are reasonably determined as the real root causes of occurrences.

Then, safety risk associated with the identified hazard should be assessed in terms of its likelihood (probability) of the consequence occurring and seriousness (severity) of actual or the most credible consequence respectively. Once again, it should be understood that a CAO should determine the safety risk in two aspects:

- Risk to CAO's own operations; or
- Risk to aviation related operations within the aviation system caused by the CAO's operations.

Based on the analysis of safety risk performed, each CAO shall further determine whether the risk is acceptable. If it is not acceptable, the risk control measures, including corrective and preventive actions should be identified and implemented in a timely manner.

Aviation is complex and requires continuously interactions between several aviation entities. Therefore, an occurrence could possibly involve multiple entities performing flight operations and/or related supporting aviation activities (e.g. an occurrence related to an aircraft during a turnaround at a specific aerodrome). In this regard, Article 7 of the Requirement No.22 enables CAOs to perform a collaborative approach to occurrence analysis by allowing the CAOs to share occurrence information and perform joint analysis of occurrences with the sole objective of improving overall safety to the best extent possible.

Although the logical flow of the risk management process explained above can be applied to any organization implementing SMS, methodologies to analyze hazard and assess risk should be customized to serve the specific conditions of the CAOs and be subject to continuous improvement within the organizations. CAAT provides resources of good practices on the CAAT website [www.caat.or.th/occurrence] to complement this guidance material.

2.12 What should a CAO do to facilitate exchange of safety data and joint occurrence analysis among involving organizations?

The Requirement No.22 encourages CAOs to adopt a collaborative approach to hazard identification, risk assessment and mitigation. It should be noted that safety risks faced by CAOs are unavoidably affected by internal and external interfaces within the aviation system.

Internal interfaces concerning safety related matters of a CAO are basically managed under the CAO's accountable executive authority. On the other hand, safety management activities concerning the CAO's external interfaces requires much greater effort. As a part of SMS, a CAO is responsible for managing and monitoring both internal and external interfaces to ensure the safe provision of their services and product. Therefore, a CAO should develop formal

agreements, Memorandum of Understanding (MoU), or any other coordination mechanism with its external stakeholders that clearly define responsibilities and conditions under which the organization is obliged to share safety data and safety information and jointly analyze occurrences where the risks are shared by all involving parties.

2.13 Who should perform occurrence analysis within CAOs?

When CAOs establish or seek ways to improve occurrence management and administration processes to satisfy the Requirement No.22, they should ensure that occurrence analysis is done by subject matter experts. Also, personnel involved in the analysis should, where possible, be independent from the operations to avoid conflict of interest. Therefore, CAOs should ensure that SMS organization structure, safety responsibilities, occurrence analysis related procedures to support effective occurrence reporting are clearly defined, communicated, implemented, and monitored.

2.14 Do CAOs need to submit reports and perform occurrence analysis of accident and serious incident cases being under AAIC investigation?

Article 6, 7 and 8 of the Requirement No.22 apply to all occurrences, including accidents and serious incidents. Although the law requires AAIC to conduct official investigation of accidents, serious incidents or other interested occurrences, this should not prevent CAOs to submit reports and perform their own analysis in accordance with the Requirement No.22.

As the official investigation usually takes time to complete, CAOs, in the meantime, should use their SMS to uncover any underlying deficiencies. This means that obligations in the Requirement No.22 should not interfere with the implementation of Chapter 7 of Air Navigation Act (No.14), B.E. 2562 (Accident and Incident Investigation), particularly, the submission of the subsequent reports to AAIC. Therefore, double reporting could be required in a situation where CAOs are subject to both AAIC and CAAT requirements.

2.15 What are the obligations for Voluntary Occurrence Reporting of CAOs?

Once CAOs become aware of any occurrences that do not fall into the MOR scheme, CAO should take action as per Article 10 of the Requirement No.22 by considering to submit the voluntary occurrence report to CAAT. Although it is not mandated by the Requirement No.22, CAOs should also conduct occurrence analysis based on their internal SMS process. In addition, Article 11 of the Requirement No.22 allows CAAT to request CAOs to process the occurrence further or to share information if deemed necessary.

2.16 Can any individual employed by a CAO or organization that are contracted by a CAO submit an occurrence report directly to CAAT?

Yes. Refer to 4.2 for details.

2.17 What are the requirements related to notification of accidents or serious incidents and submission of all reports in the Requirement No.22?

The Requirement No.22 requires that a notification, reporting, and submission of related information of an occurrence as per Article 5, 8, 9, 10, 11 and 12 follow requirements in Appendix ข (ภาคผนวก ข) of the Requirement. It covers reporting channels, format of reports, information contained in the reports which are detailed in Chapter 5, 6 and 7 of this guidance material.

It should be noted that the data required to submit to CAAT in the occurrence report should be completed by both reporter and person responsible for handling occurrences (administrator or focal point as mentioned in 2.3). It is encouraged that CAOs produce and customize reporting forms and formats so that they are relevant and easy to use in order to stipulate reporting and reducing human error or confusion among reporters. This should take into account the mandatory data fields of the Requirement No.22. Internal reporting forms do not need to be exactly the same as the forms provided by CAAT, or contain all required data fields, especially the report administration data fields (explained in Section 5.4). However, CAOs should put in place the process to ensure that reports submitted to CAAT comply with the required data fields in different types of report.

2.18 What should a CAO consider further to build effective reporting systems?

For an effective implementation of reporting system, the occurrence reporting systems should:

- be clear of what to report and how;
- be readily and easily accessible to all the relevant personnel;
- have multiple reporting methods to maximize the likelihood of staff engagement; and
- have feedback mechanism to acknowledge and inform of any taken decisions and/or actions (applicable to both MOR and VOR) in order to promote a positive reporting culture and encourage future reporting.

Most importantly, everyone should be made aware of the benefits of safety reporting.

Some other points to consider for effective implementation of the occurrence reporting systems are listed as follows:

– Safety policy statement should include a commitment of management to support occurrence reporting activities as well as defining types of behavior that are unacceptable related to the CAOs' aviation activities which include the circumstances under which disciplinary action would not apply. The aim is to promote "Just Culture".

– Roles and responsibilities of personnel pertaining to the Requirement No.22 are clearly and thoroughly identified and documented within the scope of CAOs' SMS.

– All personnel within the scope of the CAO's SMS understand the Requirement thoroughly and be competent to perform their duties related to the Requirement.

– Processes and manpower to implement effective reporting systems are adequately available.

– Occurrence reports are verified and passed through internal quality check against relevant provisions pertaining to the Requirement No.22 before submission to CAAT.

– Any changes within the CAOs' SMS regarding the introduction of the Requirement No.22 should be effectively and timely managed, documented, and continuously improved as a part of CAOs' SMS.

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Chapter 3: Operator's Obligations

3-1

The Requirement No.22 puts obligations for the Operators to notify and/or report occurrences to CAAT with a required data set through provided channels and format as per Article 5, 10, 11, 14 and 17. This chapter aims to provide better understanding of the Requirement No.22 and guidelines to comply with applicable provisions for the Operators.

3.1 What are the occurrence reporting obligation and process for Operators?
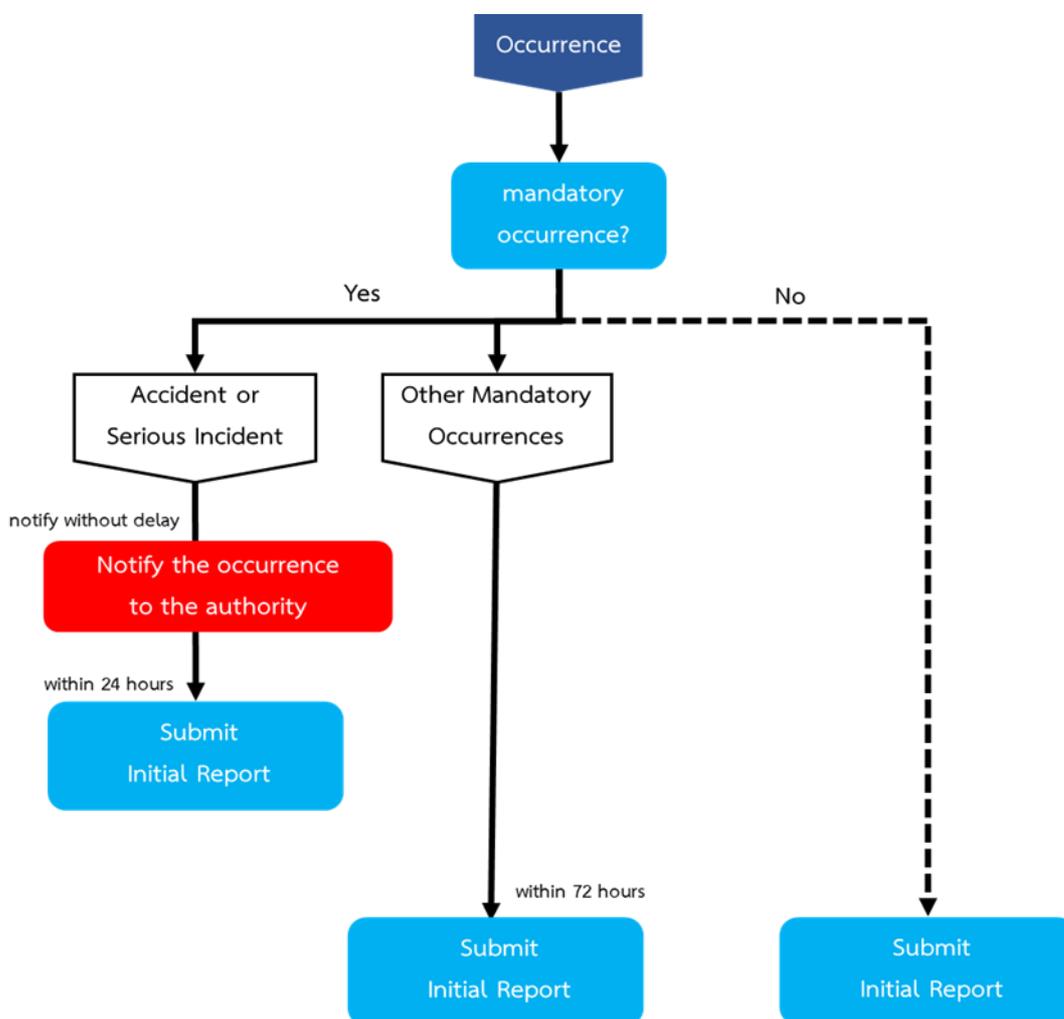
Figure 3-1: Operator's occurrence reporting obligation and process

Figure 3-1 summarizes the occurrence reporting obligations and process of the Operators. It starts from when the Operators become aware of an occurrence. Then, the Operators shall verify the occurrence against the Requirement No.22 in Appendix ก (ภาคผนวก ก) that is relevant to the type of operation. If the occurrence falls under MOR scheme, the Operators shall follow the requirement in Article 5, which can be divided into 2 scenarios:

- As per Article 5 of the Requirement No.22, a mandatory occurrence classified as an accident or serious incident must be notified without delay. Then, the Operators should submit an initial report of such an occurrence within 24 hours after becoming aware of that particular occurrence. On the other hand, if the mandatory occurrence encountered is not an accident or a serious incident, the Operator should submit the initial report to CAAT within 72 hours after becoming aware of the occurrence.

- If an occurrence does not fall into the MOR scheme, the Operators should take action as per Article 10 of the Requirement No.22 by considering to submit the voluntary occurrence report to CAAT.

It should be noted that Article 11 and Article 14 of the Requirement No.22 allows CAAT to request the Operators to process the occurrence further or to provide more information about the occurrence if deemed necessary.

3.2 What does it mean by "becoming aware of an occurrence"?
The Requirement No.22 prescribes the timeframes that the Operator need to notify and submit an initial report of an occurrence under MOR scheme to CAAT when becoming aware of an occurrence. The notion of "becoming aware of an occurrence" refers to the time when the Operators becomes aware by any mean that an occurrence involving with their flight operations has occurred.

3.3 Why does CAAT mandate CAOs to notify accidents and serious incidents?
Refer to 2.8 for details.

3.4 Why does CAAT mandate CAOs to notify accidents and serious incidents by using the same channel and format prescribed in Chapter 7 Section 64/10 of Air Navigation Act (No.14), B.E. 2562?
Refer to 2.9 for details

3.5 What are the requirements related to submission of reports and notification of accidents or serious incidents?

Article 17 of the Requirement No.22 requires that a notification, reporting, and submission of related information of an occurrence of the Operators as per Article 5, 10 and 11 follow requirements in Appendix ข (ภาคผนวก ข) of the Requirement. It covers reporting channels, format of reports, information contained in the reports which are detailed in Chapter 5, 6 and 7 of this guidance material.

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Chapter 4: Individual and Other Organization Reporting

4.1 What does it mean by individual and other organization reporting?

Article 12 of the Requirement No.22 allows any individual or organization other than the CAOs and the Operators defined in the Requirement No.22, who is willing to report an occurrence or other safety-related information on his/her/its behalf, to submit a voluntary report to CAAT directly. This is when the reporter considers beneficial for CAAT to be informed of such information which may involve an actual or potential aviation safety risk to improve aviation safety.

However, if a voluntary report submitted to CAAT on personal behalf from an individual working for or subcontracted by a CAO falls under the MOR scheme, that individual may not claim the report submission as a fulfilment of CAO's mandatory reporting obligation in Article 5.

4.2 How can I report to CAAT?

The Requirement No.22 requires that reporting as per Article 12 follow requirements in Appendix ข (ภาคผนวก ข) of the Requirement. It covers reporting channels, format of reports, information contained in the reports which are detailed in Chapter 5, 6 and 7 of this paper.

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Chapter 5: Overview of Occurrence Report Submission Requirement

This chapter provides an overview of the technical aspects of occurrence reporting pursuant to the Requirement No.22. The chapter starts with the introduction to CAAT's safety data collection and processing system related to mandatory and voluntary occurrences. Then, it provides overview of how to comply with Article 17 and its corresponding Appendix ข (ภาคผนวก ข) of the Requirement No.22.

5.1 What is CAAT's occurrence management system?

The CAAT occurrence management system is an important part of the Thailand Safety Data Collection and Processing System (SDCPS), which store safety data and safety information from various sources, as shown in **Figure 5-1**. However, what will be focused in this section is the MOR and VOR systems implemented by CAAT.

In order to manage safety data and safety information obtained from occurrence reports, CAAT has developed internal procedures to handle with the collection, analysis, and exchange of such data and information as a part of the SSP. It is worth to briefly describe how the system works at a national level to give an overview and better understanding of the technical requirements.

It starts when an occurrence report is submitted to CAAT as per Requirement No.22. Then, it will be processed using "European Co-ordination Centre for Accident and Incident Reporting Systems (ECCAIRS)" software in which the collected data is categorized using common aviation taxonomies and definitions known as "Accident/Incident Data Reporting (ADREP) taxonomy". The ADREP taxonomy is recommended by ICAO as it is universally accepted to facilitate subsequent data analysis and information sharing and exchange. Further explanation of ADREP taxonomy can be found in Section 5.2.

Next, the processed data will be subject to expert review and aggregate analysis to identify safety issues by the "Aviation Safety Action Group (ASAG)" within CAAT, comprising of subject matter experts in relevant areas. The outputs from the analysis will then be used to identify hazard, determine risk and appropriate risk controls that CAAT can exercise through safety promotion, safety oversight, or rule-making activities, etc., on a continual basis as a part of Thailand Aviation Safety Plan (TASP). In addition, CAAT will consider to share and/or exchange information through various channels and formats to the relevant aviation communities.
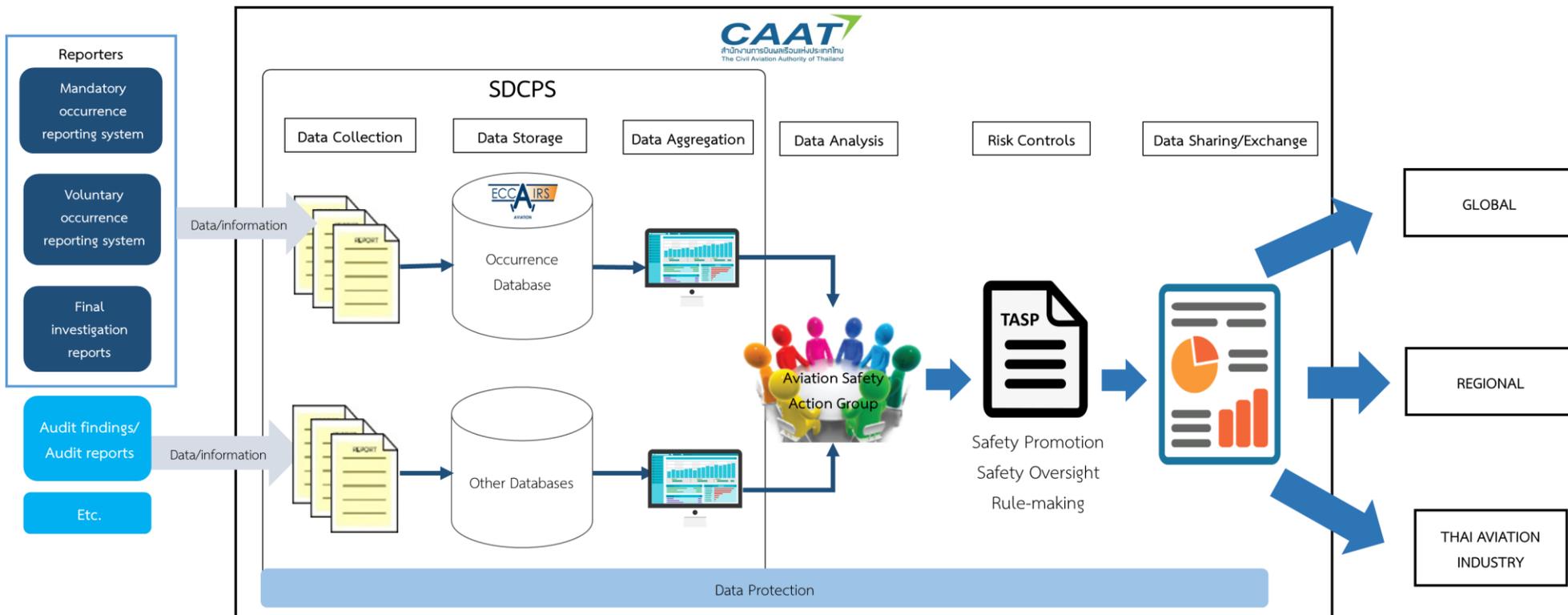
Figure 5-1: State Safety Data Collection and Processing Systems (SDCPS)

5.2 What is ADREP taxonomy?

Accident/Incident Data Reporting (ADREP) taxonomy is an occurrence category taxonomy that is a part of ICAO's accident and incident reporting system used for describing and classifying safety events. ADREP taxonomy is complex but powerful. Its detailed attributes and values allow CAAT to uniformly perform safety analysis on each selected occurrence category and facilitate information sharing and exchange. It is advised that reporters be familiar with ADREP taxonomy structure and details relevant to their reporting obligations. Detailed information of ADREP taxonomy relevant to reporting obligations in the Requirement No.22 can be referred to CAAT website [www.caat.or.th/occurrence].

5.3 Why does CAAT use ECCAIRS to store safety data and safety information from occurrence reports?

ECCAIRS software has been developed by The Joint Research Centre (JRC) under the provision of European Commission. Its database architecture is designed to serve the data collection using the ADREP taxonomy. Moreover, ECCAIRS has been widely used across European and other nations where their reporting systems are matured. **Figure 5-2** provides an example of typical ECCAIRS browser interface.
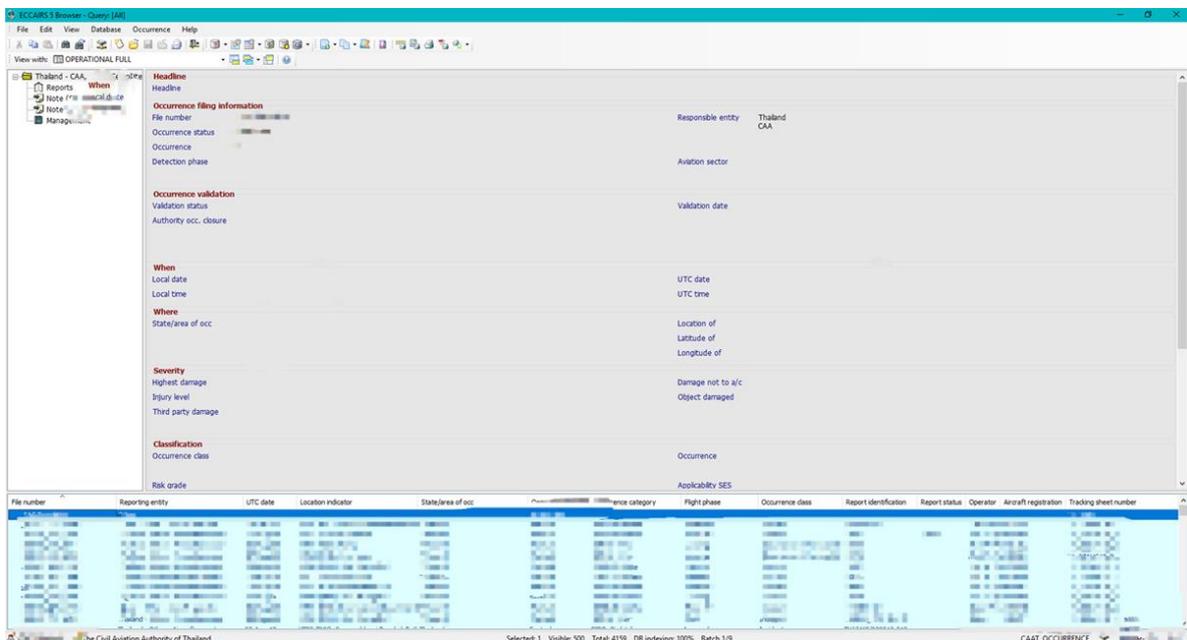
Figure 5-2: ECCAIRS browser interface

CAAT has adopted and implemented ECCAIRS since 2018 to ensure that Thailand aviation safety occurrence databases are systematically stored and categorized using the ADREP taxonomy. This helps improve the quality of information and communication as opposed to the previous practice where occurrence reports were received in non-standardized formats, making it difficult to perform further data analysis. Moreover, ECCAIRS also enables data sharing between CAAT and AAIC.

The exchangeable ECCAIRS file format between the reporters and CAAT has "E5X" extension.

5.4 What requirements should the reporters be aware before submitting a report to CAAT?

To ensure that CAAT can receive and process occurrences in an effective manner, it is important that reporters fully understand their own obligations. Therefore, the requirements related to report submission as required in the Appendix ข of the Requirement No.22 are summarized as follows:

1) Reporting format

In order to facilitate and improve the efficiency of existing CAAT occurrence management in which the number of reports is expected to be continuously increasing over time, the Requirement No.22 requires that occurrence reporting formats submitted to CAAT must be based on ADREP taxonomy and be compatible with ECCAIRS software. An occurrence report that is compatible can be generated by two options as defined in the Appendix ข of the Requirement No.22 which are:

i) E5X files generated from ECCAIRS compatible software

This option is recommended for CAOs with large scale of operations where a large number of reports are/will be generated. This option requires investment to acquire the software. Usually, the software with ECCAIRS compatible functions comes in the form of SMS solution software. Examples of well-known ECCAIRS compatible SMS software are Coruson, e-TOKAI, IQSMS, Q-Pulse, SMSPro, Q5 SMS, and BASIS (or eBASIS) developed by British Airways, etc.

Technically, E5X file is the zip of occurrence data stored in XML file and any other file attached to those occurrences. The content of XML file complies with the ECCAIRS XSD schema, which is built out of the ECCAIRS aviation taxonomy. The file can be opened in an ECCAIRS environment without any conversion. E5X files can be created from a compatible software without requiring an ECCAIRS installation.

It should be understood that in order to comply with the Requirement No.22, the ready-made software may need to be configured with certain parameters and values to ensure its full compatibility with CAAT's ECCAIRS system. The guideline on how to set-up and configure the system are explained in **Chapter 6**.

ii) PDF Forms provided by CAAT

This option is a ready-to-use solution to report occurrences to CAAT. CAAT provides the forms in PDF file format that can be filled out by the reporters. The submitted PDF forms can be imported into CAAT's ECCAIRS database. This option is recommended for small CAOs, operators with small scale of operations, and the individuals and other organizations. To use this option, all reporters should ensure that they have appropriate PDF software to fill out the forms and be knowledgeable on which forms to be used and how to fill out the forms. In addition, CAOs who use this option should also have a document control procedure to create a series of report identification numbers for all reports. The guidelines on occurrence reporting using PDF forms are explained in **Chapter 7**.

For CAOs, it should also be noted that this option facilitates report submission to CAAT with compatible formats. However, it does not provide the solution for collection and storage of occurrences within the CAOs as required in Article 15 of the Requirement No.22 as a part of the SMS. Therefore, CAOs should further develop an internal occurrence database as appropriate to facilitate the use of data and information for further analysis.

As far as the consideration in selecting the most appropriate reporting format to be used by a CAO is concerned, it is recommended that the CAO should first determine a suitable reporting format so that it can further design and acquire appropriate resources to fully implement the process efficiently and effectively by taking into account the size, scope and complexity of the CAO's SMS.

Although it is possible to submit reports using the two formats interchangeably, it is recommended that the CAO is consistent with one format over a period of time to be able to manage occurrences efficiently and to avoid confusion. However, it can be subject to change toward a more automated approach to continuously improve the efficiency of the SMS.

2) Report submission channels

When an occurrence report to be submitted to CAAT has been prepared in accordance with the required format and the data required (as will be explained below and in Chapter 6 and 7), it should then be submitted to CAAT no later than the specified timeline as explained in previous Chapters via channels provided by CAAT.

As indicated in Appendix ข of the Requirement No.22, there are two electronic reporting channels available for reporters to submit occurrence reports and any attachment to CAAT as summarized in **Table 5-1**.

No.	Channel	Format accepted	Available for
1	safetyreport@caat.or.th	E5X file and PDF forms	All categories of reporters (CAOs, Operators, individuals, and other organizations)
2	CAAT website (www.caat.or.th/ occurrence)	PDF forms	Operators, individuals, and other organizations

Table 5-1: Reporting channels to submit occurrence reports to CAAT

It should be noted that the paper-based reports will no longer be accepted unless it is considered necessary to provide information in a timely manner as the last resource or when requested by CAAT on a case by case basis.

3) Data fields completion requirements

For the purpose of in-depth safety analysis and administration of the database, Appendix ข of the Requirement No.22 specifies that the relevant set of data fields must be filled up in the "Initial Report" or "Final Report" depending on nature of occurrences and types of reporting (i.e., MOR and VOR).

In this regard, reporters should understand general structure of the data fields to complete in each occurrence report whether generated from ECCAIRS compatible software or CAAT's PDF forms. The data fields are categorized into three groups as summarized in **Table 5-2**.

Data field type	Description
Basic	The basic data fields are: 1) UTC date; 2) Location of occurrence; 3) Description of the occurrence; and 4) Time of occurrence These basic data fields provide the basis to understand the occurrence. CAAT uses a combination of the data to identify whether reports have been submitted from several different sources as per the Requirement No.22 are of the same occurrence or not. Therefore, they must always be completed in every single occurrence report.
Occurrence-specific	These data fields are considered relevant to the nature of occurrences being reported by different reporters.
Report Administration	These data fields provide the necessary information for administration of occurrences for CAAT as well as reporters. As far as CAAT occurrence management system being implemented is concerned, Report Administration data fields are: 1) Headline; 2) Report identification; 3) Reporting entity; 4) Report status; and 5) Parties informed.

Table 5-2: Data fields structure in an occurrence report

The detailed guidelines on how to comply with data field completion requirements using ECCAIRS compatible software and CAAT's PDF forms can be found in Chapter 6 and 7, respectively. In addition, definitions and how to complete each single data field are provided on the CAAT website [www.caat.or.th/occurrence]. It is recommended that reporters review thoroughly this information in order to produce quality reports for both internal use as well as to comply with the Requirement.

4) Use of the language in the report

The Requirement No.22 requires that the language used in the report is primarily English. However, the evidences supported an occurrence report can be provided in original languages unless English translation is deemed necessary.

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Chapter 6: Reporting of Occurrence using ECCAIRS Compatible Software

This chapter explains detailed information for reporting occurrences to CAAT using ECCAIRS compatible software to submit an occurrence report to CAAT. It provides guideline on the relevant technical aspects to facilitate setting-up and day-to-day operations as per the provisions in Appendix ๒ of the Requirement No.22.

6.1 How to set up the software to generate E5X files that are compatible with CAAT's ECCAIRS system?

In order to generate E5X files that are compatible with CAAT's ECCAIRS system, **Table 6-1** summarizes certain items related to system set-up to be considered.

Item to consider	Requirement / Detail	Reference
Activation of ECCAIRS (E5X) compatible function of the software used	Ensure that the software is able to generate E5X files	Consult with software vendor to activate/configure system to enable the function
ADREP Taxonomy version compatibility	Ensure that the software is set up to generate E5X files that use the same ADREP Taxonomy version with CAAT's ECCAIRS system. Note: ADREP taxonomy version used in CAAT's ECCAIRS system is subject to upgrades.	Refer to up-to-date ADREP Taxonomy version on www.caat.or.th/occurrence and consult with the software vendor to configure the software accordingly
ECCAIRS attribute number mapping, coded value and limitation setting of applicable data fields required by the Requirement in the software	Configure the software to ensure that the E5X files generated from the software can be imported into CAAT's ECCAIRS system, each data field in the software of the reporters must be: 1) mapped with the ECCAIRS attribute number specified in the Requirement; and 2) configured to contain coded values that are similar to the values used in CAAT's ECCAIRS	**For ECCAIRS Attribute Number Mapping:** Refer to Table 2 and corresponding Table A to I in Appendix ๒ of the Requirement No.22. (Also available on CAAT website [www.caat.or.th/occurrence])

Item to consider	Requirement / Detail	Reference
	system and meet the data field limitations of that particular data field Note: Not all data fields have coded value and/or limitations. It depends on the data type of each data field.	**For Coded Values and Limitations:** Refer to List of Coded Values and Limitations of data fields on CAAT website [www.caat.or.th/occurrence] Then, consult with the software vendor to configure the software to meet the requirements accordingly
Submission of the E5X report files to CAAT	Configure the software to send the generated E5X report files to e-mail address safetyreport@caat.or.th with suggested components specified in Section 6.7.	Consult with the software vendor to configure the software to meet the requirements accordingly

Table 6-1: ECCAIRS Compatible Software Set-up Criteria

In **Table 6-1**, the term "coded value" refers to the pre-defined ADREP taxonomy values for a data field used in CAAT's ECCAIRS system. Although ECCAIRS compatible software of a reporter is built based-on the ADREP taxonomy structure, there is a chance that the coded value for a data field in the software, mapped with an ECCAIRS Attribute required by the Requirement No.22, has different set of coded value from CAAT's ECCAIRS system. If that is the case, the submitted E5X file will not be able to import into the CAAT's ECCAIRS database.

6.2 What are the specific requirements for data fields to be submitted via ECCAIRS compatible software by reporters?

When the software is configured to meet all requirements in Section 6.1, it is ready to generate occurrence reports that are compatible with CAAT's ECCAIRS system. Next is to make sure that the reporters are aware of the data field completion requirements as introduced in Section 5.4 for each occurrence report.

Appendix ข of the Requirement No.22 requires that occurrence reports to be submitted to CAAT via ECCAIRS compatible software contain certain data fields specified for each occurrence. Therefore, when completing or checking quality of an occurrence report before submitting to CAAT, the following guidelines should be followed:

1) Identify data field requirement table (Table A to I) that is applicable to the occurrence being considered by referring to Table 2 of Appendix ข of the Requirement.

2) Ensure that data field requirement list in the applicable table from Table A to Table I (obtained from the step above) are completed by using the following data field criteria:

   – Data field marked as "INITIAL" is to be submitted in the "Initial Report" of a mandatory or voluntary occurrence.

   – Data fields marked as "FULL" is to be submitted in the "Final Report" of a mandatory occurrence.

   Note :

   a. *The definition of "FINAL" in the requirement No. 4 of Appendix ข is to be used interchangeably with "FULL" indicated in Table A to Table I of Appendix ข.*

   b. *Any data field required in the "Final Report" could possibly be submitted in the "Initial Report" if it is readily available.*

   – Data fields marked as "OPTIONAL" is advised to be submitted in either "Initial Report" or "Final Report", when available, for a mandatory or voluntary occurrence.

Due to the fact that there are different data field requirements for different types of occurrence, it is advised that the user interface of the software is designed or modified to enable users to easily recognize and/or prevent omission to complete the required applicable data fields of each occurrence.

6.3 How could CAOs choose a proper report status (ECCAIRS Attribute Number 800) in a mandatory occurrence report?

Report status (ECCAIRS Attribute Number 800) is one of the Report Administration data fields required in each single mandatory occurrence report. This enables CAOs to track the reporting status throughout different stages from the start to the end.

The "Report Status" data field has four default ADREP taxonomy coded value to choose from. However, to align the use of the "Report Status" with the Requirement No.22, it should be noted that only three report status values - "Initial notification", "Closed", and "Closed on issue" are used in CAAT's ECCAIRS system.

The Requirement No.22 requires CAOs to submit the "Initial Report" of an occurrence with "Report Status" before performing Hazard Identification and Risk Assessment (HIRA). Therefore, CAOs should pre-determine whether an occurrence has/might have a significant risk as per Article 8 of the Requirement before submitting an "Initial Report" of a mandatory occurrence in order to determine a proper value for "Report status" and take appropriate action(s) as follow:

- If it is determined that an occurrence has/might have a significant risk:
    1) Submit the "Initial Report" with "Initial notification" report status;
    2) If the HIRA as per Article 6 (1) and Article (7) is performed and concluded that the risk is not significant:
        a) Submit the updated "Initial Report" with a "Closed on issue" status to CAAT.
    3) Otherwise:
        a) Perform actions as per Article 6 (2) to identify risk control measures, and
        b) Submit the "Final Report" with a "Closed" status to CAAT.

- If it is determined that an occurrence does not have a significant risk:
    1) Submit the "Initial Report" with "Closed on issue" status to CAAT with no further reporting requirement to CAAT unless requested.
    However, those occurrences should be used for aggregate safety data analysis under the SMS of the CAO.

6.4 What should I do if a required data filed of an occurrence report cannot be completed?

There could be cases where the reporters might not be able to complete a required data field. When a data field is applicable/relevant to the occurrence but not readily available or when the data field is not applicable/relevant to the occurrence, just simply leave the data field "blank".

For examples:

- An aerodrome operator may submit a bird strike occurrence, which was identified by airport personnel inspecting runway, to CAAT. In this case, it might not be possible to identify whether the pilot was advised of birds. Therefore, the data field "Pilot advised of birds" should be left blank in the occurrence report submitted to CAAT.
- An occurrence taking place in the approach phase, the "location on aerodrome" is unlikely applicable to this particular occurrence. In this case, the data field "location on aerodrome" should be left blank in the occurrence report submitted to CAAT.

6.5 To what extend should the description of the occurrence be written in the report?

When providing a description of the occurrence or other explanatory data (if any), reporters should provide as much information as possible with clear, correct, concise and easy-to-understand language to ensure a proper understanding of the occurrence by readers. The content writing should follow the simple rule of 5W and 1H (Who, What, Where, When, Why, and How) to the best extent possible.

6.6 How to submit an occurrence report in E5X file format to CAAT?

As explained in Section 6.1, reporters using an ECCAIRS compatible software should configure the system to send E5X files to CAAT via a CAAT designated e-mail address. However, different systems may have different methods to send E5X files generated from the software through an e-mail. Therefore, it is advised that reporters to consult with the software vendors on how to submit the E5X report files. Also, refer to e-mail submission guideline in Section 6.7.

6.7 What should be included in the e-mail submitted to CAAT?

In order to help CAAT manage incoming occurrence reports via e-mail from ECCAIRS compatible software systems, it is suggested that the contents listed in **Table 6-2** are included in each submitted e-mail.

Component of an e-mail	What contents should be included
CC recipient(s)	E-mail of occurrence administrator(s) whom CAAT can contact and send feedback (if any) via that e-mail. Note: In some system where an E5X file is submitted to CAAT from an automated no-reply e-mail address, CAAT will not be able to provide feedback via that email.
Email subject	Subject of each e-mail should contain: − Reporting entity (ECCAIRS Attribute No.447) − Auto-generated report identification (ECCAIRS Attribute No.438) − Report Status (ECCAIRS Attribute No.800)
E-mail attachment	Attachment of each e-mail should contain: − Report file in E5X format − report file in PDF format (if possible)

Table 6-2: Contents to be included in the occurrence report e-mail

It is recommended that reporters provide the above requirements to the software vendors to configure the system to be automatically generated. **Figure 6-1** shows an example of e-mail submitted from an ECCAIRS compatible software to CAAT.
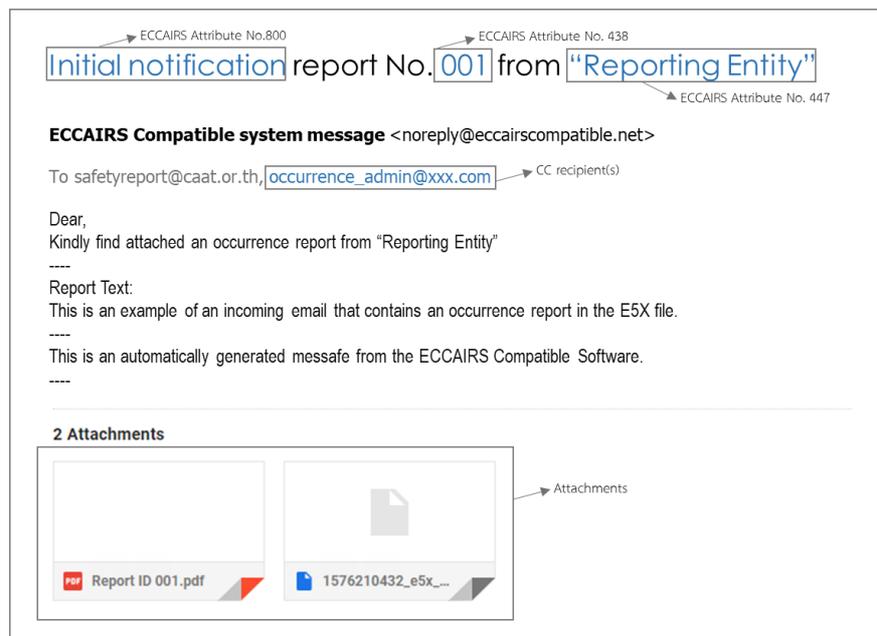
Figure 6-1: Example of an e-mail sent from an ECCAIRS compatible software to CAAT with recommended components

6.8 How should CAOs notify the late submission of the final report?

As explained in Section 2.7, if it is expected that the final report of an occurrence or a group of occurrences cannot be submitted to CAAT within the first 60 days after the initial report is submitted to CAAT, notification of deferment should be made to CAAT prior to the deadline. The notification should include the reason(s) for delayed submission in the data field "Occurrence analysis results" (ECCAIRS attribute number 1070) in that particular occurrence report and submit to CAAT.

6.9 Should reporters allow the software to automatically submit reports to CAAT on a specific interval before the deadline to submit the final report of a mandatory occurrence?

It is recommended that the reporters set up the system not to allow automatic submission of the reports to CAAT. It should be emphasized that CAAT requires the reporters to submit "Initial Report" and "Final Report" with required data on the specified timeframe as explained in Section 2.7 and 6.2.

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Chapter 7: Reporting of Occurrence using CAAT's PDF Forms

This chapter explains detailed information for reporting occurrences to CAAT using CAAT's PDF forms. It provides guideline on relevant technical aspects to prepare reporting facilities and to prepare occurrence reports in day-to-day operations to comply with the provisions in Appendix ข of the Requirement No.22.

7.1 How CAAT's PDF forms for reporting occurrences are created?

CAAT developed the PDF forms by using a function in ECCAIRS supported software called "ECCAIRS View Designer" to ensure that the PDF forms are generated with built-in ADREP taxonomy version that is compatible with CAAT's ECCAIR system. This allows:

– Reporters without ECCAIRS compatible software to submit occurrence reports to CAAT with required formats; and

– Automatic transfer of information into CAAT's ECCAIRS system.

7.2 What reporting facilities are required to use CAAT's PDF forms?

In order to complete the PDF forms;

– The reporters need to have their computer installed with "Adobe Acrobat or Reader DC version 2017" or newer versions. This software is available at www.adobe.com for free of charge; and

– Operating system should be Window 7 or newer version.

Note that other PDF software, such as Preview Application Quartz PDF Context on Mac iOS and Linux, may not fully support the CAAT's PDF forms.

7.3 Which PDF form should I use to report an occurrence?

A required PDF form should be used to report an occurrence as indicated in Table 1 of the Appendix ข of the Requirement No.22. To avoid confusion in choosing a reporting form for CAOs and Operators, these PDF forms can be used not only for reporting mandatory occurrences, but also for reporting voluntary occurrences depending on types of occurrences. However, the reporters who would like to submit any type of voluntary occurrence report to CAAT on behalf of an individual or other organization as per Article 12 of the Requirement No.22, should use "Individuals/Other Organizations" PDF form only.

7.4 Where can I download the blank PDF forms?

The CAAT's PDF forms are available in CAAT website [www.caat.or.th/occurrence]. Note that PDF forms are subject to change over time by CAAT as appropriate, such as when taxonomy version was changed. The reporters should ensure that they use the correct form to report an occurrence.

7.5 What are the specific requirements for data fields to be submitted via CAAT's PDF forms by reporters?

Given that reporters pertaining to the Requirement No.22 are subject to data field completion requirements introduced in Section 5.4, this section provides further guideline to comply with such requirements when submitting mandatory and voluntary occurrence reports.

Generally, as shown in **Figure 7-1**, each PDF form contains the name of the PDF form on the top right corner of each page. For data fields, each of them is presented in the form with data field name, description (for some data fields), and color around the box. It is recommended that reporters understand the meaning of each data field and be familiar with the form relevant to their reporting responsibilities. Reference for data filed descriptions can be found in CAAT website [www.caat.or.th/occurrence].

Figure 7-1: Example of a CAAT's PDF form with its components

To submit a mandatory occurrence report, the reporters should ensure that:
- Mandatory data fields that are relevant to the occurrence being reported marked in "red" color are filled before submission of the "Initial Report" to CAAT.
- Mandatory data fields that are relevant to the occurrence being reported marked in "blue" color are filled before submission of the "Final Report" to CAAT.
- Optional data fields that are relevant to the occurrence being reported marked in "grey" color are filled before submission of either the "Initial Report" or "Final Report" to CAAT if possible. If not, it can be left blank.

Note :
- In the case that a mandatory data field specified in any form used is not relevant to an occurrence being reported or not available, it should be understood that the particular data filed in question can be left blank.
- Any mandatory data filed required to be submitted in the "Final Report" can also be submitted in the "Initial Report" if such data is readily available.

For voluntary reports, it should be understood that the reporters fill in data in all available fields as many as possible with no requirement on mandatory data fields to be completed. However, it is advised that the reporters provide at least two critical data fields in "General Information" section of the form which are "Title of occurrence" and "UTC date" which are important for CAAT to match the incoming reports of the same occurrence from different sources.

7.6 How to complete the "Report Identification" data field for each report?

"Report identification" data field is available in all PDF forms except for the "Individuals/Other Organizations" form. The intention to include this data filed into the PDF forms is to allow CAOs or Operators who use a PDF form to set a unique identification number to each report as a reference. This will facilitate occurrence tracking for reporters themselves as well as to facilitate the communication between reporters and CAAT.

There is no specific rule set by CAAT for specifying a report identification for occurrence reports. However, reporters should develop a systematic way to assign and keep track of report identification for all reports. By doing so, the reporters should ensure that:
- Only one PDF report file should be created for each occurrence with a unique report identification; and
- The unique report identification for each report should be recorded in a log file prepared by reporters to keep track of all reports.

If the reporters have not yet determined how to set the report identification, it is advised that reporters use the simple report identification format shown in **Figure 7-2**.

> **YYYYMMDD_###**

Figure 7-2: Simple report identification format

- "YYYYMMDD" is the date of occurrence
  - YYYY = Year of Occurrence
  - MM = Month of Occurrence (number)
  - DD = Date of Occurrence (number)

For example;

If date of the occurrence is on April 1st, 2020, the date code should be "20200401".

It is recommended that reporters use UTC time to identify the date of occurrence.

- "###" is running number of the occurrence where the criteria are to be set by the reporters.

For example;

The running number of occurrence reports taking place on April 1st, 2020 could be 001, 002, 003, etc.

Figure 7-3 illustrates the completed "Report identification" data field for a report No. 001 occurred on April 1st, 2020 of a particular reporter. Note that "Report identification" may contain numbers and English alphabets.

Figure 7-3: Example of report identification

7.7 Should I create only one PDF file for an occurrence?

Yes. Only one report file should be created for each occurrence with a unique report identification number. When the reporters are required to submit report of an occurrence more than once, as per the Requirement No.22, it should be understood that additional information is added/modified into the existing report file already create. It is also suggested that when saving a file, the report identification number should be included in the file name of each occurrence for traceability.

7.8 How could CAOs choose a proper "Report Status" in a mandatory occurrence report?

Report status is one of the Report Administration data fields required in each single report except the "Individuals/Other Organizations" form. This data field is applicable for CAOs when reporting a mandatory occurrence only.

Refer to Section 6.3 paragraph 2 and 3 for guideline related to the "Report Status" data field.

7.9 To what extend should the description of the occurrence be written in the report?

Refer to 6.5 for details.

7.10 How to submit a completed PDF report form to CAAT?

When a report is created and checked for quality by the reporters, it is then ready to be submitted to CAAT via channels provided in **Table 7-1**.

Reporter Types	Report Submission Channel	Descriptions
CAOs	safetyreport@caat.or.th	Submit:
Operators	− safetyreport@caat.or.th − www.caat.or.th/occurrence	1) electronic PDF file of an occurrence
Individuals and Other Organizations	− safetyreport@caat.or.th − www.caat.or.th/occurrence	2) attachments (as necessary) Note: Scanned CAAT's PDF file is not accepted

Table 7-1: PDF report form submission channels for different types of reporters

7.11 How many PDF forms can be submitted in an e-mail sent to CAAT?

In order to facilitate CAAT to handle incoming occurrences sent via e-mail from reporters using PDF forms, it is suggested that reporters submit PDF form in the manner instructed below.

Generally, it is advised that one e-mail submitted to CAAT contains one occurrence report. The subject of the e-mail should include components as shown in **Figure 7-4**.

<div style="border:1px solid black; text-align:center">

Identity of Reporter_Title of Occurrence

</div>

Figure 7-4: Subject of an e-mail

- "Identity of Reporter" is used to identify who is the reporter.
  - For a reporter who is organization either a CAO or an Operator, use the organization name. It could be either full name or abbreviated name. However, it is suggested that a CAO use a consistent name format.
  - For a reporter that is individual Operator, use the generic term applicable to the operations being reported which are "General Aviation" or "Aerial work".
  - For a reporter who submit a report on behalf of an individual or other organization, use the term "Voluntary".
- "Title of Occurrence" is to be taken from "Title of occurrence" data field of that particular occurrence to be submitted to CAAT.

However, it should be understood that any reporter can submit multiple occurrence reports in one e-mail sent to CAAT only when those group of occurrences has the same "Title of Occurrence" and has no attachment for each of the report.

7.12 How should CAOs notify the late submission of the final report?

As explained in Section 2.7, if it is expected that the final report of an occurrence or a group of occurrences cannot be submitted to CAAT within the first sixty days after the submission of the initial report already submitted to CAAT, it should be notified prior to the deadline to CAAT.

To notify deferment of final report submission, CAOs should put the reason(s) in the data filed "Occurrence analysis results" in that particular occurrence report file as shown in **Figure 7-5** and submit to CAAT through the channels indicated in Section 7.10.

Figure 7-5: Example of occurrence analysis result data field in a PDF form

It should be noted that when submitting the report in this particular case, it is recommended that CAOs use subject of the e-mail by using the format shown in **Figure 7-6**.

> **Identity of Reporter_LATE NOTIFICATION_XXX**

Figure 7-6: E-mail subject format to submit notification for late submission of the final report

- "Identity of Reporter" is the same as explained in Section 7.11
- "XXX" is the report identification of the particular occurrence report explained in Section 7.6

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Chapter 8: Guideline on Mandatory Occurrence Lists

This chapter provides guideline to assist CAOs and Operators to understand and interpret the meaning of mandatory occurrences pertaining to all categories of reporters listed in Appendix ก of the Requirement No.22. The aim is to help the reporters to have a better and clearer judgement to determine whether an occurrence taken place and becoming aware is subject to mandatory occurrence reporting provision as per the Requirement No.22. In addition, it provides recommendations on what information is suggested to be added in the "Description of the occurrence" data filed to facilitate further data analysis.

Given the amount and characteristics of the information, the guidelines and recommendations are placed on CAAT website [www.caat.or.th/occurrence].

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References

Regulations and Guidance Materials

1. The Civil Aviation Authority of Thailand Requirement No.22 on Reporting of Civil Aviation Occurrence. (2019).

2. Guidance Material for Regulation (EU) No 376/2014 On the Reporting, Analysis and Follow-up of Occurrences in Civil Aviation. European Union. (2015).

3. CAP 382 – The Mandatory Occurrence Reporting Scheme Information and Guidance. (2011).

4. CAP 382S – Guide to Ground Safety Reporting. (2013).

5. The MORs code, Guidance on mandatory occurrence reports (MORs) and voluntary occurrence reports (VORs) – CAP382, Retrieved from https://www.caa.co.uk/Our-work/Make-a-report-or-complaint/MOR/The-MORs-code/

ICAO Publications

1. ICAO Safety Management Manual (Doc 9859) 4th edition 2019.

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