



สำนักงานการบินพลเรือนแห่งประเทศไทย
The Civil Aviation Authority of Thailand

Dangerous Goods Inspection Manual

CAAT-OPS-DGIM

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Head of Flight Operations Inspector Division

Acting Manager of Flight Operations Standards Department

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0. Introduction

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17-10	01	02	19-Nov-2021
18-1	01	00	19-Dec-2018
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20-1	01	02	19-Nov-2021
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0.3 Record of Revision

This version of the of Dangerous Goods Inspection Manual (DGIM) is Issue 01 Revision 03.
The valid pages of DGIM are listed in the List of Effective Pages distributed with every revision.

Whenever there is a significant change of responsibility, guidelines, policy or procedures, a new manual issuance is required. Minor amendments (if any) shall be issued in the form of a revision with effective pages being reviewed not later than the effective date. A vertical black line is required on the left-hand side of the page identifying all revisions.

Minor Changes

- Few chapters are affected requiring revision change.
- The changes are made and communicated by way of revising the manual to a higher revision number.

Major Changes

- Extensive revisions necessitating a complete re-issuance when involving significant changes in responsibility, guidelines, policy or procedures including substantial format change.
- The next higher issue number will be allocated while the revision number will be reset to zero.

Issue	Revision	Effective Date	Revised By
01	00	19-Dec-2018	OPS/DG
01	01	3-May-2019	OPS/DG
01	02	19-Nov-2021	OPS/DG
01	03	15-Dec-2022	OPS/DG

0.4 Revision Transmittal

To: All holders of Dangerous Goods Inspection Manual

Subject: Dangerous Goods Inspection Manual

This revision reflects the most current information available to the Civil Aviation authority of Thailand (CAAT).

General information below explains the use of revision bars to identify new or revised information. Highlights in the Revision Highlights section explain the revision bar changes in this revision.

General

The original issue of Dangerous Goods Inspection Manual is 19/Dec/2018

The valid pages of Dangerous Goods Inspection Manual are listed in the List of Effective Pages distributed with every revision.

A revision bar (vertical black line – approx. 2pts) is required on the left-hand side of the page identifying the revised amendments.

Filing Instructions

Consult the List of Effective Pages.

When updating hardcopy manuals and inserting changes, users should exercise caution not to throw away pages from the manual that have not been replaced. Using the List of Effective Pages can help determine the correct content of the manual.

0.5 Revision Highlights

Area of Changed	Amendment Summary
4.5.1 Frequency of inspections	Changes for accuracy of the information
4.6.1 Random inspections	Changes for accuracy of the information
5.2.5 Application for an Approval to transport of dangerous goods	Changes for accuracy of the information
6.3.1 Phase 1 Pre-Application Phase	Changes for accuracy of the information
6.5.4 Phase 3 Document Evaluation Phase	Changes for accuracy of the information
7.2.1.1. 1. Pre-Application Phase	Changes for accuracy of the information
9.4 Required Document to be submitted	Changes for accuracy of the information
9.5.2 DGTM and Dangerous Goods Training Programmes Approval Procedure	Changes for accuracy of the information
10.4.5 Section of Inspection Areas	Changes for accuracy of the information

0.6 Distribution List

Type of Document	Distributed To
Original Hard Copy	Flight Operations Standards Manager
Electronic Document	Flight Operations Standards Staff

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0.7 Administration

0.7.1 Manual Purpose and Objective

This Dangerous Goods Inspection Manual (hereinafter referred to as “DGIM”) provides comprehensive corporate policies, procedures, and guidelines for Dangerous Goods Inspectors (hereinafter referred to as “DGI”) to conduct their obligation to meet the standards that are relevant and compliance with International Civil Aviation Organization’s Annex, Standards and Recommended Practices (SARP) and National Regulations.

0.7.2 Applicability and Conditions of Use

This manual shall be effective from 19/Dec/2018 and is the property of the Civil Aviation Authority of Thailand (herein after refer as “CAAT”).

All DGI shall be familiar with the contents of this manual, at least as these pertain to their duties, and, to adhere at all times to the policies, processes and procedures laid down in this manual.

Any deviations should be reported to the Dangerous goods division (herein after refer as “DG”) and the reasons for such deviations shall be given.

All copy(ies) assigned to individual position(s) or section(s). If, for any reason, the position(s) or section(s) is abolished from CAAT, the respective copy(ies) of the manual must be returned to DG. In the event of a change in title of the position(s) or section(s), the department concerned shall promptly inform OPS/DG.

NOTE: ALL INFORMATION CONTAINED HEREIN IS RESTRICTED AND SHALL BE KEPT FOR INTERNAL USE ONLY.

None of this information shall be divulged to persons other than CAAT employee and individuals or organizations authorized by CAAT in accordance with existing policy regarding release of CAAT information. The holder shall notify OPS in writing for loss of manual and to obtain replacement copy in the event of loss of hardcopy manual received.

0.8 Control of Manual

This DGIM is issued by OPS/DG and approved by OPS Manager. OPS Manager shall ensure that this manual contains legible and accurate information, is easily understood and presented in a format that meets the needs of all DGIs within CAAT.

The contents of this manual shall not be altered in any way, reproduced, stored in a retrieval system or transmitted in part or whole in any form, by any means (electronic, mechanical, photocopying or otherwise), without the express written consent of OPS.

OPS/DG shall retain a secure, archived copy of the following documents for a minimum period of 5 years:

- a. All revisions of this manual
- b. Record of all controlled hard copies with manual control number
- c. Background and/or source references; and
- d. Transmittal letters/dissemination control forms

All obsolete revisions shall be identified and disposed accordingly. Hard copies shall be disposed by shredding, whilst expire e- documents shall be deleted from the primary server and archived.

Review, Revision and Approval Process

This manual shall be reviewed at least every 12 months. OPS/DG shall ensure the information provided in this manual is updated and current. DG shall identify the need for updates, by means of effective auditing, consultation with relevant departments and continuous review of the quality requirements.

DG shall format the manual pages to include the changes, and submit the revised manual pages to OPS Manager for approved.

The following are revision control requirements;

- a) Revised content of this manual shall be identified with a 'revision bar' (line drawn on the outboard of the page) where changes are made.
- b) Any page which carries an amendment must bear the new revision date.
- c) This manual and any subsequent revisions to this manual shall only be executed upon consultation with and approval from OPS Manager.

0.9 Dissemination and Transmission

As part of our efforts toward conservation, electronic dissemination and transmission should be the preferred mode. The dissemination and transmission of this manual shall be communicated by the DG to all senior management staff of CAAT. An electronic version of this manual shall be made available and may be downloaded from the CAAT System.

If applicable, controlled hard copies of this manual shall be distributed to the recipients listed in the Controlled Distribution List.

Any additional request of controlled hard copies of this manual shall be made in writing to DG. All DGIs shall have access to an electronic copy of the manual via the Regulation on CAAT System.

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0.10 Change Request

Any individual or departmental (Originator) seeking improvements or changes to the contents of this manual, shall notify to OPS in writing or e-mail with all supporting information and justification.

The submission shall contain sufficient information to identify:

- a) The Originator Department and Contact Number
- b) The pertinent paragraph reference(s)
- c) Concise context of the requested change
- d) Related information or reference documents, if any
- e) Reason for the requested change

DG shall review the change request and verify conformance to the requirements and if necessary confer with the Originator. Once DG concurs with the changes request, DG shall be submitted to OPS Manager for approved.

DG shall inform the relevant Department Director and/or Originator of the final decision.

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0.11 Instruction and Forms

All forms and instructions required by this manual are listed in Document and Records Management System (DRMS).

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0.12 Policy and Compliance Statement

Dangerous Goods Policy

CAAT adheres to practices that promote the highest standards and safety transport of Dangerous Goods by Air. We are committed to providing all the resources needed to implement this safety policy, and to meet or exceed all applicable ICAO regulations and standards.

CAAT supports an open and just reporting culture, and encourages honesty, respect and an environment where individuals are accountable for their actions and can expect to be treated fairly. Honest mistakes, those that are not due to negligence, deliberate violations or willful misconduct, should not be punished. We strive to learn from all incidents and events, and to promote safety and risk awareness throughout aviation industry, with the aim to continually improve in country aviation industry safety level.

The responsibility for making CAAT operations efficient liaise with each individual employee from departmental manager. Each departmental manager is responsible and accountable for implementing the quality management systems in his or her area, and for ensuring that all reasonable steps are taken to improve quality of work. All processes shall be planned, documented, monitored and evaluated based on regulatory requirements and CAAT procedures, and promulgated via clear and measurable steps so as to maximize quality.

All employees have direct access to me for all quality matters, as ultimate responsibility and accountability for CAAT's performance in these area rests with me as the Manager of Flight Operations Standards Department of the Civil Aviation Authority of Thailand.

Veera Cheevaidarakul
Head of Flight Operations Inspector Division
Acting Manager of Flight Operations Standards Department

Compliance Statement

The Dangerous Goods Inspection Manual (DGIM) complies with the applicable elements of the ICAO requirements and with the terms and conditions of the Air Navigation Act.

The DGIM defines the requirements and establishes the CAAT Standard for Dangerous Goods Inspectors to conduct the audit with adequacy of procedures required to ensure safe operational practices and Dangerous Goods Transportation by Air in Thailand.

The DGIM as described in this manual, contains procedures designed to verify that all functions are being conducted in accordance with all applicable requirements, standards and procedures.

It is the responsibility of Dangerous goods division to know DGIM's contents follow the instructions and keep the manual up-to-date by immediately inserting all revisions when they are issued. All information the DGIM contains is confidential. The transmission or the revelation of its contents in any manner to persons not associated with CAAT is strictly prohibited.

The Flight Operation Standards Manager shall ensure that the DGIM accurately reflects the operational policies, regulations and procedures and all the CAAT's operation is being carried out strictly based on this manual by the responsible functions.

Veera Cheevaidarakul
Head of Flight Operations Inspector Division
Acting Manager of Flight Operations Standards Department

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1. General Information

1.1 Introduction

- 1.1.1 As required by Regulation on the Civil Aviation Authority of Thailand No. 4 on Transportation of Dangerous Goods by Air and Annex 18 to the Chicago Convention: *“Each Contracting State shall establish inspection, surveillance and enforcement procedures for all entities performing any function prescribed in its regulations for air transport of dangerous goods with a view to achieving compliance with those regulations.”*

Note:

1. It is envisaged that these procedures would include provisions for:
 - Inspecting dangerous goods consignments prepared, offered, accepted or transported by the entities referred to in Chapter 11 Item 1;
 - Inspecting the practices of the entities referred to in Chapter 11 Item 1; and
 - Investigating alleged violations Chapter 11 Item 3.
2. Guidance on dangerous goods inspections and enforcement may be found in the Supplement to the Technical Instructions

- 1.1.2 The policies, criteria, procedures and guidelines presented in this manual are designed to ensure a consistent implementation for the approval and surveillance of the air transportation of dangerous goods and granting exceptions in compliance with the Technical Instructions, when proceed.

- 1.1.3 The following guidance is offered to assist primarily in the inspection of operators, handling agents, freight agents, shippers and other parties.

- 1.1.4 This manual outlines the recommended procedures the Dangerous Goods Inspector should follow in conducting his/her duties.

1.2 Manual Scheme

To facilitate the use of this manual, care was taken to ensure that the pages are easy to read and that information is easy to locate. The table of contents provides easy reference to the overall content. The chapters provide detailed information about the various items listed in the table of contents. Finally, the appendices provide supporting material to the chapter such as checklists and charts.

1.3 Definitions

The definitions located in the International Civil Aviation Organization (ICAO)'s “Annex 18 to the Convention on International Civil Aviation, The Safe Transport of Dangerous Goods (AN 18)” and the “ICAO Technical Instructions for the Safe Transport of dangerous Goods by Air (ICAO TI)” definitions apply. Where a word or term is not defined by these documents, see the dictionary definition.

The following additional definitions are only for the use of this manual:

- **“Additional Documents”** means any documents other than the Dangerous Goods Transport Document, when required or used. Examples of additional documents are:
 - Dangerous Goods Transport Documents;
 - Acceptance checklist;
 - Notification to the Pilot-in-Command (NOTOC);
 - Air Waybill; and
 - Packaging Design Certificates for some of the packaging design to contain radioactive material.
- **“Approval”** means an authorization granted by the appropriate national authority for:
 - a) the transport of dangerous goods forbidden on passenger and/or cargo aircraft where the Technical Instructions state that such goods may be carried with an approval; or
 - b) other purposes as provided for in the Technical Instructions.

Note. — In the absence of a specific reference in the Technical Instructions allowing the granting of an approval, an exemption may be sought
- **“Audit”** means an in depth inspection of an air operator’s operation to verify conformance with current regulations.
- **“Cargo aircraft”** means any aircraft, other than a passenger aircraft, which is carrying goods or property.
- **“Combi Aircraft”** means an aircraft that can be used to carry both passengers and cargo on the main deck of an aircraft, separated by a partition passenger, as an airliner, or cargo as a freighter, and may have a partition in the aircraft cabin to allow both uses at the same time in a mixed passenger/freight combination.
- **“Compliance”** means the state of conforming to specified requirements of a regulation.
- **“Crew member”** means a person assigned by an operator to duty on an aircraft during a flight duty period.
- **“Dangerous Goods Coordinator”** means the person within an organization who has technical knowledge on the safe transport of dangerous goods by air and acts as a contact point between the organization and the competent authorities of the State.
- **“Exception”** means a provision in these Instructions which excludes a specific item of dangerous goods from the requirements normally applicable to that item.
- **“Exemption”** means an authorization, other than an approval, granted by an appropriate national authority providing relief from the provisions of the Technical Instructions.

- **“Flight crew member”** means a licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period.
- **“Inspection”** means the examination of specific documents, articles or processes either routinely or for specific reason to ensure compliance with the regulations.
- **“Investigation”** Systematic search for and documentation of facts relevant to an occurrence or suspected violation, from which a decision to take appropriate action will be made.
- **“Material Safety Data Sheet (MSDS)”** (Synonyms: Safety Data Sheet (SDS) and Product Safety Data Sheet (PSDS)) is a document intended to provide workers and emergency personnel with procedures for handling or working with that substance in a safe manner, and includes information such as physical data (melting point, boiling point, flash point, etc.), toxicity, health effects, first aid, reactivity, storage, transportation, disposal, protective equipment, and spill-handling procedures. MSDS formats can vary from source to source within a country depending on national requirements.
- **“Operations specifications”** means the authorizations, conditions and limitations associated with the air operator certificate and subject to the conditions in the operations manual.
- **“Operator”** means a person, organization or enterprise engaged in or offering to engage in an aircraft operation.
- **“Passenger aircraft”** means an aircraft that carries any person other than a crew member, an operator’s employee in an official capacity, an authorized representative of an appropriate national authority or a person accompanying a consignment or other cargo.
- **“Pilot-in-command”** means the pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight
- **“Procedure”** means a series of steps taken to reach a desired outcome.
- **“Process”** means a series of actions, changes, or functions bringing about a result (When, Where, How, What and by whom a task shall be completed)
- **“State of Origin”** means the State in the territory of which the consignment is first to be loaded on an aircraft.
- **“State of the Operator”** means the State in which the operator’s principal place of business is located or, if there is no such place of business, the operator’s permanent residence.
- **State of destination** - The State in the territory of which the consignment is finally to be unloaded from the aircraft.

1.4 Acronyms

- **AN 18** – The current edition of the Annex 18 to the Convention on International Civil Aviation, The Safe Transport of Dangerous Goods
- **ANC** – ICAO's Air Navigation Commission
- **AOCR** – Air Operator Certificate Requirements
- **CAAT** – The Civil Aviation Authority of Thailand
- **CAB** – Civil Aviation Board
- **COMAIL** – Company mail
- **COMAT** – Company material
- **DGP** – Dangerous Goods Panel
- **FDG** – Used in checklists to mean "Finding"
- **IAEA** – The International Atomic Energy Agency
- **IATA DGR** – The current edition of the International Air Transport Association (IATA)'s document title "Dangerous Goods Regulations"
- **ICAO** – International Civil Aviation Organization
- **ICAO TI** – The current edition of the International Civil Aviation Organization's Technical Instruction for the Safe Transport of Dangerous Goods by Air.
- **ICAO TI SUP** – The current edition of the International Civil Aviation Organization Supplement to the Technical Instruction for the Safe Transport of Dangerous Goods by Air.
- **MSDS** – Material Safety Data Sheet (Synonyms: Safety Data Sheet (SDS) and Product Safety Data Sheet (PSDS))
- **NOTOC** – Notification to Pilot-in-command
- **N/A** – Not applicable
- **N/C** – Not checked
- **RCAAT No.4** - Regulations of the Civil Aviation Authority of Thailand No.4 "Transport of Dangerous Goods by Air"
- **SARPs** – Standards and recommended practices
- **UN** – United Nation

2. Legislative Framework

2.1 International Regulations

2.1.1 ICAO, Annex 18 to the Convention on International Civil Aviation

(1) The Convention on International Civil Aviation (also known as Chicago Convention) was signed on 7 December 1944 by 52 States. Pending ratification of the Convention by 26 States, the Provisional International Civil Aviation Organization (PICA) was established. It functioned from 6 June 1945 until 4 April 1947. By 5 March 1947 the 26th ratification was received. ICAO came into being on 4 April 1947. In October of the same year, ICAO became a specialized agency of the United Nations linked to Economic and Social Council (ECOSOC). The Convention on International Civil Aviation set forth the purpose of ICAO in the preamble:

- "WHEREAS the future development of international civil aviation can greatly help to create and preserve friendship and understanding among the nations and peoples of the world, yet its abuse can become a threat to the general security; and
- WHEREAS it is desirable to avoid friction and to promote that co-operation between nations and peoples upon which the peace of the world depends;
- THEREFORE, the undersigned governments having agreed on certain principles and arrangements in order that international civil aviation may be developed in a safe and orderly manner and that international air transport services may be established on the basis of equality of opportunity and operated soundly and economically;
- Have accordingly concluded this Convention to that end."

(2) The Convention is supported by nineteen annexes containing standards and recommended practices (SARPs). The annexes are amended regularly by ICAO.

(3) Annex 18 was developed to respond to a demand by Contracting States for an internationally agreed upon set of provisions addressing the transportation of dangerous goods by air. These provisions are based upon the Recommendations of the United Nations Committee of Experts on the Transport of Dangerous Goods and the Regulations for the Safe transport of Radioactive Material of the International Atomic Energy Agency. All amendments to Annex 18 are approved by the Council following a recommendation from the ICAO Dangerous Goods Panel (DGP) and the Air Navigation Commission (ANC).

2.1.2 The International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air contain the detailed technical material needed to support the broad provisions of Annex 18 providing a fully comprehensive set of international regulations. The ICAO TI can also be amended by the Council, following a recommendation from the Dangerous Goods Panel (DGP) of the Air Navigation Commission (ANC) and consultation with States. The

Standard and Recommended Practices are contained in the Annex 18 and the Technical Instructions contain all the detailed instructions for the safe transport of dangerous goods by air. The Technical Instructions for the Safe Transport of Dangerous Goods by Air are published biennially.

2.1.3 The International Civil Aviation Organization's Supplement to the Technical Instructions for the Safe transport of Dangerous Goods by Air

The Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air provides information that is primarily of interest to States. Certain dangerous goods, which are normally forbidden (identified in Table 3-1 of the TI by Special Provisions such as A-1 or A-2), may be specifically authorized for air transport by approval of the appropriate national authority. The Supplement to the TI provides information to State for the processing of approvals or exemptions. The Supplement to the Technical Instructions for the Safe transport of Dangerous Goods by Air is published biennially.

2.2 National Regulations

2.2.1 Regulation on the Civil Aviation Authority of Thailand No.4 the Transport of Dangerous Goods by Air (RCAAT No.4) and Air Operator Certificate Requirement (AOCR)

By virtue of Section 6/1 of the Air Navigation Act B.E. 2497 (1954) and Section 21 of the Air Navigation Act B.E. 2497 (1954), amended by the Air Navigation Act (No. 11) B.E. 2551 (2008), the Director General of The Civil Aviation Authority of Thailand authorised by the Civil Aviation Board at the 5/2559 meeting on 10 October 2559 (21016) issues the Regulation in compliance with Annex 18 to the Convention on International Civil Aviation 1944 — The Safe Transport of Dangerous Goods by Air, in order for aircraft registrants, air operators, personnel, and public aerodrome Operators to operate safely.

2.3 Reference Manuals

2.3.1 Whilst this procedures manual only refers to documents from the International Civil Aviation Organization, in order to carry out some of the inspections identified, it may be necessary to use.

- The International Air Transport Association's "Dangerous Goods Regulations" (IATA DGR), published annually which is commonly used by operators.

2.3.2 The above references must reflect as a minimum, all the ICAO Technical Instructions provisions.

3. Dangerous Goods Inspector and Training

3.1 Dangerous Goods Inspector Qualification

Refer to FOIM V.1 Chapter 3

3.2 Duties and Responsibilities

Refer to FOIM V.1 Chapter 3

3.3 Training

Refer to the CAAT Training Manual (CAAT- HRD-TNM).

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4. Audits and Inspection Policy

4.1 Inspector Conduct

- 4.1.1 The inspection policy and procedures were established according to the requirements of Annex 18 to the Chicago Convention, RCAAT No.4 and AOCR to ensure all operators under controlled by CAAT are fully compliance with the Dangerous Goods Regulations of the Kingdom of Thailand.
- 4.1.2 There are numbers of aspects related to the transport of dangerous goods by air to verify during an inspection. The inspection needs to confirm that the operator has sufficient resources for the intended operation and has identified these individuals who have specific responsibilities and has made them aware of their responsibilities. It will ensure that reference manuals are up-to-date and available to staff who will need to use them. The manner of handling and storing dangerous goods in airport premises is checked to ensure there are no practices which could lead to accidental damage of packages or put staff at risk and the method of loading and stowage on aircraft is checked to ensure it is carried out according to the requirements.
- 4.1.3 While not all destinations should be expected to be inspected during an audit, a sample of the operations should nevertheless be looked at.

4.2 Audits versus Inspections

- 4.2.1 The main difference between a dangerous goods audit and a process inspection is that an audit is an in-depth inspection of an air operator's operation to verify conformance with current regulations, while an inspection will examine a specific item, function, and procedure component or part of the company's operation either routinely or for specific reason to verify compliance with regulations.

4.3 The Recommended Audit/Inspection Areas

- 4.3.1 Audits and Inspections may be performed at the following facilities:
- Operator or handling agent's cargo facilities (e.g. acceptance, Storage, pallet build);
 - On the ramp;
 - In Passenger Terminals;
 - Security check-points;
 - Shippers premises;
 - Freight Forwarders premises;
 - Designated Postal Operator's premises.
 - Duty free premises.
- 4.3.2 A frequency of audit and inspection shall be considered according to the scale and nature of operation. In addition, audits of procedures include visiting operators or handling agents' premises, as appropriate.

4.4 Result of Audit/Inspection

- 4.4.1 The result of a dangerous goods audit or inspection shall be recorded in writing format as evidence. This record must be sufficiently comprehensive to identify any deficiencies, since these will need to be identified in a request to the operator to act remedy them. The request to the operator should include a time scale for taking remedial action.
- 4.4.2 If during an audit or inspection an inspector discovers some violation, such as negligence, deliberate act, systemic failure etc. shall be considered in determining an appropriate course of action.

4.5 Frequency of inspections

- 4.5.1 The Technical Instructions does not specify the frequency of such inspections. Therefore, whether or not operators hold dangerous goods approval, CAAT may consider annually inspecting all aspects related to dangerous goods of an operator engaged in the carriage of dangerous goods, both domestically and internationally. Operators choosing not to transport dangerous goods as cargo may be inspected at a less frequent. The inspections are planned on the basis of a risk assessment exercise so that the aspects of the operations that involve the greatest risk receive more frequent attention. The methodology for operational risk profile can be found in section 9.7, the OPSM Risk-Based Methodology and Surveillance Plan.

4.6 Random Inspections

- 4.6.1 Apart from scheduled surveillance inspections and regulatory audits, it is also decided to carry out the random inspection. Random inspections are unplanned checks and will be carried out to verify the activity of internal audit system of any organization and ensuring the continued compliance of previous CAAT audit/surveillance findings.

5. Initial Dangerous Goods Inspection Procedures

5.1 Initial Process Inspection

5.1.1 To obtain approval to transport dangerous goods, the operator must:

- (1) Establish and maintain a Dangerous Goods training programme, approved by CAAT, for all personnel involved and demonstrate to CAAT that adequate training has been given to all personnel;
- (2) Ensure that arrangements have been made to ensure any organization undertaking any activity on behalf of the operator (e.g. handling agents) complies with the requirements;
- (3) Ensure that the operations manual or other staff instructions contain the required information;

5.1.2 The initial inspection will include:

- Review of the operator application to transport dangerous goods under normal circumstances and that all areas identified at 5.1.1 are satisfactory
- Approval of operations manual and/or other appropriate manuals
- Approval of dangerous goods training programmes approvals inspection
- Issuance of exemption for special circumstances

5.2 Application for an Approval to transport of Dangerous Goods

5.2.1 An important element of the oversight of the transport of dangerous goods is the granting of approvals and exemptions for the transport of dangerous goods under normal and specialized circumstances.

5.2.2 The aims of granting approvals and exemptions are to exercise control over the transport of dangerous goods and to aid enforcement activities.

5.2.3 Approval for the transport of dangerous goods under normal circumstances should be granted to the operators by the State of the operator (i.e. those goods which the Technical Instructions do not indicate as forbidden for transport on passenger aircraft or both passenger and cargo aircraft) are granted to operators whose principle place of business is Thailand.

5.2.4 The authorization should be granted only once the operator has demonstrated that procedures are in place to ensure the aspects identified at 5.1.1 are adequately addressed.

5.2.5 An Operator planning to transport Dangerous Goods under normal circumstances should submit an application containing:

- General information on the identity and contact information of the operator;

- Content of the Dangerous Goods Operation's Manual, (Chapter 8) and
- Content of the Dangerous Goods Training Programmes for each category of personnel (Chapter 9)

**Examples of all information required from the operator are found in
Document and Records Management System (DRMS)**

CAAT-OPS-AOCFM-401 – Application for Approval to Carry Dangerous Goods by Air (THAILAND Air Operator)

CAAT-OPS-CLDGI-301 – OPS - Operations Manual's Dangerous Goods Segment and Dangerous Goods Manual

CAAT-OPS-DG-401– Application for Approval of Dangerous Goods Training Program

CAAT-OPS-CLDGI-302 OPS- Approval of Dangerous Goods Training Program Checklist

CAAT-OPS-CLDGI-305- OPS- Approval of Dangerous Goods Training Program Checklist (for Transition Period)

CAAT-OPS-CLDGI-404- OPS- Approval of Dangerous Goods Training Program Checklist (for Transition Period)

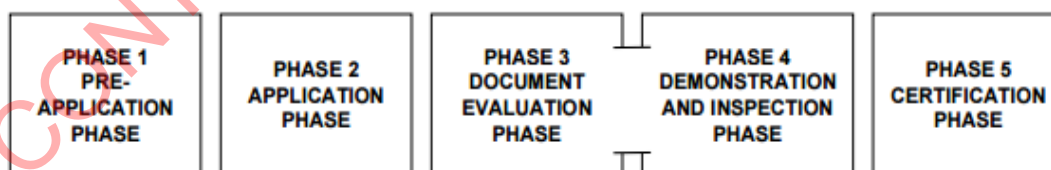
6. Authorization of AOC: Dangerous Goods Section

6.1 General

- 6.1.1 Dangerous Goods Inspector (DGI) will nominated members from the Flight Operations Standards Department (OPS), Dangerous Goods Division (DG) to compose a core group of experts who will be involved in the process of evaluating an air operator for the issuance of an AOC.
- 6.1.2 DGI will conduct joint inspections and submit his/her reports/checklists to Principle Operation Inspector (POI). In the event that separate inspections are carried out due to unforeseen circumstances, a follow-up internal meeting with all inspectors concerned will be carried to ensure proper coordination.
- 6.1.3 Therefore, at the commencement of the certification process, OPS manager will appoint a senior flight operation inspector as the Principal Operation Inspector (POI) and POI will establish a certification team, whose may be a Dangerous Goods inspector to perform the inspection of dangerous goods. The applicant will be informed that the POI will be responsible for coordinating all aspects of the certification process and will be the focal point for dealing with all matters between the applicant and CAAT. The safety oversight workload of the Lead Inspector and team members may need to be adjusted in order that enough time is provided for the certification of an air operator.
- 6.1.4 In the meantime, DGIM Chapter 7 shall be complied if operator apply for permission to send or carry dangerous goods or animals on board aircraft.

6.2 AOC Process for Dangerous Goods

There are five phases in the air operator certification process. Each phase is described in sufficient detail to provide a general understanding of the entire approval process. The five phases are:



6.3 Phase 1 Pre-Application Phase

- 6.3.1 As far in advance as possible of the start of operations, a prospective operator should contact Flight Operations Standards Department (OPS), the Civil Aviation Authority of Thailand (CAAT), and inform its content to apply for an AOC whether or not to carry dangerous goods as cargo. A meeting shall be planned with CAAT personnel. During this initial meeting, only basic information and general aspects of certification requirements will be discussed. If the applicant intends to proceed and initiate the certification process, CAAT will provide a standard information

package in regard to dangerous goods aspect that has been developed for applicants and also available to download via online channel from website: www.caat.or.th, the applicant will be informed about the pre-application package, which is the means to obtain CAAT Dangerous Goods Regulations, related Guidance Materials and Forms to be used. Described as follows:

1) Regulations and Guidance Materials:

- Air Navigation ACT B.E. 2497
- Air Operator Certificate Requirement (AOCR)
- Notification of The Civil Aviation Authority of Thailand on Classification and List of Dangerous Goods which may endanger the safety of the aircraft or persons on board aircraft B.E. 2562
- Notification of The Civil Aviation Authority of Thailand on Classification and List of Dangerous Goods which may endanger the safety of the aircraft or persons on board the aircraft on. 2 B.E. 2564
- Notification of The Civil Aviation Authority of Thailand on rules and conditions for permission to send or carry dangerous goods or animals on board aircraft B.E. 2558
- Regulation of The Civil Aviation Authority of Thailand no. 4 the Transportation of Dangerous Goods by Air B.E. 2559
- The Civil Aviation Authority of Thailand Requirement no. 22/2562 on “Reporting of Civil Aviation Occurrences”
- Regulation on Approval of Exemption to Transport Dangerous Goods under special circumstance
- Guidance Material for the Preparation of Dangerous Goods Section in the Operations Manual – Aeroplane / Helicopter

2) Forms: (refers to Document and Records Management System (DRMS))

- CAAT-OPS-AOCFM-401 – Application for Approval to Carry Dangerous Goods by Air (THAILAND Air Operator)
- CAAT-OPS-CLDGI-301 – OPS - Operations Manual’s Dangerous Goods Segment and Dangerous Goods Manual
- CAAT-OPS-DG-401 – Application for Approval of Dangerous Goods Training Program
- CAAT-OPS-DG-402– Dangerous Goods Occurrence Report
- CAAT-OPS-DG-403 – Application for Exemptions/Approvals to Carry Dangerous Goods by Air
- CAAT-OPS-CLDGI-305- OPS- Approval of Dangerous Goods Training Program Checklist (for Transition Period)
- CAAT-OPS-CLDGI-404- OPS- Approval of Dangerous Goods Training Program Checklist (for Transition Period)
- OPS-AOCFM-111 – Pre-Application Phase

- 6.3.2 A meeting should be arranged by POI and will be attended by assigned certification team and the key management personnel of the applicant. The applicant should be prepared to discuss, in general terms, all aspects of the proposed operations.

The pre-application meeting will take place prior to the online formal AOC application. The meeting will be arranged by POI and attended by certificate team. This meeting may be held at the CAAT office or other location if agreed upon.

- 6.3.3 The DGI shall ensure an application package involving with dangerous goods for delivery at the pre-application meeting should be designed to assist the applicant in the preparation of a formal application for certification.

- 6.3.4 At this stage, **POI** shall also appoint Dangerous Goods Inspectors for Certification Team. The inspector's name lists to POI are proposed by Head of Dangerous Goods Division. The number of DGI depend on the complexity, size and nature operation of applicant. The applicant shall coordinate dangerous goods aspects of the development of the required documentation with DGI, prior to submission of the formal application.

- 6.3.5 During the pre-application phase and throughout the certification process, the operator will have to prepare documents and manuals for the DGI's evaluation and approval or acceptance. The operator is encouraged to informally co-ordinate drafts of these documents with the POI and other inspectors assigned to the certification project. Time spent on informal co-ordination can significantly reduce the workload for the operator and the inspectors once the formal application is submitted. The inspectors will give advice and guidance; however, the actual development of acceptable documents and manuals is always the responsibility of the prospective operator.

- 6.3.6 The importance of a thorough and careful preliminary assessment of the application cannot be overemphasized. The more thoroughly the applicant's competence is established at this stage, the less likelihood there will be of having serious problems in the document evaluation and the demonstration and inspection phases preceding certification or during the course of subsequent operations. Analysis of the pre-application assessment will indicate either that it is acceptable on a preliminary basis or that it is unacceptable. If in the latter case the deficiencies are such that they can be rectified, the applicant may be given a reasonable opportunity to resubmit its pre-application; otherwise the applicant will be advised to withdraw the intent to apply for AOC.

6.4 Phase 2 Formal Application Phase

- 6.4.1 In Dangerous Goods Section, DGI will cursory review the application package to determine that it contains the required dangerous goods information as required.

Specific authorization for the safe transport of dangerous goods by air shall be granted by CAAT the flight operation standards department upon receiving application from an air operator and who has met the requirements of CAAT Dangerous Goods Requirements.

Form to be used: (refer to Document and Records Management System (DRMS))

- OPS-AOCFM-121 - AOC Formal Application Phase

- 6.4.2 If the application is found incomplete or erroneous, DGI shall inform the applicant, providing details of the deficiencies and advice on the resubmission of the formal application. If the dangerous goods information in the formal application package is considered acceptable by DGI, the POI will schedule a formal application meeting with the applicant, the application should be of sufficient quality to allow any omission, deficiency or open question to be resolved during the application meeting.

The formal application for an AOC, accompanied by the required documentation, shall be submitted in the manner prescribed in CAAT AOCR as appropriate.

- 6.4.3 DGI should attend the formal application meeting with certificate team and key management personnel of the applicant. The purpose of the meeting is to discuss the application and resolve omissions, deficiencies or answer questions from either party. For example, this meeting may be used to plan preliminary dates regarding the schedule of events or to ensure the applicant understands the certification process. This meeting should also be used to reinforce good communication and working relationships between the CAAT and the applicant.

- 6.4.4 The submission of a formal application is interpreted by CAAT to mean that the applicant is aware of the regulations applicable to the proposed operation, is prepared to show the method of compliance and is prepared for an in depth evaluation, demonstration and inspection related to the required manuals, training programmes, operational and maintenance facilities, aircraft, support equipment, record keeping, dangerous goods, security programme, flight crew and key management personnel, including the functioning of the administrative and operational organization.

- 6.4.5 Subsequent to the Formal Application meeting and subject to successful acceptance of the application package, the CAAT POI shall issue formal application Acceptance letter to applicant.

6.5 Phase 3 Document Evaluation Phase

- 6.5.1 After the application has been accepted, DGI will begin a thorough evaluation dangerous goods information of company manuals and documents which required by regulations and will endeavor to complete these evaluations in accordance with the operator's schedule of events.

- 6.5.2 If a manual or document is incomplete or deficient, or if non-compliance with the regulations or procedures does not reflect a safe operating practice, the manual

or document will be returned for corrective action and that will affect the application completion date. If the manuals and documents are satisfactory, the List of Effective Pages will be stamped indicating approval.

6.5.3 The set of documents and manuals should be complete and must, satisfy CAAT's requirements before the inspection phase can begin. However, the review of documents and manuals will continue until the certification phase. Indeed, the inspection phase may reveal the need for some operational changes, which in turn requires amendment of those documents and manuals.

6.5.4 All related manuals to be reviewed by DGI for approval, such as Operation Manual, Dangerous Goods Manual, Dangerous Goods Training Manual, Cargo Operation Manual and Ground Operation Manual as applicable, and other relevant if there is any, in order to ensure compliance with CAAT's requirements and Dangerous Goods regulations by using forms as follows:

- CAAT-OPS-CLDGI-301 – OPS - Operations Manual's Dangerous Goods Segment and Dangerous Goods Manual Checklist for operator's Operation Manual or Other manuals
- CAAT-OPS-DG-401– Application for approval of dangerous goods Training Program for operator's Dangerous Goods Training Manual
- CAAT-OPS-CLDGI-302– OPS - Approval of Dangerous Goods Training Programs; Part I & II for operator's Dangerous Goods Training Programmes Approval
- CAAT-OPS-CLDGI-305-OPS-Cargo Operations Document Inspection
- CAAT-OPS-CLDGI-305- OPS- Approval of Dangerous Goods Training Program Checklist (for Transition Period)
- CAAT-OPS-CLDGI-404- OPS- Approval of Dangerous Goods Training Program Checklist (for Transition Period)

When discrepancies are found during the document evaluation process, DGI will inform applicant by using Safety Oversight Management IT System.

6.5.5 To ensure that the certification process and procedure are in accordance with the schedule of events, DGI may request the meeting with the applicant for clarifying the discrepancies.

- When all discrepancies are corrected, DGI will inform POI and OPS manager for his/her agreements before submitting through the Director General of CAAT for consideration of granting an approval.
- OPS-AOCFM-131 Document Evaluation Phase shall be utilized to confirm the acceptability of the documents provided by the applicant. For many of the items contained in this job aid, inspectors are to complete utilizing the more detailed job aids.

6.5.6 Meeting during document evaluation phase

This meeting may be attended by the proposed applicant's Dangerous Goods Coordinator or key personnel and DGI. During the meeting, DGI or dangerous goods division representatives shall be available to meet with the applicant's management and will discuss upon discrepancies in order to develop an action planning order to ensure the document evaluation proceeds in a timely and coherent manner.

6.5.7 Operations manual's Dangerous goods Segment and related manuals

The arrangements for the administration and control of the operations manual's dangerous goods segment should have already been evaluated during the cursory review in the formal application phase of the certification process. Prior to initiating the ground or flight operations phase of the inspection, a detailed review of the dangerous goods section in operations manual will be completed by DGI. The operations manual should be provided, in a clear and concise manner, the necessary policy guidance and instructions to the applicant's personnel on how operations are to be conducted. The operations manual should not be contained information that is not relevant to the proposed operations. Thus, at the outset, a determination should be made as to the adequacy of the operations manual or other related manuals. The subsequent ground and flight operational inspections will determine the capability of the applicant's organization to effectively carry out the policies and instructions set forth in the operations manual.

Note: Chapter 8 must be applied

6.5.8 In connection with the detailed review of the operations manual's dangerous Goods segment and other related manuals, DGI will ascertain that effective procedures have been established by the applicant for the revision, distribution and use of the operations manual. Each manual should be numbered and issued according to a specific distribution list, and each holder made responsible for its prompt and accurate update. The distribution list should contain all operations personnel and others requiring the information therein for proper performance of their duties. Those parts of the manual required to be carried on board each aircraft should be designed for convenient use and all parts should permit ready and accurate reference.

6.5.9 Dangerous goods manual (if any)

Note: Chapter 8 must be applied

6.5.10 Dangerous Goods Training Programmes

Note: Chapter 9 must be applied

6.6 Phase 4 Demonstration and Inspection Phase

6.6.1 CAAT regulations require an operator to demonstrate its ability to comply with regulations and safe operating practices before beginning actual revenue operations. These demonstrations include actual performance of activities and/or operations while being observed by certificate team. This includes on-site evaluations of aircraft maintenance equipment and support facilities, inspection of training

programmes and training facilities. During these demonstrations and inspections, the CAAT evaluates the effectiveness of the policies, methods, procedures, and instructions as described in the operator's manuals and other documents. Emphasis is placed on the operator's management effectiveness during this phase. Deficiencies will be brought to the attention of the operator and corrective action must be taken before a certificate is issued.

- 6.6.2 The demonstrations are to prove that the applicant has an adequate organization, method of control and supervision of flight operations, training programmes that are consistent with the nature and extent of operations specified including ground handling and operations, continuing airworthiness management and maintenance arrangement, security measures and handling of Dangerous Goods.
- 6.6.3 Both of Dangerous Goods Carrier and Non-Dangerous Goods Carrier shall ensure the compliance with appropriated regulatory requirements and operator's SOP.
- 6.6.4 To complete an audit or site inspection process, the DGI is required to conduct as follows:
- DGI leader and DG team will request the "pre – audit meeting" prior the phase 4.1 in order to discuss about all approved related manuals. At the phase, the DG Certification
 - DGI will design for an audit work scope concerning dangerous goods.
 - After designing an audit work scope, DGI shall consequently conduct the site audit by using the Dangerous Goods Audit Check Lists ;
 OPS-CLDGI-401 – OPS - Dangerous Goods Site Audit (For DG Approval Operator)
 OPS-CLDGI-402 – OPS - Dangerous Goods Site Audit (For Non-DG Approval Operator).
 - The evidence collected from audit/inspection can be recorded in OPS-DG-411 'Sample Evidence Record'
 - When discrepancies are found during the document evaluation process, DGI will inform applicant by using Safety Oversight Management IT System.
 - The applicant shall complete the Corrective Action Plan (Root Cause Analysis, Short term Corrective Action, Long term/System Wide Corrective Action and Method to justify or evaluate the effectiveness of corrective action plans (Specify frequency and how documentation will be retained) and the DGI will then consider whether or not accept the CAP proposed by an air operator
 - The air operator will subsequently be informed if their CAP is adequate or acceptable
 - The DGI will finally inform POI/OPS Manager after all discrepancies are closed (Demonstration and Inspection Phase OPS-AOCFM-141 shall be utilized to confirm completion of AOC Demonstration and Inspection Phase).

Although the document evaluation and the demonstration and inspection phases have been discussed separately in this manual, these phases overlap, or are accomplished simultaneously in actual practice.

6.7 Phase 5 Certification Phase

- 6.7.1 After the document compliance and the demonstration and inspection phases have been completed satisfactorily, POI will prepare an Air Operator Certificate which contains authorizations, limitations, and provisions specific to an operator's operation. The operator must acknowledge receipt of these documents.
- 6.7.2 The certification phase follows the satisfactory completion of all the previous phases. It begins when the CAAT takes the necessary administrative action to issue the AOC and the associated certification requirements such as Operations, Airworthiness, Dangerous Goods, Economic and security have been completed in a satisfactory manner and after assurance that the applicant will have to comply with the applicable requirements and is fully capable of fulfilling its responsibilities and conducting a safe and efficient operation. DGI must ensure all findings from Phase 3 and Phase 4.1 are completely closed.
- 6.7.3 The certificate holder is responsible for continued compliance with CAAT's regulations and the authorizations, limitations, and provisions of its certificate. As a certificate holder's operation and procedures changes, relevant manuals will have to be amended accordingly. The process for amending manuals is similar to the certification process. In some cases, it may be a less complex procedure depending on the subject of the amendment. When certification team review the manuals for CAAT approval, DGI should check against the findings that all of the evidence in the record has been included in the manuals. DGI shall conduct review for the dangerous goods section in operation manual and relevant manuals concerned with dangerous goods information that had been reviewed in phase 3.
- 6.7.4 Subsequent to the issuance of an AOC, DGI will ensure the form covers the special approvals. The dangerous goods approval on the form must be identified and put in the Operations Specification (CAAT-OPS-AOCFM-153) and coordinate with POI in order to prepare the AOC document and Ops Specs document prior send the draft copies to Flight Operations Manager or Project Manager for review, DGI will coordinate with POI to prepare a surveillance plan and the CAAT's inspectors will be responsible for continued surveillance and for conducting periodic inspections as contained in Chapter 10, to ensure the operator's continued compliance with CAAT's regulations, authorizations, limitations and provisions of its AOC and operations specifications. These periodic inspections are components of a continuing safety oversight programme.
- 6.7.5 Final recommendation for the issue or denial of an AOC or Operations Specifications is subject to the agreement of all Flight Operations, Airworthiness, Dangerous Goods and Inspectors from other areas concerned (e.g. Cabin Safety, Security).

DGI will inform POI the final closure using Form Certification Phase OPS-AOCFM-151 Form shall be utilized and completed to confirm prior to recommending issuance of the AOC and associated operations specification.

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7. Permission Procedures for Carriage of Dangerous Goods

7.1 Permission for the Transport of Dangerous Goods

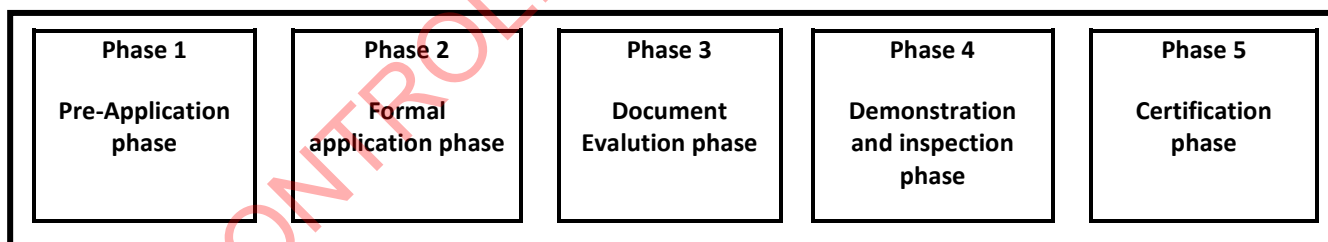
7.1.1 The Thai AOC holders, dangerous goods can only be carried according to the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (or the IATA DGRs), irrespective of whether the flight is wholly or partly within or wholly outside the Kingdom of Thailand. An approval must be granted by the Civil Aviation Authority of Thailand (CAAT) before dangerous goods can be carried on an aircraft. The foreign AOC holders on the other hand, dangerous goods shall not be carried in and out the Kingdom of Thailand, unless the permit is issued by CAAT and in accordance with any conditions which may be imposed.

7.1.2 Therefore, the permit issued by CAAT applies to all civil aircraft flying to, from or over the Kingdom of Thailand and to the Thai registered aircraft wherever they may be. This permit, if given, is subject to air operators' compliance with ICAO Annex 18 and the latest edition of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air.

7.2 Dangerous Goods Permission Procedures

7.2.1 Thai AOC Holders

There are five phases in the dangerous goods approval process. Each stage is described in sufficient detail to provide a general understanding of the entire approval process. The five stages are:



7.2.1.1 1. Pre-Application phase

As far in advance as possible for the start of operations, Thai AOC holders who wish to carry dangerous goods as cargo should contact Flight Operation Standards Department, Dangerous goods division (DG), the Civil Aviation Authority of Thailand (CAAT) to discuss upon basic information and general aspects of approval requirements. Meeting arrangement can be done via ops_dg@caat.or.th or 02-568-8838 -39. The pre-application meeting will be attended by Dangerous Goods Inspectors and team, which will be held at CAAT office. The purpose of the pre-

application meeting is to ensure that applicant or operator has sufficient knowledge of the appropriate regulations and requirements as well as critical approval information to the operator and also introduce e-service system that is using for communicating and updating task status to applicant.

CAAT dangerous goods regulations and related guidance materials and forms to be used are described as follows:

a) Regulations and Guidance Materials:

- Air Navigation Act B.E. 2497
- Air Operator Certificate Requirement (AOCR)
- Notification of the Civil Aviation Authority of Thailand on Classification and List of Dangerous Goods which may endanger the safety of the aircraft or persons on board aircraft B.E. 2562
- Notification of The Civil Aviation Authority of Thailand on Classification and List of Dangerous Goods which may endanger the safety of the aircraft or persons on board the aircraft no. 2 B.E. 2564
- Notification of The Civil Aviation Authority of Thailand on rules and conditions for permission to send or carry dangerous goods or animals on board aircraft B.E. 2558
- Regulation of The Civil Aviation Authority of Thailand no. 4 the Transportation of Dangerous Goods by Air B.E. 2559
- The Civil Aviation Authority of Thailand Requirement no. 22/2562 on "Reporting of Civil Aviation Occurrences"
- Regulation on Approval of Exemption to Transport Dangerous Goods under special circumstance
- Guidance Material for the Preparation of Dangerous Goods Section in the Operations Manual - Aeroplane / Helicopter

b) Forms

- CAAT-OPS-AOCFM-401 – Application for Approval to Carry Dangerous Goods by Air (THAILAND Air Operator)
- CAAT-OPS-CLDGI-301 – OPS - Operations Manual's Dangerous Goods Segment and Dangerous Goods Manual
- CAAT-OPS-DG-401– Application for Approval of Dangerous Goods Training Program
- CAAT-OPS-DG-403 – Application for Exemptions/Approvals to Carry Dangerous Goods by Air
- CAAT-OPS-CLDGI-305- OPS- Approval of Dangerous Goods Training Program Checklist (for Transition Period)
- CAAT-OPS-CLDGI-404- OPS- Approval of Dangerous Goods Training Program Checklist (for Transition Period)

7.2.1.2 2. Formal application Phase

At this stage, the operators shall submit the application and support documents to apply for a permission to carry dangerous goods on board aircraft to the Flight Operation Standards Departments, Dangerous goods division (DG), the Civil Aviation Authority of Thailand (CAAT) through e-service system and then manager of flight standards operation department will assign task to designed dangerous goods inspectors.

As a condition of the permission issued to an operator to carry dangerous goods under 'Notification of the Civil Aviation Authority of Thailand on rules and conditions for permission to send or carry dangerous goods and animals on board aircraft B.E. 2558' for Thai operators engaged in commercial operation must have a dangerous goods manual (DGM) as well as a dangerous goods training programme as it deems necessary for aviation safety. This applies even if the only dangerous goods are those personal effects that are permitted for passengers and crew.

The DGM needs to be relevant to the processes and procedures of the operator and its employees and not a generic off-the shelf version. There are reputable DGM producers who will tailor a manual to suit the needs of the operator. The DGM needs to be a living document which should be reviewed annually, preferably in November/December each year against the ICAO TIs or other relevant up-to-date industry document and amended as required.

Training Programme on the other hand needs to provide a mean of evaluating the knowledge requirements for a specific of a task required to be performed by an operator's employee involved in handling, offering for transport or transporting of dangerous goods as it relates to their assigned duties. The operator's initial and recurrent dangerous goods training programme for all staff shall be reviewed and approved by CAAT. The inspection is to confirm that training meets the requirements of the Technical Instruction. Depending on the size of the operator and the responsibilities of its staff.

Training Programme on the other hand needs to provide a mean of evaluating the knowledge requirements for a specific of a task required to be performed by an operator's employee involved in handling, offering for transport or transporting of dangerous goods as it relates to their assigned duties. The operator's initial and recurrent dangerous goods training programme for all staff shall be reviewed and approved by CAAT. The inspection is to confirm that training meets the requirements of the Technical Instruction. Depending on the size of the operator and the responsibilities of its staff.

More information about training programme can be found at 'CAAT-OPS-DG-401 – Application for Approval of Dangerous Goods Training Program.' An application for permission to carry dangerous goods on board aircraft shall be submitted to the Dangerous Goods Division (DG), the Civil Aviation Authority of Thailand (CAAT) at least 90 working days prior to the proposed flight date (for first issuing) and at least 45 working days prior to the expiry date of the permission.

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7.2.1.3 3. Document Evaluation phase

After operator's application, along with DGM and training programme manual have been accepted by OPS, OPS manager will then assign Dangerous Goods Inspection Division to have a thorough assessment whether an operator's DGM and training programme manual are appropriate and meet with both CAAT's requirements and Technical Instruction standards.

If a manual or document is incomplete or deficient, or if non-compliance with the regulations or procedures does not reflect a safe operating practice, the manual or document will be returned for corrective action and that will affect the application completion date. If the manuals and documents are satisfactory, the List of Effective Pages will be stamped indicating approval.

The set of documents and manuals should be complete and must satisfy CAAT's requirements before the site inspection stage can begin. However, the review of documents and manuals will continue until the permission issuing stage. Indeed, the inspection stage may reveal the need for some operational changes, which in turn requires amendment of those documents and manuals.

The documents and manuals should be presented for consideration not less than 60 days prior to the commencement of the proposed operations to avoid delay.

Forms to be used as follows:

- CAAT-OPS-CLDGI-301 – OPS - Operations Manual's Dangerous Goods Segment and Dangerous Goods Manual
- CAAT-OPS-DG-401– Application for Approval of Dangerous Goods Training Program for operator's Dangerous Goods Training Manual

When all discrepancies are corrected, DGI will inform Head of Dangerous Standards Division (DG) and send the result to Manager of Flight Operations Standards department via e-services system, for his/her consent. After all related manuals are approved, OPS manager will appoint dangerous goods inspectors' team for site inspection stage. DGI will inform applicant by using Safety Oversight Management IT System.

Note: Chapter 8 shall be applied

7.2.1.3.1 Dangerous Goods Training Programmes

Note: Chapter 9 must be applied

7.2.1.4 4. Demonstration and inspection phase

CAAT requires an operator to demonstrate its ability to comply with regulations and safe operating practices before beginning actual carrying dangerous goods as cargo flight operation. These demonstrations include actual performance of activities and/or operations while being observed by CAAT's dangerous goods

inspector from Dangerous goods division (DG) which appointed by OPS Manager to conduct inspections in order to evaluate an air operator for the issuance of 'a permission to send or carry dangerous goods or animals on board aircraft'. The number of team members depend on the complexity, size and nature operation of applicant.

- 7.2.1.4.1 Since the operator had paid inspection fee accordance with CAAT regulation. The dangerous goods inspector will set up team and assign task to inspect air operator. Inspections are mainly carried out at cargo facilities, on the ramp, in passenger terminal and, occasionally, other places such as security check points, at a frequency commensurate with the scale and nature of the operation. In addition, audits of procedures include visiting operator's handling agent premises as appropriate. During these demonstrations and inspections, the dangerous goods inspectors evaluates the effectiveness of the policies, methods, procedures, and instructions as described in the operator's manuals and other documents. Emphasis is placed on the operator's management effectiveness during this phase. Deficiencies will be brought to the attention of the operator and corrective action must be taken before the permission is issued.

The list of inspections should include but not limited to as follows:

- a) Maintenance personnel training
- b) When all facilities will be ready for CAAT inspection
- c) Ground handling staff, dispatcher training.
- d) Dangerous Goods Training
- e) When each of the required manuals will be ready for evaluation
- f) The dates of proposed assessments of training staff and other person subject to CAAT approval. The dates should be logical in sequence and provide time for CAAT to review, inspect and approve of each item.

To complete an audit or site inspection process, the Dangerous Inspector Team is required to conduct as follows:

- Dangerous Goods Inspectors team will request the "pre – audit meeting" prior the state 4. Site Inspection Stage in order to discuss about all approved related manuals
- Team leader will be prompted to assign team members and design upon for an audit work scope.
- After designing an audit work scope, the Dangerous Goods Inspectors Team shall consequently conduct the site audit by using the Dangerous Goods Audit Check List forms of OPS-CLDGI-401–OPS - Dangerous Goods Site Audit (for DG Approval Operator).

- The evidence collected from audit/inspection can be record in OPS-DG-411 'Sample Evidence Record'
- In the case of discrepancies are found, the Dangerous Goods Inspectors Team will inform the applicant by using Safety Oversight Management IT System DGI will inform applicant by using Safety Oversight Management IT System.
- The applicant shall complete the Corrective Action Plan (Root Cause Analysis, Short term Corrective Action, Long term/ System Wide Corrective Action and Method to justify or evaluate the effectiveness of corrective action plans (Specify frequency and how documentation will be retained) and the Dangerous Goods Inspectors Team Leader will then consider whether or not accept the CAP proposed by an air operator
- The air operator will subsequently be informed if their CAP is adequate or acceptable
- The Dangerous Goods Inspectors Team leader will finally inform Head of Dangerous Standards Division (DG) and send the result to Flight Operations Standards Manager (OPS) via e-services system in order to further process for payment of the fees of a permission to send or carry dangerous goods or animals on board aircraft accordance with CAAT regulation, after all discrepancies are closed.

7.2.1.4.2 Result of Inspection, the results of a dangerous goods inspection are recorded so as to produce a record of what was seen and noted at the time. The record must be sufficiently comprehensive to identify any deficiencies, since these will need to be identified in a request to the operator to act to remedy them. The request to the operator should include a time scale for taking remedial action.

Note: If the operator's manual had been amended in phase 4, DGIM chapter 8 shall be applied

7.2.1.5 5. Certification phase

When all discrepancies or operator's findings are closed by dangerous goods inspectors, operators will be asked to pay 'the fees of a permission to send or carry dangerous goods or animals on board aircraft' via e-service.

After the fees of a permission to send or carry dangerous goods or animals on board aircraft had been paid accordance with CAAT regulation by the operator and also the document compliance and the demonstration and inspection stages have been completed satisfactorily, DG team will prepare 'a permission to send or carry dangerous goods or animals on board aircraft', which contains authorizations, limitations, and provisions specific to an operator's operation. The issuing stage follows the satisfactory completion of all the previous stages. It

begins when the CAAT takes the necessary administrative action to issue a permission to send or carry dangerous goods or animals on board aircraft’.

Subsequently, DG will propose an approval of a permission to send or carry dangerous goods or animals on board aircraft’ to the Director General of CAAT for his/her final consideration and authorization. After the Director General’s authorization, the operator will be contacted to collect its permission, or this will be mailed to operator’s directly.

After assurance that the applicant will have to comply with the applicable requirements and is fully capable of fulfilling its responsibilities and conducting a safe and efficient operation.

The permission holder is responsible for continued compliance with CAAT’s regulations and the authorizations, limitations, and provisions of its permission. As a permission holder’s operation and procedures changes, relevant manuals will have to be amended accordingly. The process for amending manuals is similar to the approval process. In some cases, it may be a less complex procedure depending on the subject of the amendment. Dangerous Goods Inspectors are responsible for conducting periodic inspections of the approval holder’s operation to ensure continued compliance with the CAAT’s regulations and safe operating practices.

Subsequent to the issuance of ‘a permission to send or carry dangerous goods or animals on board aircraft’, the Dangerous Goods inspectors will be responsible for continued surveillance and for conducting periodic inspections as contained in Appendixes of this Manual, to ensure the operator’s continued compliance with CAAT’s regulations. These periodic inspections are components of a continuing safety oversight programme.

7.2.1.6 Register of Dangerous Goods Approvals/Exemptions Record

Dangerous Goods Approval should be controlled by master list control to ensure that each approval clearly identified through a title, permit running number

**An example of a Dangerous Goods Approvals Records is found in
 Document and Records Management System (DRMS)
 OPS-DG-404 Dangerous Goods Exemptions/Approvals Register Record**

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8. Approval of Operation and Dangerous Goods Manual

8.1 Policy

8.1.1 Consistent with State operating regulations, the Dangerous Goods manual is required to be submitted to the State by the operator. The State's technical Dangerous Goods inspector will evaluate and approve or recommend changes to ensure compliance with State operating regulations and the ICAO TI. The operator should coordinate with the State as necessary to formulate satisfactory Dangerous Goods manual. Once approved by the State, the operator may implement the approved operational procedures. Only the State may approve Dangerous Goods manuals.

8.1.2 The Dangerous Goods Manual (DGM) sets out the requirements to be complied by an operator carrying dangerous goods. The carriage of dangerous goods shall be in accordance with the latest edition of the ICAO Doc 9284 Technical Instructions for the Safe Transport of Dangerous Goods by Air, here-in referred to as Technical Instructions (TI).

8.2 Objectives

The Dangerous Good Manual shall be prepared and described in detail of policies and procedures in regard to dangerous goods handling practices and knowledge.

8.3 Scope

All applicants are required a manual containing procedures for the handling of dangerous goods, emergency response to dangerous goods incidents and the training of personnel. The detail required will depend upon the intended status of the applicant with respect to the transport of dangerous goods. If a declaration has been made that dangerous goods will be carried as cargo, the applicant will be required comprehensive material on the control, loading and carriage of dangerous goods and on response to dangerous goods incidents and emergencies. If it is not intended to transport dangerous goods as cargo, the applicant will still need to cover dangerous items that form part of the normal aircraft equipment, dangerous items that are permitted to be carried by passengers and dangerous items that may be carried in the form of company material. In both cases the operators will require procedures for the handling of dangerous goods, emergency response information and details of the required training appropriate to the level of activity proposed.

8.4 General Requirements of Dangerous Goods Manual

All applicants (Apply for Dangerous Goods Approval) will be required Dangerous Goods Manual (DGM) containing procedures for the handling of dangerous goods, emergency response to dangerous goods incidents and the training of personnel. The details required will depend upon the intended status of the applicant with

respect to the transport of dangerous goods. If a declaration has been made that dangerous goods will be carried as cargo, the applicant will require comprehensive material on the control, loading and carriage of dangerous goods and on response to dangerous goods incidents and emergencies. If it is not intended to transport dangerous goods as cargo, the applicant will still need to cover dangerous items that form part of the normal aircraft equipment, dangerous items that are permitted to be carried by passengers and dangerous items that may be carried in the form of company material. In both cases, the operators will require procedures for the handling of dangerous goods, emergency response information and details of the required training appropriate to the level of activity proposed. The Dangerous goods emergency response guide covering emergencies and appropriate response procedures is required for the instruction and guidance of personnel. It is required to be carried as part of on-board aircraft documentation.

- a) An operator shall develop a Dangerous Goods Manual and grant the permission from the CAAT;
- b) The Dangerous Goods Manual may be a part of the Operation Manual or the relevant Transport Manual of the operator;
- c) An operator shall develop and maintain a proper reviewing system to keep the Dangerous Goods Manual up to date and valid;
- d) An operator shall place the Dangerous Goods Manual at the location where the relevant transport personnel are able to direct access to it.

The operator shall establish operating procedures to ensure the safe handling of dangerous goods at all stages of air transport, containing information and instructions on:

- a) The operator's policy to transport dangerous goods;
- b) The requirements for acceptance, handling, loading, stowage and segregation of dangerous goods;
- c) Actions to take in the event of an aircraft accident or incident when dangerous goods are being carried;
- d) The response to emergency situations involving dangerous goods;
- e) The removal of any possible contamination;
- f) The duties of all personnel involved, especially with relevance to ground handling and aircraft handling;
- g) Inspection for damage, leakage or contamination;
- h) Dangerous goods accident and incident reporting.
- i) Dangerous goods training programme.

8.5 Inspection of Operations Manual and/or other Appropriate Manuals

8.5.1 As required by Annex 6 to the Convention on International Civil Aviation, each air operator shall provide procedure and information, in the Operations Manual as will enable the flight crew to carry out its responsibilities. The Technical Instructions require the Operations Manual or other manuals to contain certain information when the operator intends to transport dangerous goods. In addition to this information, the Operations Manual needs to contain sufficient guidance material and instructions to enable all those concerned (both ground staff and flight and cabin crew) to meet their responsibilities.

8.5.2 The Operations Manual inspection aims to confirm the information provided by the operator is adequate, complete and up-to-date (contents of Operation Manual can be found in AOCR, Appendix B 2.1.35); also, that any handling agent has copies of the relevant parts of the manual or other instructions concerning the operator's policy and procedures. The Operations Manual's Dangerous Goods Segment is the means by which the applicant intends to control all Dangerous Goods aspects of the intended operation. Its structure normally consists of several parts such as;

- Policy of the operator in regard to dangerous goods
- The policy for the transport of COMAT (company material, spare parts);
- General exceptions,
- Provision of information to passengers,
- Marking and labeling of packages,
- Detailed assignment of responsibilities,
- Acceptance,
- Loading of dangerous goods,
- NOTOC,
- Retention of documents,
- Hidden dangerous goods, including, GHS labels
- Provision of information for use in responding to dangerous goods incidents in flight,
- Provision of information by pilot in command in the event of an in-flight emergency
- Information to be provided to emergency services in the event of aircraft accident or serious incident or incident,

- Dangerous Goods Reporting,
- Removal of contamination;
- and Dangerous goods training requirement

8.5.3 When an operator does not intend to transport dangerous goods, the Operations Manual is still to be checked at any appropriate times to ensure it contains the following information.

- The policy of the operator in regard to dangerous goods;
- The policy for the transport of COMAT (company material, spare parts);
- Exceptions of the operator;
- Items that may be carried by passengers and crew;
- Provision of information to passengers;
- Marking and labelling of package;
- Detailed and labelling of package;
- Loading of dry-ice;
- Information to assist in the detection of undeclared dangerous goods and forbidden items in baggage, including GHS labels;
- Dangerous goods incident and accident reporting;
- Removal of contamination;
- Dangerous goods training requirement

8.5.4 An adequate operations manual or other related manual should at least:

- a) implement the applicable regulations including any specified mandatory material and not conflict with the regulations of any other State where operations will be conducted;
- b) provide clear, complete and detailed operating instructions, policies and procedures so that operational staff, i.e. crew members and ground operations, loading, maintenance, operational control and administrative personnel, are fully informed of what is required of them. Through the proper use of this material, it will be expected that such personnel perform their duties to a high degree of precision, thus resulting in safe and efficient operations. Procedures should be effective, represent sound safety philosophy and be capable of being accomplished;
- c) make provisions for revision to ensure that the information contained therein is kept up to date;

- d) present the necessary guidance and instructions to personnel in a suitable and convenient format. It should be ascertained that the applicant has provided the required instructions following the guidance provided regarding the form and content of these documents; and
- e) outline standardized procedures for all employee functions.

8.5.5 An initial inspection of the Operations Manual and other staff instructions must be made before an operator start to transport dangerous goods. Following the initial inspection of the Operations Manual, periodic inspections are to be made if there are some modifications to the operations or regulations.

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8.6 Procedures for Submission and Approval

- 8.6.1 Operators submit Dangerous Goods Manual or Operations Manual extracted dangerous goods section to DG responsible for approval since their updating, amending, revising of the manual.
- 8.6.2 Dangerous Goods Inspectors review and evaluate Dangerous Goods Manual or Operations Manuals for compliance with State operating regulations and the ICAO TI. The inspector will recommend the operator any deficiencies to revise manuals, if any, prior approving Dangerous Goods Manual or Operations Manual.
- Form; CAAT-OPS-CLDGI-301–OPS - Operations Manual’s Dangerous Goods Segment and Dangerous Goods Manual.
- 8.6.3 Submit the final revision of Dangerous Goods Manual and/or Operations Manuals to OPS Manager to review.
- 8.6.4 After the acceptance of OPS Manager, the Dangerous Goods Manual and/or Operation Manual are submitted to the Director General of CAAT for the formal approval.
- 8.6.5 Upon the Dangerous Goods Manual approval of Director General of CAAT, the operators will be officially notified by OPS to take the Approved Dangerous Goods Manual back. A copy of DGM must be retained at current CAAT system. (e.g. Safety Oversight Management IT System, e-document etc.).

9. Dangerous Goods Training Programmes Approval

9.1 General

- 9.1.1 The Technical Instructions require that Air Operator, Ground Handling Agencies, Airport Operator and Agencies engaged in Civil Aviation Security Screening check, Regulated Postal Authority, Shipper, Packers and Freight forwarder 's initial and recurrent dangerous goods training programmes for all staff be reviewed and approved by the appropriate authority of the State of the operator irrespective of whether they hold an approval to carry dangerous goods as cargo. The Technical Instructions sets out the minimum training requirements, required by the various categories of employees involved in the handling, offering or transporting of dangerous goods as it relates to their assigned duties. The inspection is to confirm that training meets the requirements of the Technical Instructions domestic regulations.
- 9.1.2 Depending on the size of the operator and the responsibilities of his staff, there may be several different training programmes, since the areas covered by the training and the depth to which they are covered will depend on the responsibilities of the persons concerned. Even if the operator does not transport dangerous goods there is still a need for training programmes, which must be approved by CAAT, for both operational and ground staff involved in dealing with passengers, baggage, cargo and mail. The dangerous goods training for such staff may be included with the training in, for example, safety and emergency procedures. The content of the training programme will vary according to the responsibilities of the staff.
- 9.1.3 The initial inspection leading to the approval of the training programmes approvals should involve an evaluation of the training material and the observation of delivery of the corresponding training.
- 9.1.4 To approve the operator's training programmes, DGI must review the complete training programme, including the exam. Operator's staff must receive training in the requirements commensurate with their responsibilities. If a checklist was required to be submitted with the training programme application, the same checklist can be used to assist the inspector in the process of review and approval.

9.2 Objectives

Staff working relates to transport of Dangerous Goods must be trained about Dangerous Goods regulation. The Dangerous Goods training programme shall provide content according to the International Civil Aviation Organization: ICAO Document 9284 Technical Instruction in Table 1-4, Table 1-5 and Table 1-6. This section is developed to guide the inspector for inspection and issue Dangerous Goods Training Approval.

9.3 References Requirement

- a) Annex 18 to the Convention on International Civil Aviation, The Safe Transport of Dangerous Goods (AN 18)
- b) ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO. Doc.9284) current edition
- c) IATA Dangerous Goods Regulations current edition
- d) Dangerous Goods Inspector Manual (DGIM)
- e) AOCR
- f) RCAAT No.4
- g) Other Regulation, Requirement and Announcement of CAAT

9.4 Required Document to be submitted

- a) Application for Approval of Dangerous Goods Training Program (CAAT-OPS-DG-401)
- b) OPS -Approval of Dangerous Goods Training Programs; Part I & II (CAAT-OPS-CLDGI-302)
- c) OPS - Approval of Dangerous Goods Training Programs; Postal (CAAT-OPS-CLDGI-303)
- d) OPS-Approval of Dangerous Goods Training Programs; Shippers, Packers, Freight, Forwarder (CAAT-OPS-CLDGI-304)
- e) CAAT-OPS-CLDGI-305- OPS- Approval of Dangerous Goods Training Program Checklist (for Transition Period)
- f) CAAT-OPS-CLDGI-404- OPS- Approval of Dangerous Goods Training Program Checklist (for Transition Period)
- g) Yearly Training plan
- h) Training syllabus
- i) Training Materials (including text book, power point and etc.)
- j) 3 set of Examination per 1 training course
- k) Evaluation Criteria
- l) Instructor qualification and instruction records
- m) Dangerous Goods Training Manual which contains the contents as in e) - j)

9.5 DGTM and Dangerous Goods Training Programmes Approval Procedures

- 9.5.1 OPS obtain the formal Application (CAAT-OPS-DG-401) from applicant and registered the application form using Application Training Programs Register OPS-DG-405. OPS manager will assign Dangerous goods inspector for response.

9.5.2 Dangerous goods inspector verify the document as following:

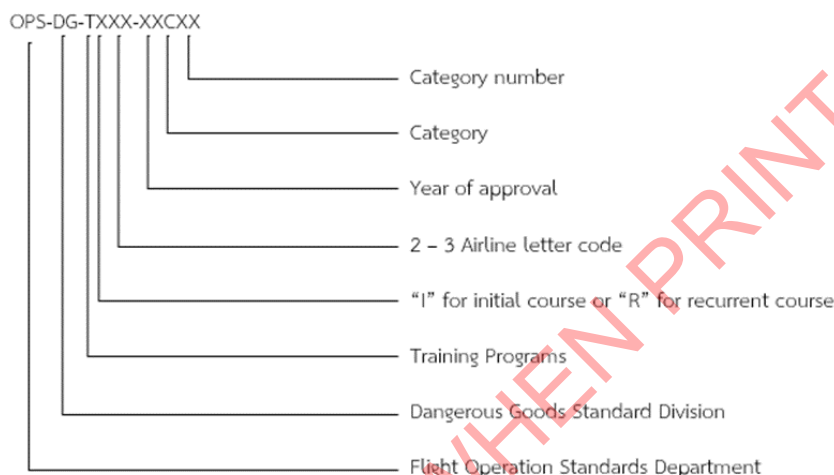
- a) The document in 9.4 must be submitted for verification. The Application for Approval of Dangerous Goods Training Programs form (CAAT-OPS-DG-401) and OPS - Approval of Dangerous Goods Training Programs; Part I & II (CAAT-OPS-CLDGI-302) or (CAAT-OPS-CLDGI-303) or (CAAT-OPS-CLDGI-304) or (CAAT-OPS-CLDGI-305) or (CAAT-OPS-CLDGI-404) must be corrected and completed.
- b) The Dangerous Goods training syllabus and training material must be complied with Table 1-4 or Table 1-5 or Table 1-6 of International Civil Aviation Organization: ICAO Document 9284 Technical Instruction.
- c) If there is any inappropriate content, DGI will communicate with operators for amendment via e-mail.
- d) The instructor must have adequate instructional skill and successfully complete the Dangerous Goods regulation training in applicable category or Category 6. Instructors delivering initial and recurrent dangerous goods training programmes must at least every 24 months deliver such courses, or in the absence of this attend recurrent training).
- e) The number of participants should be appropriated with classroom environment and Facilities.

9.5.3 Register of Training Programmes Approvals

- (1) A record of all training programmes approval should be kept in files
- (2) The Dangerous goods training programmes approvals should be recorded and a register should contain the following information
 - Name of the operator
 - Address of the operator
 - Date of the issuance, renewal or cancellation of the approval
 - Type of programme (Category of personnel involved)
 - Application register
 - Registration number

An example of a Register of approvals for a dangerous goods training programme is found in Document and Records Management System (DRMS)
 OPS-DG-405– Application Training Programs Register

Identification course register number as following



- 9.5.4 The approval letter is drafted according to sample Form OPS-DG-406 and submitted to OPS MGR for verifying before submitting to Director General of CAAT for sign in approval.

Examples of Approval letter are found in Document and Records Management System (DRMS)

OPS-DG-406 - Dangerous Goods Training Programs – Example of Approval Letter

- 9.5.5 Once approved, Dangerous goods inspector will inform the applicant to receive the approval letter or send via postal. The approval date shall be added in OPS-DG-350 for reference purpose.
- 9.5.6 Expiry of Approval, Training programmes approval issued by the CAAT will be valid from date of issuance until 31 December of year of issuance or such date specified or revoked by the CAAT.
- 9.5.7 Upon the Dangerous Goods Training programme approval of Director General of CAAT, the operators will be officially notified by OPS to take the Approved Dangerous Goods Training programme. A binder and evidences of operator's Dangerous Goods Training Programme must be retained at CAAT system (e.g. Safety Oversight Management IT System, e-document etc.).

9.6 Training courses Observation

- (1) It is important to verify that when an Instructor provides training, the training is provided to the appropriate staff and covers all required aspects depending on their responsibilities. To evaluate the suitability of the programme and the Instructor, the inspector should observe delivery of the course.
- (2) In order to document the training attended, two different report should be completed:
 - A report on the consistency between the approved training programme and the delivery of the training.
 - A report on the competency of the Instructor to deliver the approved training programme.

Examples of such reports are found in Document and Records Management System (DRMS)

OPS-CLDGI-701– OPS - Dangerous Goods Training Monitor (Report on Training)

OPS-CLDGI-702– OPS - Dangerous Goods Training Monitor (Report on Instructor)

10. Surveillance Plan and Procedures

10.1 Purposes of Surveillance

- 10.1.1 As required by Annex 18 to the Chicago Convention, each contracting State shall establish process inspection procedures with a view to achieving compliance with its dangerous goods regulations.

“Each Contracting State shall establish inspection, surveillance and enforcement procedures for all entities performing any function prescribed in its regulations for air transport of dangerous goods with a view to achieving compliance with those regulations.”

Note:

1. *It is envisaged that these procedures would include provisions for*
 - *inspecting dangerous goods consignments prepared, offered, accepted or transported by the entities referred to in chapter 15.1;*
 - *inspecting the practices of the entities referred to in chapter 15.1; and*
2. *Guidance on dangerous goods inspections and enforcement may be found in the Supplement to the Technical Instructions (Part S-5, Chapter 1 and Part S-7, Chapters 5 and 6)."*

- 10.1.2 The aim of the surveillance is to assess the suitability of the organization and processes established by the operator and of the facilities provided for the handling of dangerous goods, considering the nature and scale of the operation. If the operator uses a handling agent, the liaison between them needs to be verified to confirm that each knows what is expected of each other.

- 10.1.3 The establishment of surveillance procedures is an important element of the oversight of the transport of dangerous goods. There are numerous aspects related to the transport of dangerous goods by air to verify during surveillance. The surveillance needs to confirm that the entity (e.g. operator, handling agent, shipper, freight forwarder) has sufficient resources (human and physical) for the intended operation and has identified those individuals who have specific responsibilities and has made them aware of their responsibilities. It will ensure that reference manuals are up-to-date and available to staff who will need to use them.

- 10.1.4 The manner of handling and storing dangerous goods is inspected to ensure there are no practices which could lead to accidental damage of packages or put staff at risk; and the method of loading and stowage on aircraft is verified to ensure it is carried out according to the requirements.

- 10.1.5 Ensure that authorized air operators will not load dangerous goods into the aircraft unless the appropriate loading, segregation and inspection for damage or leakage procedures are followed.

10.2 Surveillance/Inspection Policy

- 10.2.1 State capability for appropriate certification and surveillance of air operator and other entities (Ramp inspection for Foreign Air Operators, Postal Authority, International General Aviation, Ground Handling Agent etc.) has been the central theme of the ICAO Universal Safety Oversight Audit Programme (USOAP) since the notion of “Safety Oversight” was adopted by the ICAO Council and the ICAO Assembly in 1995.
- 10.2.2 Thailand, as an ICAO Contracting State and active supporter of ICAO programmes welcomed the introduction of safety oversight audits during all stages of its development and has undergone several assessments and audits, including an audit under the ICAO Continuing Verification Mission (ICVM) – the new face of ICAO’s safety oversight audit programme.
- 10.2.3 Thailand is very much aware of its obligations for safety oversight and is committed to the ideals of ICAO and all of its safety-related programmes. To this end, it has tasked its national civil aviation authority, The Thailand Civil Aviation Authority (CAAT) to adapt safety and efficiency as its central theme and to spare no effort in order to achieve the highest possible degree of safety and efficiency in civil aviation activities.
- 10.2.4 In addition to implementing proper certification process in- line with ICAO requirements and guidelines and accepted international best practices, it has also developed and implemented the Surveillance/Inspection Policy and Procedures as the basis for conducting audits, surveillance and/or inspections of aviation service providers in accordance to established national and international standards, recommended practices and guidance material.
- 10.2.5 The Surveillance/Inspection Policy and Procedures has been developed to provide the necessary guidance both to the CAAT Inspectors and the aviation industry on the policies and procedures that are implemented in the Thailand to ensure continuing demonstration of capabilities and adherence to established regulations by service providers.
- 10.2.6 The CAAT as the primary agency of Thailand for all civil aviation related activities accepts that an audit policy is a responsibility inherent to the State as of the date it elects to join the international aviation community as an ICAO Contracting State. Accepting the obligations of a Contracting State and the responsibilities that come as part of the obligation, the CAAT has developed and implemented a number of policies, procedures and guidance material to enable it meet those same obligations and uphold international Standards and Recommended Practices (SARPs) adopted by the ICAO Council.
- 10.2.7 The surveillance/inspection policy adapted and approved for implementation in Thailand consists of:
- a) Developing an annual surveillance plan
 - b) Conduct of surveillance
 - c) Recording and reporting surveillance activities

- d) Analyzing surveillance data and
 - e) Follow-up resolution of safety issues
- 10.2.8 This Manual is, therefore, published to be a very important safety tool that would significantly contribute to the CAAT's safety oversight capabilities and assist in achieving:
- a) Effectiveness
 - b) Efficiency and
 - c) Consistency
- 10.2.9 In the process, Thailand would be enabled to effectively meet its international obligation for aviation safety as an ICAO Contracting State.
- 10.2.10 Further, effective implementation of the policy and procedures contained in this manual should contribute towards:
- a) Improving compliance of national and international standards;
 - b) Provision of constructive feedback to and from the aviation industry; and
 - c) Enhancing awareness, the aviation community on safety-related issues.

10.3 Surveillance Areas

Surveillance area for the propose of contiuous safety monitoring, Checklist OPS-CLDGI-401- OPS - Dangerous Goods Site Audit (For DG Approved Operator), or OPS-CLDGI-402- OPS - Dangerous Goods Site Audit (For Non-DG Approved Operator) shall be used as the main checklists for surveillance inspection on air operators.

Safety-related activities related to air operator ground operations are monitored through the Operator Safety Management and Compliance Monitoring Program. Refer to AOCR chapter 5 Ground handling Operations (section 14).

10.3.1 Cargo Facilities

A cargo facility usually has the following areas:

- A non-restricted area, open to the public which include:
 - An area where the documentation for cargo will be accepted
 - An area where the cargo packages will be accepted
 - An area where the cargo packages will be released after arrival
- A restricted area limited to those authorized to be present which include:
 - An outbound area where the outbound cargo will be stored prior to be brought to an aircraft.

- An inbound area where the inbound cargo will be stored after arrival
- An area where the records will be kept
- Use checklist for inspection this area follows:
 - OPS-CLDGI-403 – OPS - Cargo Facility Process Inspection

10.3.2 Passenger Terminal Facilities

A Passenger terminal facility usually has the following areas:

- A non-restricted area, open to the public which include:
 - An area where the passenger are checked-in
 - An area where the passenger can purchase tickets
- A restricted area limited to those authorized to be present which include:
 - An area where passenger can board aircrafts
 - An area where passenger can disembark aircrafts
 - An area where the passenger can retrieve their baggage
- An area where the records will be kept
- Use checklist for inspection this area follows:
 - OPS-CLDGI-404 – OPS - Passenger Handling Facility Process Inspection

10.3.3 Ground Handling Facilities

Ground handling facility usually has the following areas:

- A restricted area limited to those authorized to be present which include:
 - An area where cargo is loaded and unloaded on aircrafts
 - An area where baggage is loaded and unloaded on aircrafts
 - An area where passenger board and disembark aircrafts
- An area where the records will be kept
- Use checklists for inspection this area follows:
 - OPS-CLDGI-405 – OPS - Ground Handling Facilities Process Inspection
 - OPS-CLDGI-406 – OPS - Ramp & In-Flight Process Inspection

10.3.4 Shipping Facilities

Shipping facilities usually has the following areas:

- A restricted area limited to those authorized to be present which include:
 - An area where dangerous goods are stored
 - An area where packages containing dangerous goods are prepared for shipping
 - An area where packages containing dangerous goods are received

- An area where the records will be kept
- Use checklist for inspection this area follows:
 - OPS-CLDGI-407 – OPS - Shipping Facilities Process Inspection

10.3.5 Ramp Inspection of Foreign Air Operator (FAO)

Dangerous Goods Ramp inspection for FAO usually has the following areas:

- Information to pilot-in command
 - The Notification to Captain (NOTOC) with accurate and legible written or printed information concerning dangerous goods that are to be carried as cargo
- Information and Instructions to Flight crew members
 - The information in the Operation Manual as will enable the flight crew to carry out its responsibilities with regard to transport of dangerous goods and shall provide instructions as to action to be taken in the event of emergencies arising involving dangerous goods.
- Use checklist for inspection this area follows:
 - OPS-CLDGI-406 – OPS - Ramp & In-Flight Inspection

10.3.6 Other Facilities

10.3.6.1 There may be situations where a dangerous goods inspection is necessary in a location, other than those mentioned in the previous chapters. These may be as an example:

- Postal offices;
- International General Aviation;
- Operator's sales agents booking flights for passengers and answering questions regarding what they can or cannot bring onboard;
- Tour or travel agency;
- Agency providing medical staff and equipment to assist during disasters;
- Agency providing staff and equipment to escort animals during air transport;
- Agency providing security staff and equipment during air transport of high value shipment;
- Organization specialized in the forwarding of personal effect; etc.

10.3.6.2 While this manual does not have specific checklists exist for these, a Dangerous Goods Inspector can use any of them and indicate non-applicable in some of the areas.

10.3.6.3 Of particular concerns should be, as applicable:

- Identification of the organization or agency facilities;
- Past Occurrences;

- Hidden Dangerous Goods Warning;
- Identification of Employees;
- Training Records;
- Reference Documents;
- Client profile; and
- Available Tools;
- Use checklists for inspection this area follows:
 - OPS-CLDGI-408 – OPS - Package or Article Inspection
 - OPS-CLDGI-402 – OPS - Dangerous Goods Site Audit Checklist (For Non-Approved DG Operator) shall be applied for International General Aviation as applicable.

10.4 Selection of Inspection Areas

10.4.1 The locations to do a process inspection are divided into groups:

- Reactive locations
- Pro-active locations

10.4.2 The reactive locations are selected following an increase in the evaluation of the potential risks of dangerous goods non-compliance, incident or accident; or following non-compliance(s), incident(s) or accident(s).

10.4.3 The pro-active locations are selected at random.

10.4.4 Some of the factors which would increase the potential risks of dangerous goods non-compliance, incident or accident and could be a reason for a “reactive process inspection” are:

- New services, destinations and facilities;
- Specialized/Seasonal operations;
- Turnover of personnel/Third party/Key personnel;
- Safety and regulatory record;
- Financial issues;
- Labor difficulties;
- Quality assurance programme; and
- Any other factors which would affect the surveillance plan.

10.4.5 Ideally when going to a destination, all operations should be inspected of resources are limited, surveillance should concentrate on high risk operations; and a maximum time frame between surveillance at a specific location should be established.

10.5 Summary of Process Inspection Procedures

10.5.1 Various facilities' process inspections will be explained in subsequent chapters and sample inspection checklists will be reviewed.

10.5.2 The purpose of a process inspection is to verify that it meets the requirements of the National Regulations and the ICAO Technical Instructions when transporting dangerous goods by air.

10.5.3 For an operator, a pre-certification process inspection includes, as a minimum, a review of:

- Operator application to transport dangerous goods in normal or special circumstances;
- Relevant sections of the Operations manuals or other manuals and other staff instructions; and
- Training programmes approvals.

10.5.4 The post certification process inspections or surveillance are designed to verify that the operator keeps the information in the reference manuals up to date and that the manner of handling and storing dangerous goods and the method of loading and stowage on aircraft are carried out according to the requirements. The types of surveillance or process inspections for operators/handling agents may vary from in-depth audits to the inspection of an accepted package.

10.5.5 Surveillance inspections includes among other:

- Inspection of Cargo Facilities;
- Inspection of Passenger Terminals;
- Inspection of Ramp Facilities;
- Inspection of Shipper's Facilities; and
- Audits.

10.6 How to plan an Inspection Process

10.6.1 Pre-Inspection Phase

(1) Before a process inspection of an operator is initiated, all information concerning the operator's procedures shall be reviewed. The relevant information should be retrieved from the following sources:

- Operator company files;
- Certification files;
- Operations specifications;
- Company manuals;
- Occurrence reports;
- Previous process inspection records;

- State approvals;
 - State exemptions;
 - Referral materials; and
 - Any other relevant information available.
- (2) Once the relevant information has been obtained, the process inspection checklists should be preliminary completed with the information to be verified with the latest revision of the Operator's Operations Manual.

10.6.2 On-Site Inspection Phase

- (1) When a process inspection is scheduled, a notice should be given to advise the operator/handling agent and arrangements shall be made for access to relevant areas. In some circumstances the inspection may be made without giving prior notice. However, this may not always be practicable or desirable.
- (2) Upon arrival,
- Introduce yourself to the company representative (it is recommended to provide a business card or contact information);
 - Explain the reason of inspection and areas needed to be accessed to the appropriate person in charge;
 - Ensure that your safety equipment meets the on-site requirements for examples; safety shoes, high visibility vest, ear plug or muff, safety goggles etc.);
 - Ask for a representative of the operator to be with you. Verify any permission to take some pictures on-site.

10.7 Surveillance/Inspection Planning

10.7.1 The annual surveillance/inspection plan shall consider both the aviation industry safety maturity and the CAAT resources. The audit plan should address the following items as applicable:

- a) objective;
- b) scope;
- c) a description of the organization being audited;
- d) methodology;
- e) communications;
- f) specialist assistance
- g) parallel findings and observations;
- h) budget;
- i) organization management personnel;
- j) team composition; and

k) audit schedule.

10.7.2 Maximum resources will be directed at those companies where safety risk has been assessed to be higher and more frequent monitoring has been found to be necessary.

10.8 Surveillance Planning Factors

10.8.1 Surveillance planning main factors include but are not limited to:

- a) finance and labor difficulties;
- b) high turnover in key management personnel;
- c) unacceptable incident/accident rate;
- d) frequent change of out-sourced services such as maintenance, training etc.;
- e) poor Internal Audit or Quality Assurance Programme; and
- f) weak safety resolution/conformance record.

10.8.2 Risk Indicators:

In prioritizing surveillance activities, CAAT shall monitor closely the usual industry risk elements/indicators such as:

a) Financial Change

The effects of financial difficulties and the subsequent impact on operations and maintenance actions are potential indicators of operational safety.

Examples could be “cash on delivery” demands made by suppliers; delays by the company in meeting financial obligations such as rent, payroll or fuel bills; spare-part shortages; and repossession of aircraft or other equipment.

b) Labor Difficulties

Labor unrest may occur during periods of seniority list mergers, union contract negotiations, strikes, or employer lockouts, and may warrant increased regulatory monitoring.

c) Management Practices

Management controls employment, salaries, equipment, training and operational/maintenance processes. It can ensure that operations and maintenance functions are performed in a controlled and disciplined manner, or it can adopt a laissez faire approach. Management can also determine how quickly problems are solved and weak processes rectified. These factors all determine the extent of regulatory monitoring required.

d) Poor Internal Audit or Quality Assurance Programme

Some larger companies and maintenance organizations have adopted formal quality controls. These may be in the form of a Quality Assurance Programme

or formal internal audits. The absence of these programmes may influence the frequency of monitoring, inspections or audits.

e) Change in Operational Scope or Additional Authorities

Changes such as a new level of aircraft operations and associated service will require increased regulatory monitoring.

f) Changes in Contracting for Services

Any changes to aircraft handling or maintenance contracts may require increased monitoring to ensure that the company has conformed to regulatory requirements.

g) High Turnover in Personnel

A loss of experienced personnel or lack of employee stability may be the result of poor working conditions or management attitudes that result in operational inconsistencies or the inability to meet or maintain regulatory requirements. This situation will require increased monitoring.

h) Loss of Key Personnel

The replacement of operations managers, maintenance managers, chief pilots or other key personnel within a company will require increased regulatory monitoring to ensure a smooth transition.

i) Additions or Changes to Product Line

Any changes to a product line may require increased monitoring to ensure that appropriate regulatory requirements have been met.

j) Poor Accident/Incident or Safety Record

Incidents or accidents that occur during company operations may be an indicator of the company's level of conformance and require additional monitoring, inspection or audits.

k) Merger or Takeover

Any merger or change in controlling management may require additional regulatory monitoring or inspection after initial recertification.

l) Regulatory Record

A company's record of previous inspections and audits, the promptness with which the company has completed its Corrective Action Plan and its overall conformance history are indicators that will influence the frequency of monitoring, inspections and audits.

- 10.8.3 Although inspection and audit frequency will be determined by those factors outlined in paragraph 10.8.2, risk indicators are very important when determining whether a company should be subject to additional special purpose or more frequent inspections. A list of these indicators, with an explanation of each, follows. The ranking of each indicator may vary according to circumstances within the company when it is evaluated.

10.9 Surveillance Procedures

10.9.1 Types of Surveillance

The type of surveillance/inspection to be conducted is determined by the circumstances under which the audit is convened:

10.9.1.1 Initial Certification Inspection

- a) Prior to the issuance of an aviation document, all areas of a company will be inspected to ensure that it has conformed to the required regulations and standards. With respect to air operator certificate (AOC) applicants, the procedure follows the process that has been detailed in the AOC Certification Procedures Manual, based on the five phases of certification that are recommended by ICAO (See ICAO Doc. 8335 – Manual of Procedures for Operations Inspection, Certification and Continued Surveillance);
- b) Inspection on initial certification is Phase four – Demonstration (Compliance Evaluation) of the Five-phased process and shall be conducted to demonstrate the applicant's capability to undertake the activities that are applied for in the safest possible manner. Once an applicant for a certificate or approval has been issued an aviation document, he would be advised of the consequent surveillance/inspection activities that could be conducted at any given time but at least once within the first six months of operation.

10.9.1.2 Annual Surveillance/Inspection

The annual surveillance/inspection activity is conducted on the basis of a scheduled surveillance plan that is published annually and made known to the concerned industry and a random, un-scheduled inspection that would be conducted with a notice of less than 24 hours. Surveillance/Inspections conducted under the annual surveillance plan would constitute at least 2 scheduled inspections. The annual surveillance plan for other entities would constitute at least 1 scheduled inspection.

10.9.1.3 Additional Authority Surveillance/Inspections

Additional authority inspections may be conducted prior to the granting of additional authority. This inspection would normally be initiated with the company requesting for additional rights/authority and would be conducted depending on resources that are available to the CAAT and normally would not require specific notification as when it would be conducted.

10.9.1.4 Routine Conformance Inspection

This inspection relates to the Annual Inspection mentioned in 10.6.1 above. Surveillance is conducted either as part of the scheduled annual surveillance plan or as part of the non-scheduled (random) inspection. With respect to the routine conformance inspection, a company would be initially provided with the annual plan and then contacted approximately seven to sixty days prior to the planned audit date to confirm the audit schedule. The complexity of the routine conformance audit will determine the lead-time for contact with the company.

10.9.1.5 Special Purpose Audit

A special purpose audit is one conducted to respond to special circumstances other than those requiring an initial certification audit, an annual surveillance/inspection, an additional authority audit or a routine conformance audit. For example, a special purpose audit may be convened with little or no notice and focus on specific areas of concern arising from safety issues. A “no-notice” audit may preclude certain team members’ activities and responsibilities that would be normally associated with other types (common/joint) of inspections.

10.9.1.6 Frequency of inspections (depends upon risk analysis)

- Training course will be observed at least one every year for each air operator
- Inspection of Cargo Facilities; at least one every year for each operator.
- Inspection of Passenger Handling Facility; at least one every year for each operator.
- Inspection of Ground handling facility; at least one every year for each operator.
- Inspection of Ramp & In-Flight; at least one every year for each operator.
- Inspection of Shipping facility; at least one every year for each operator.
- Other facility

10.9.2 CAAT Annual Surveillance/Inspection Plan

Refer to FOIM Volume 3 Chapter 6

10.9.3 Surveillance Plan and Programme Approving Authority

The approval of the annual surveillance/inspection plan, development of surveillance programmes including the conduct of the surveillance/inspection shall be approved by the Director General of CAAT.

10.9.4 Assignment of Dangerous Goods Inspectors

- 10.9.4.1 The Director General of the CAAT and/or OPS Manager responsible for regulating and controlling a specific industry has the responsibility of assigning Inspectors that would conduct the inspection of the target organization. However, in the case of the inspection of an AOC holder, the Manager of OPS and POI shall coordinate and have joint responsibility of assigning Inspectors who would be responsible to inspect areas of common responsibility.

10.9.5 Assignment of Inspection Team Leader

- 10.9.5.1 Depending on the size of the inspection to be conducted, it may be necessary to assign an Inspection Team Leader. Even if the size of the Inspection Team is limited, as long as there is more than one person involved, it would be necessary to assign one of them as the Inspection Team leader responsible for effectively leading and completing the surveillance/inspection process.
- 10.9.5.2 Inspection Team Leader is appointed by the Manager responsible for the activity to be inspected. Team Leader shall take up all necessary pre-inspection preparation in accordance with this chapter. However, where the surveillance/inspection is to be

made jointly, a team leader shall be appointed and shall take up all the necessary pre-inspection preparation.

10.9.6 Notification of Surveillance

10.9.6.1 Once the Inspection Team members are assigned and the dates for the surveillance/inspection has been confirmed as per the Approving Authority Matrix, it shall be communicated in writing to concerned AOC holders as appropriate, approximately 30 days in advance.

10.9.6.2 In the case that surveillance and inspection is conducted outside the home base, the names of the Inspection Team Leader and Members shall be communicated as early as possible to facilitate travel requirements and, in all cases, at least four weeks prior to the start of the inspection.

10.10 Conduct of Surveillance

10.10.1 General

Three methods/steps of conducting surveillance/inspection have been identified to assist an Inspection Team to undertake their activities effectively. They are:

- a) Observing: May lead Inspection Team Members into areas that may or may not require further investigation.
- b) Interviewing: The success of an interview depends on the individual Inspector's skills. Each scenario will be different, and an Inspector needs to decide whether the interview approach would be formal or informal.
- c) Recording & Documenting: Do not rely on your memory and record relevant details immediately. Record findings and observations and they must be complete in detail for use in confirming and substantiating what you have seen and heard.

10.10.2 Pre-Surveillance Preparation

The pre-surveillance preparation starts by opening a Surveillance/Inspection File. Members of the Surveillance/Inspection Team should thoroughly familiarize themselves about the approved/certified company documents, authorizations and limitations. Check for incident and accident occurrences. Check also for any previous surveillances reports and if there are unresolved findings in their respective areas of specialty.

10.10.3 Pre-Surveillance Team Members Meeting

10.10.3.1 The team members should meet before the planned surveillance and brief each other on their respective areas. They need to evaluate all the outstanding issues and consult on how to coordinate their respective activities with the aim of standardizing and harmonizing their approach as well as the outcome of the inspection.

10.10.3.2 The Inspection Team Leader normally moderates such a briefing. If the Inspection Team found it necessary to have the support of a specialist to conduct the

inspection, they should make this requirement known to the approving authority so that the required specialist would be assigned.

10.10.4 Entry/Opening Meeting

10.10.4.1 The physical inspection process starts with the Entry/Opening Meeting and consists of evaluations, verifications and daily or timely briefings.

10.10.4.2 The entry/opening meeting should set the tone for the compliance evaluation and physical inspection and should be attended by the concerned organization's senior management and CAAT inspectors assigned to the audit.

10.10.4.3 The CAAT Inspection Team Leader or the specialist inspector should outline the audit process to the concerned organization's participants and confirm any administrative requirements so that the physical inspection may be conducted effectively and efficiently, while minimizing disruptions to the company's operation.

10.10.4.4 The entry/opening meeting should normally take place

- on the concerned organization's premises;
- be attended by the concerned organization's senior management;
- specify audit details and procedures; and
- be brief, specific and courteous.

10.10.5 Compliance Evaluation and Inspection

10.10.5.1 In the compliance evaluation stage, the company's level of conformance with regulations and standards contained in existing legislation and company control manuals should be assessed. Methodology that would assist the effective conduct of the evaluation process includes, but are not limited to:

a) Interviews

Interviews with company personnel are important during the evaluation phase to determine whether the control system documented in company manuals is that in use, and to assess the knowledge of supervisory personnel of their duties and responsibilities. Interviews may also confirm the validity of audit findings reached through observation or sampling. The following guidelines will be useful when preparing for an interview:

- i. prepares carefully prior to the interview by defining the areas to be explored and setting specific objectives;
- ii. explain why the interview is taking place;
- iii. use open questions and avoid complex questions or phrases;
- iv. listen carefully to answers and allow interviewee to do most of the talking;
- v. avoids being side-tracked from your original objectives;
- vi. ensure that questions are understood;

- vii. terminate the interview if the atmosphere becomes highly negative;
- viii. document all responses; and
- ix. thank the interviewee at the conclusion of the interview.

b) Verification

- i. During this phase, the audit team will gather information to determine the company's level of conformance.

Specifically, verification will:

- determine whether company controls are operating effectively and as intended;
 - determine whether the concerned organization's operation/activity conforms to the aviation regulations and standards contained in the audit checklists; and
 - analyze particular deficiencies to assess their effects and identify the causes.
- ii. Company files or records should not be accessed without appropriate company authorization and, when possible, company representatives should be present during the review of these files and records.
 - iii. If the review and verification phases do not provide sufficient confirmation of the company's level of conformance, further substantiation will be required to ensure that any evidence obtained up to that point supports the audit findings and conclusions. In short, other supporting documentation must be acquired and secured.
 - iv. Verification includes various types of inspections. These may be Aircraft Inspections (of each type of aircraft), Pre-Flight/Ramp Inspections, In-Flight Inspections (sampling of company routes, i.e. domestic, international and new routes) and Base Inspections. These inspections may be carried out as coordinated inspections.

For example, a Pre-Flight, a Flight Operations Inspector and an Airworthiness Inspector may conduct Ramp Inspection.

10.10.5.2 The Team Leader or the Specialist Inspector shall:

- a) explain the purpose of the entry meeting;
- b) introduce audit team members, including specialists and observers;
- c) state the objective, scope and depth of the audit;
- d) address the means of communication between the audit team and the concerned organization (interview, questions, and asking for evidence i.e. show me);
- e) explain that company officials will be briefed daily on progress of the audit;
- f) describe the manner in which any audit finding identified will be handled;

- g) establish a location and time for the exit meeting;
- h) emphasize that the purpose of an audit is to identify non-conformances and that enforcement action may result from any of these findings; and
- i) respond to all questions from the concerned organization.

10.10.5.3 Daily Briefings

- a) Two types of briefings could be planned for at the end of each inspection day. Those are the Inspector Team members' daily briefing and the briefing that may be provided to the concerned organization at the end of each day of inspection.
- b) Inspection Team daily briefing would enable the team members to compare notes, assess the various departments preparation and willingness to cooperate with the Inspectors, discuss any problem that may have been experienced by each team member and plan for the continuity of the inspection considering the experience gained.
- c) Daily (or any scheduled) meeting with the management of the concerned organization has to be agreed upon in advance and held to support the surveillance/inspection activity for a successful end. This meeting would enable the Inspectors and the Company management to assess where areas of difficulties could reside and resolve or prepare for their resolution in a timely manner. It would also contribute to avoiding surprises or arguments at the end of the inspection process as management would have already been informed on pertinent issues before the closing meeting and the closing-day final briefing.
- e) In all cases, Inspection Team briefing and briefing to the management of the company under inspection should aim to:
 - ensure adherence to the audit plan;
 - validate confirmation requests and audit findings;
 - resolve issues or problems arising from the day's activities; and update the approving authority if necessary.

10.11 Post Surveillance/Inspection Follow Up Action

10.11.1 Audit Report

- 10.11.1.1 At the end of the surveillance/inspection process and following the closing meeting/ briefing, the OPS Inspection Team shall develop and prepare the surveillance/inspection report prior to the closing meeting and the report must be acknowledged by the operator.
- 10.11.1.2 Pertinent contents of the findings and conclusion of the surveillance/inspection would have normally been explained to the management team of the company inspected and the counterparts to the Inspection Team.

10.11.1.3 If time permits, a draft report should be prepared and made available to the company, clearly explaining that this is only a draft report and may be changed after the Inspection Team had the opportunity to review and conform all the evidence that has been gathered. Submission of a draft report is advised but only if time and situation permit and only if all the inspected areas can be addressed in the same draft report.

10.11.1.2 Surveillance/Inspection Report

When discrepancies are found during the document evaluation process, DGI will inform applicant by using Safety Oversight Management IT System as primary tools.

10.11.1.3 The surveillance/inspection report will be a factual account of the inspection conducted. Inspectors should take care on its presentation that should not include subjective statements, suggestions or recommendations.

10.11.1.4 Inspection Team should prepare to discuss the findings and their classification at the closing meeting with the auditee and amend them if considered appropriate. Inspection. Team should summarize the audit activities and explain the classification of each finding. His/her should normally allow the individual inspector to present their own findings; they should describe individual finding verbatim from the report and give additional background or explanation where required. Representatives of the operator must attend; as a minimum, this should compromise the Accountable Manager, Head of Quality and Head of Safety and the Post-holders or nominated duties. Supporting evidence of any findings should be readily available at the closing meeting to clarify any questions the operator might have.

The list of non-compliance shall be submitted to the operator at the closing meeting and the report must be acknowledged by the operator.

10.11.1.5 The Team Leader shall upload the signed Surveillance/Inspection Report through Safety Oversight Management IT System within 3 days after closing meeting.

10.11.2 Parallel Report

10.11.2.1 An inspection may identify observations and/or deficiencies in, or the misapplication of aviation legislation, regulations, policies and procedures. Where an observation or deficiency indicates a need for revised policies, standards, procedures or guidelines, a recommendation shall be made to the CAAT for rectification.

10.11.2.2 Where a non-conformance to a regulatory requirement is found, and that requirement required CAAT approval (i.e. document or manual approval), a finding shall be made against the concerned organization (so that the non-conformance is resolved through the corrective action to be submitted by the company).

10.11.2.3 Findings that require a corrective action by CAAT shall be reported to the appropriate authority within ten working days for rectification.

- 10.11.2.4 Findings directed at CAAT or anyone of its directorates shall neither be included nor referenced in the surveillance/inspection report.

10.11.3 Ramp Inspection Report

Ramp inspection reports are reports generated resulting from an inspection that has been conducted on an operator during an operational phase of an aircraft on the ground. It should include, but not be limited,

Note: If aircraft survey report & ramp inspection reports are used during a single inspection (event) the inspectors are to coordinate their findings. These reports may be used as supplementary findings to an audit report or an individually tasked event.

10.11.4 Spot Check Report

- 10.11.4.1 Spot check reports emanate from inspections conducted by flight operations or airworthiness inspectors conducting a product inspection. This may be associated with a surveillance/inspection but is normally an individually tasked event. It should identify the product inspected details, enroute inspection, port inspection, facility inspection, documentation inspection etc.

10.11.5 Resolution of Identification Deficiencies

- 10.11.5.1 The effectiveness of a programmed surveillance relies on the implementation or resolution of the non-confirming findings. This very important element starts with the submission of the corrective action submitted by the concerned company within the time limitation prescribed and accepted by the CAAT.
- 10.11.5.2 The fact that a corrective action is required is a declaration that the inspected service provider has been found to be operating below the minimum requirements and therefore would need to make the necessary changes to ensure continued capability.
- 10.11.5.3 It is the responsibility of the inspected service provider to resolve the identified findings within the prescribed time. The relevant Department should establish a monitoring system to ensure that the corrective action has been implemented.

10.11.6 Determination of Finding Resolution Period

- 10.11.6.1 The following implementation dates for resolving identified findings shall be the bench mark against which the follow-up action is determined.
- 10.11.6.2 Surveillance/Inspection findings are classified according to the seriousness of the finding to flight safety as follows:
- The immediate Action taken action plan (within 3 days);
 - The short-term corrective action plan (within 30 days);
 - The long term/system wide corrective action plan (more than 30 days);
- 10.11.6.3 Where corrective action required by a finding is not put into place by a participant and advice to that effect not received by the Team Leader/Inspector by the due

date, an enforcement action may be taken against the concerned service provider, with a warning that the action should be completed within the next 7 days after which date a more robust enforcement action that may also include suspension of certificate or approval.

10.11.6.4 It is CAAT policy that only in exceptional circumstances will extensions to due dates be granted. This will be required the approval of Manager of OPS.

10.11.7 Validation

10.11.7.1 When a service provider indicates that an action plan has been completed and the identified deficiency rectified, CAAT Inspector(s) shall be assigned to conduct a validation inspection to verify the effective resolution of the identified deficiency.

10.11.7.2 Upon appropriately documented satisfactory resolution, the appropriate authority shall close the file opened for the specific purpose of the Surveillance/Inspection.

11. Surveillance Procedures for Cargo Facilities

11.1 General Set-Up

A cargo facility usually has the following areas:

- A non-restricted area, open to the public which includes:
 - An area where the documentation for cargo will be accepted
 - An area where the cargo packages will be accepted
 - An area where the cargo packages will be released after arrival
- A restricted area limited to those authorized to be present which include:
 - An outbound area where the outbound cargo will be stored prior to loading on an aircraft or in a unit load.
 - An inbound area where the inbound cargo will be stored after arrival
- An area where the records will be kept

11.2 Risk Mitigation

11.2.1 Risk Assessment

Refer to OPSM chapter 9

11.2.2 Warehouse Safety

- (1) Normally, handling agents or operators provide health and safety information such as clothing and footwear requirements when visitors first arrive at their premises. In any event, and particularly if such information has not been provided, the Dangerous Goods Inspector should ask about it.
- (2) It should be determined early on whether there is any unusual activity taking place in the warehouse, prior to entering it, which may require particular attention (such as construction work).
- (3) Whenever working in a warehouse, shoes or boots with protective toecaps and high visibility reflective clothing should be worn.
- (4) Many warehouses have specific walkways that should be used but even so, a careful watch must be kept to ensure that maneuvering vehicles, particularly forklift trucks, are avoided.
- (5) Other hazards that should be borne in mind are wet or slippery floors and trip hazards.
- (6) Most warehouses use racking to store freight and sometimes packages that need to be inspected are stored under a shelf providing low headroom. Care must therefore be taken when inspecting packages and it is often advisable to ask for the packages concerned to be taken out of the racking system first.

- (7) As the exterior of packages may have been contaminated with dirt etc. (or in exceptional circumstances from leaking dangerous goods) during transport, handling or by the environment, hands should be washed thoroughly as soon as possible, after working in a warehouse, whether or not protective gloves have been worn.

11.3 Inspection Areas

11.3.1 A process inspection report of a cargo facility should include the following topics:

- Identification of Cargo Facility;
- Past Occurrences;
- Hidden Dangerous Goods Warnings;
- Identification of Employees;
- Training Records;
- Reference Documents;
- Transport Documents;
- Packages Inspected; and
- Available Tools.

**An example of a Cargo Facility Process Inspection Checklists are found in;
 OPS Mater Document Registry (MDR)**

OPS-CLDGI-403 – OPS - Cargo Facility Process Inspection
 OPS-CLDGI-405- OPS - Ground Handling Facility Process Inspection
 OPS-CLDGI-407 – OPS - Shipping Facility Process Inspection
 OPS-CLDGI-408 – OPS - Package or Article Inspection

11.3.2 The aim of inspecting consignments of dangerous goods is to determine that, as far as can be ascertained from an external check, that the packages and their associated documents comply with the requirements. It also aims to determine, as far as possible, that other associated documentation (e.g. air waybill, dangerous goods transport document, acceptance check list, notification to the Pilot-in-command (NOTOC)) meets all applicable requirements.

11.3.3 A cargo facility inspection includes inspection of packages inspection and/or documents inspection.

11.3.4 Cargo facility inspections are also carried out, to determine whether or not the operators/handling agent's procedures are being followed.

11.3.5 Ideally, the inspection of packages should be done after the dangerous goods have been accepted for transport or whilst they are still in the care of the operator or handling agent.

11.3.6 Both export and import consignments are to be inspected but with the emphasis on export consignments since, if a consignment is found which does not comply with the requirements, action can be taken to prevent it from being loaded on an

aircraft and investigation initiated into how it was offered for transport and accepted in the condition in which it was found.

11.3.7 Import consignments are also to be inspected, since although they have been carried by air, the finding of evidence of non-compliance with the requirements needs to be reported to the State where the goods were originally accepted and loaded on an aircraft.

11.3.8 When a cargo facility process inspection is scheduled, adequate notice should be given to advise the operator/handling agent and arrangements made for access to relevant areas. In some circumstances the inspection may be made without giving prior notice. However, this may not always be practicable or desirable. If arrival is unannounced, upon arrival, the most senior operational person on duty should be contacted and informed of the inspection to take place. It should be confirmed which consignments are available for inspection and, if necessary, a final decision made on what will be inspected.

11.3.9 Dangerous Goods in Air Mail

(1) Most dangerous goods are not permitted in air mail. There are five exceptions; these are:

- Patient specimens (human and animals);
- Infectious substances assigned to category B (UN3373); and dry ice when used as a refrigerant for them;
- Radioactive material, in excepted packages (UN2910 and UN2911 only);
- Lithium ion batteries contained in equipment (UN 3481) meeting the provisions of Section II of Packing Instruction 967. No more than four cells or two batteries may be mailed in any single package.; and
- Lithium metal batteries contained in equipment (UN 3091) meeting the provisions of Section II of Packing Instruction 970. No more than four cells or two batteries may be mailed in any single package.

(2) Lithium ion and lithium metal batteries contained in equipment may only be accepted for carriage by the Designated Postal Operator if they are approved to do so by CAAT.

(3) For radioactive material, a special marking will be needed¹.

11.3.10 Spare Labels

If labels are found missing from packages of dangerous goods during transport, they are to be replaced using the information on the appropriate dangerous goods

transport document. The Dangerous Goods inspector should verify the presence of spare labels.

11.3.11 Tools to Secure Dangerous Goods

Packages of dangerous goods need to be secured to prevent movement in flight. This is particularly so for radioactive material, where the securing needs to ensure they cannot move sufficiently to lessen the distance between them and the passengers and/or crew. The Dangerous Goods Inspector should verify the presence, in the facilities of straps for securing dangerous goods in the aircraft. He should also verify that loading staff do not over secure packages which may result in damage to them.

11.3.12 Identification of Unit Loaded Devices (ULD)

If dangerous goods are placed in a unit load device, either the labels on the packages are to be visible or a tag needs to be attached to the unit load device identifying the contents by class/division and whether they are for “cargo aircraft only”. Once the dangerous goods have been removed from a unit load device, the tag on it needs to be removed immediately. As Unit Load Devices (ULD) are usually prepared in cargo warehouse, the Dangerous Goods inspector should verify the availability of those tags.

11.4 Special Provisions

11.4.1 The following are special provisions which should be kept in mind during a process inspection in a cargo facility

11.4.2 Special Provision A9 - Alcoholic beverages containing not more than 70 per cent alcohol by volume, when packed in receptacles of 5 liters or less, are not subject to the Technical Instructions when carried as cargo.

11.4.3 Special Provision A26 - Refrigerating machines include air conditioning units and machines or other appliances which have been designed for the specific purpose of keeping food or other items at low temperature in an internal compartment. Refrigerating machines and refrigerating machine components are considered not subject to these Instructions if containing less than 12 kg of a gas in Division 2.2 or if containing less than 12 L ammonia solution (UN 2672).

11.4.4 Special Provision A32 – Safety devices, electrically initiated and safety devices, pyrotechnic installed in vehicles, vessels or aircraft or in completed components such as steering columns, door panels, seats, etc., which are not capable of inadvertent activation are not subject to these Instructions when carried as cargo. The words “not restricted”

11.4.5 Special Provision A44 - The entry chemical kit or first-aid kit is intended to apply to boxes, cases, etc., containing small quantities of various dangerous goods which are used, for example, for medical, analytical or testing or repair purposes. Components must not react dangerously (see 4;1.1.8). The packing group

assigned to the kit as a whole must be the most stringent packing group assigned to any individual substance in the kit. The assigned packing group must be shown on the dangerous goods transport document. Where the kit contains only dangerous goods to which no packing group is assigned, a packing group must not be indicated on the dangerous goods transport document.

Such kits must only contain dangerous goods that are permitted as:

- a) excepted quantities not exceeding the quantity indicated by the code in column 9 of Table 3-1, provided that the quantity per inner packaging and quantity per package are as prescribed in 5.1.2 and 5.1.3 and the inner packaging are as prescribed in 5.2 a); or
- b) limited quantities as prescribed under 3;4.1.2

11.4.6 Special Provision A70 - Internal combustion or fuel cell engines or machinery being shipped either separately or incorporated into a vehicle, machine or other apparatus, without batteries or other dangerous goods, are not subject to these Instructions when carried as cargo provided that:

- a) for flammable liquid powered engines:
 - 1) the engine is powered by a fuel that does not meet the classification criteria for any class or division; or
 - 2) the fuel tank of the vehicle, machine or other apparatus has never contained any fuel or the fuel tank has been flushed and purged of vapours and adequate measures taken to nullify the hazard; and
 - 3) the entire fuel system of the engine has no free liquid and all fuel lines are sealed or capped or securely connected to the engine and vehicle, machinery or apparatus.
- b) for flammable gas-powered internal combustion or fuel cell engines:
 - 1) the entire fuel system must have been flushed, purged and filled with a non-flammable gas or fluid to nullify the hazard;
 - 2) the final pressure of the non-flammable gas used to fill the system does not exceed 200 kPa at 20°C;
 - 3) the shipper has made prior arrangements with the operator; and
 - 4) the shipper has provided the operator with written or electronic documentation stating that the flushing, purging and filling procedure has been followed and that the final contents of the engine(s) have been tested and verified to be non-flammable.

Multiple engines may be shipped in a unit load device provided that the shipper has made prior arrangements with the operator(s) for each shipment.

When this special provision is used, the words "not restricted" and the special provision number A70 must be provided on the air waybill when an air waybill is issued.

11.4.7 Special Provision A87 - Articles which are not fully enclosed by packaging, crates or other means that prevent ready identification are not subject to the marking requirements or the labelling requirements.

- 11.4.8 Special Provision A98 - Aerosols, gas cartridges and receptacles, small, containing gas with a capacity not exceeding 50 ml, containing no constituents subject to these Instructions other than a Division 2.2 gas, are not subject to these Instructions when carried as cargo unless their release could cause extreme annoyance or discomfort to crew members so as to prevent the correct performance of assigned duties. The words “not restricted” and the special provision number A98 must be provided on the air waybill when an air waybill is issued.
- 11.4.9 Special Provision A152 - Insulated packaging conforming to the requirements of Packing Instruction 202 containing refrigerated liquid nitrogen fully absorbed in a porous material are not subject to these Instructions provided the design of the insulated packaging would not allow the build-up of pressure within the container and would not permit the release of any refrigerated liquid nitrogen irrespective of the orientation of the insulated packaging and any outer packaging or overpack used is closed in a way that will not allow the build-up of pressure within that packaging or overpack. When used to contain substances not subject to these Instructions, the words “not restricted” and the special provision number A152 must be provided on the air waybill when an air waybill is issued.
- 11.4.10 Special Provision A154 - Lithium ion cells or batteries and lithium metal cells or batteries, identified as being defective for safety reasons, that have the potential of producing a dangerous evolution of heat, fire or short circuit are forbidden for transport (e.g. those being returned to the manufacturer for safety reasons or cells or batteries that cannot be diagnosed as defective prior to transport).
- Lithium ion cells or batteries and lithium metal cells or batteries identified as being damaged such that they do not conform to the type tested according to the applicable provisions of the *UN Manual of Tests and Criteria* are forbidden for transport. For the purposes of this special provision, these may include, but are not limited to:
- a) cells or batteries that have leaked or vented;
 - b) cells or batteries that cannot be diagnosed prior to transport; or
 - c) cells or batteries that have sustained physical or mechanical damage.
- In assessing a cell or battery as defective or damaged, an assessment or evaluation must be performed based on safety criteria from the cell, battery or product manufacturer or by a technical expert with knowledge of the cell's or battery's safety features. An assessment or evaluation may include, but is not limited to, the following criteria:
- a) acute hazard, such as gas, fire, or electrolyte leaking;
 - b) the use or misuse of the cell or battery;
 - c) signs of physical damage, such as deformation to cell or battery casing, or colours on the casing;
 - d) external and internal short circuit protection, such as voltage or isolation measures;

- e) the condition of the cell or battery safety features; or
- f) damage to any internal safety components, such as the battery management system

11.4.11 Special Provision A183 - Waste batteries and batteries being shipped for recycling or disposal are prohibited from air transport unless approved by the appropriate national authority of the State of Origin and the State of the Operator.

11.4.12 Special Provision A198 - Hay, straw and bhusa, when not wet, damp or contaminated with oil are not subject to the Technical Instructions.

11.4.13 Special Provision A199 - Nickel-metal hydride batteries or nickel-metal hydride battery-powered devices, equipment or vehicles having the potential of a dangerous evolution of heat are not subject to these Instructions provided they are prepared for transport so as to prevent:

- a) a short circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals, or, in the case of equipment, by disconnection of the battery and protection of exposed terminals); and
- b) unintentional activation.

The words "Not Restricted" and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued.

11.5 Exceptions

Some general exceptions are present in the Technical Instructions and should be taken under considerations during a process inspection. These being where the dangerous goods are:

- To provide, during flight, medical aid to a patient;
- To provide, during flight, veterinary aid or a humane killer for an animal;
- For dropping in connection with agricultural, horticultural, forestry, avalanche control, ice jam control and landslide clearance or pollution control activities;
- To provide, during flight, aid in connection with search and rescue operations;
- Vehicles carried in aircraft designed or modified for vehicle ferry operations;
- Required for the propulsion of the means of transport or the operation of its specialized equipment during transport (e.g. refrigeration units) or that are required in accordance with the operating regulations (e.g. fire extinguishers);
- Contained within items of excess baggage being sent as cargo;
- Articles and substances which would otherwise be classified as dangerous goods but which are required to be aboard the aircraft in accordance with the pertinent airworthiness requirements and operating regulations or that are authorized by the State of the Operator to meet special requirements;

- Aerosols, alcoholic beverages, perfumes, colognes, liquefied gas lighters and portable electronic devices containing lithium metal or lithium ion cells or batteries provided that the batteries meet the provisions of Table 8-1 Items 20) of the Technical Instructions carried aboard an aircraft by the operator for use or sale on the aircraft during the flight or series of flights, but excluding non-refillable gas lighters and those lighters liable to leak when exposed to reduced pressure;
- Dry ice intended for use in food and beverage service aboard the aircraft;
- Hygiene Products, alcohol-based hand sanitizers and alcohol-based cleaning products carried aboard an aircraft by the operator for use on the aircraft during the flight or series of flights for the purposes for passenger and crew hygiene.
- Electronic devices, such as electronic flight bags, personal entertainment devices, and credit card readers, containing lithium metal or lithium ion cells or batteries and spare lithium batteries for such devices carried aboard an aircraft by the operator for use on the aircraft during the flight or series of flights, provided that the batteries meet the provisions of Table 8-1 Items 20) of the Technical Instructions. Spare lithium batteries must be individually protected so as to prevent short circuits when not in use. Conditions for the carriage and use of these electronic devices and for the carriage of spare batteries must be provided in the operations manual and/or other appropriate manuals as will enable flight crew, cabin crew and other employees to carry out their responsibilities.

11.6 Common Non-Compliances

The following are common non-compliances frequently observed in the past.

- Missing hidden dangerous goods warnings
- Undeclared/mis-declared Dangerous Goods
- Failure to train personnel
- Incomplete training history
- Missing training files
- Outdated publication
- Failure to ensure that up to date information is available to staff.
- Lack of segregation
- Security tape over labels
- Unmarked overpack
- Failure to ensure that spare labels are available to staff
- Radioactive package run over by forklift
- Damaged dangerous goods in transit
- Failure to inspect packages for damage or leakage immediately before loading and after unloading

12. Surveillance Procedures for Ground Handling Facilities

12.1 General Set-Up

Ground handling facility usually has the following areas:

- A restricted area limited to those authorized to be present which include:
 - An area where cargo is loaded and unloaded on aircrafts
 - An area where baggage is loaded and unloaded on aircrafts
 - An area where passenger board and disembark aircrafts
- An area where the records will be kept

12.2 Risk Mitigation

Many dangerous goods could cause injury or damage to property or the environment in the event of a leakage if they are in a confined space, such as an aircraft cargo hold. As an example, breathing in fumes. Correctly packing dangerous goods and ensuring that leaking or damaged packages are not loaded will make the possibility of them, causing an incident in flight, extremely remote. However, incorrect handling can cause damage during loading and care needs to be taken to prevent accidental damage at this time.

12.3 Inspection Areas

12.3.1 A process inspection of a ground handling facility includes the following topics:

- Identification of ground handling Facility;
- Past Occurrences;
- Identification of Employees;
- Training Records;
- Reference Documents;
- Transport Documents;
- Packages Inspected; and
- Available Tools.

12.3.2 Ground Handling Process Inspection (loading and stowage)

Ground handling process inspections take place on or adjacent to an aircraft and, sometimes, also in a warehouse/freight shed prior to loading, with the aim of verifying that:

- The operator has prepared for the loading and loaded the aircraft according to the principles of the Technical Instructions;
- That the training of the ground and aircraft crew is valid;
- That all required manuals/staff instructions, etc., are up-to-date; and

- That any necessary approvals/exemptions are being carried and their conditions are being complied with.

12.3.3 Inspections

- (1) It is important to ensure that packages of dangerous goods are not put on an aircraft when they are damaged or leaking. Once they are accepted for transport, they are likely to be stored in an airport warehouse or transit shed before being loaded on an aircraft; and at this time there is the possibility they may be damaged by a careless action (such as falling off a pallet because they are unsecured or being run-over by a fork-lift truck). It is also possible that packages of dangerous goods may be damaged during a flight if they are not properly secured or if the surrounding cargo is not secured to prevent movement.
- (2) There are several times during air transport when packages of dangerous goods are required to be inspected to ensure they are not damaged or leaking; these are:
 - On acceptance (and to ensure they are correctly marked and labelled and in a fit condition for transport);
 - Before loading on an aircraft or being placed in a unit load device; and
 - On unloading from an aircraft or unit load device.

12.3.4 Loading and Stowage

- (1) Except for items permitted in passenger or crew baggage and radioactive material in excepted packages, dangerous goods must not be loaded. Packages of dangerous goods are not to be carried in the passenger cabin or on the flight deck. Of course, this does not apply to the dangerous goods that passengers and crew are permitted to have as described in Part 8 of the Technical Instructions.
- (2) Dangerous goods that are restricted to "cargo aircraft only" must not be loaded on an aircraft carrying passengers. In this context, cargo aircraft and passenger aircraft have been defined and the definitions are in Part 1; 3.1 of the Technical Instructions.
 - "Passenger aircraft. An aircraft that carries any person other than a crew member, an operator's employee in an official capacity, an authorized representative of an appropriate national authority or a person accompanying a consignment or other cargo."
 - "Cargo aircraft. Any aircraft, other than a passenger aircraft, which is carrying goods or property."

Note: a "comb" aircraft (Passenger and cargo) is to be treated as a passenger aircraft.

12.3.5 Loading on cargo aircraft

- (1) Packages or overpacks of dangerous goods bearing the “Cargo aircraft only” label must be loaded on a cargo aircraft in accordance with one of the following provisions:
 - a) In a Class C aircraft cargo compartment; or
 - b) In a unit load device equipped with a fire detection/suppression system equivalent to that required by the certification requirements of a Class C aircraft cargo compartment as determined by the appropriate national authority (a ULD that is determined by the appropriate national authority to meet the Class C aircraft cargo compartment standards must include “Class C compartment” on the ULD tag);
 - c) In such a manner that in the event of an emergency involving such packages or overpacks, a crew member or other authorized person can access those packages or overpacks, and can handle and, where size and mass permit, separate such packages or overpacks from other cargo;
 - d) External carriage by a helicopter; or
 - e) With the approval of the State of the Operator, for helicopter operations, in the cabin (see TI Part S-7;2.4 of the Supplement)”.

Note: Cargo compartment classification is described in the ICAO document Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (Doc 9481).

- (2) A Class C cargo or baggage compartment is one not meeting the requirements for either a Class A or B compartment but in which:
 - a) There is a separate approved smoke detector or fire detector system to give warning at the pilot or flight engineer station;
 - b) There is an approved built-in fire-extinguishing system controllable from the pilot or flight engineer station;
 - c) There are means of excluding hazardous quantities of smoke, flames, or extinguishing agent from any compartment occupied by the crew or passengers; and
 - d) There are means of controlling ventilation and draughts within the compartment so that the extinguishing agent used can control any fire that may start within the compartment.
- (3) The above requirements for the loading of dangerous goods bearing the “Cargo Aircraft Only” label do not apply to:
 - a) Flammable liquids (Class 3), Packing Group III, other than those with a subsidiary risk of Class 8;
 - b) Toxic substances (Division 6.1) with no subsidiary risk other than Class 3;

- c) Infectious substances (Division 6.2);
- d) Radioactive material (Class 7);
- e) Miscellaneous dangerous goods (Class 9)
- f) UN 3528—Engine, internal combustion, flammable liquid powered or Engine, fuel cell, flammable liquid powered or Machinery, internal combustion, flammable liquid powered or Machinery, fuel cell, flammable liquid powered; and
- g) UN 3529—Engine, internal combustion, flammable gas powered or Engine, fuel cell, flammable gas powered or Machinery, internal combustion, flammable gas powered or Machinery, fuel cell, flammable gas powered.

12.3.6 Non-pressurized cargo hold

When transporting goods in a non-pressurized cargo compartment, there will be a large pressure differential up to 75 kPa at cruise altitudes. Packages that are filled at a normal atmospheric pressure may not be capable of withstanding this pressure differential. Confirmation of the suitability of the packaging from the shipper should be obtained.

12.3.7 Packages of dangerous goods which have orientation arrows on them.

Packages of dangerous goods containing liquids and which have orientation arrows on them need to be kept upright at all times and need to be stowed so they cannot fall over. It should also be ensured that they are kept upright during loading.

12.3.8 Securing Dangerous Goods

- (1) Packages of dangerous goods need to be secured to prevent movement in flight. This is particularly so for radioactive material, where the securing needs to ensure they cannot move sufficiently to lessen the distance between them and the passengers and/or crew.
- (2) Damaged packages found before or during loading must not be loaded on an aircraft; and any found on an aircraft need to be removed. Over the years there have been many reports about packages of dangerous goods being found damaged on aircraft; for many of them, the subsequent investigation revealed that inadequate handling was the cause. The Technical Instructions now contain the requirement that an operator needs to protect packages from accidental damage caused by dragging or mishandling during loading or the preparation for loading.

12.3.9 Segregation

- (1) Because of the possibility that dangerous goods will be stowed on an aircraft in close proximity to each other, segregation requirements are needed to ensure that incompatible dangerous goods are kept apart; and in some instances that dangerous goods are kept an adequate distance from persons and animals. The main segregation requirements are summarized in Table 7-1 of the Technical Instructions.

- (2) The extent to which explosive substances and articles may be stowed together in an aircraft is determined by their “compatibility”. Explosives are considered to be compatible if they can be stowed together without significantly increasing either the probability of an accident or, for a given quantity, the magnitude of the effects of such an accident.
- (3) Loading of Radioactive Material
 - a) Packages of radioactive material that bear hazard labels that have an all white background colour (White-I) do not emit radiation and do not need to be segregated from persons on an aircraft.
 - b) Packages of radioactive material bearing hazard labels that have a half white and half yellow background colour do emit varying levels of radiation and the amount is indicated by a Transport Index, which is shown as a number on the hazard label. The practice should be followed of keeping exposure to radiation as low as reasonably achievable.
 - c) The separation distances shown in Tables 7-3 and 7-4 from the Technical Instructions are minimum values, and greater distances should be used where feasible. As far as possible, packages of radioactive materials stowed in under floor cargo compartments of passenger aircraft should be placed on the compartment floor. If more than one package, overpack or freight container is placed in the aircraft, the minimum separation distance for each individual package, overpack or freight container must be determined in accordance with the table, on the basis of the sum of the transport index numbers of the individual packages, overpacks or freight containers;
 - d) If the packages, overpacks or freight containers are separated into groups, the minimum distance from the nearest inside surface of the passenger cabin or flight deck partitions or floors to each group is the distance applicable to the sum of the transport indexes within the individual groups, provided that each group is separated from each other group by at least three times the distance applicable to the one that has the larger sum of transport indexes.
- (4) Dry ice needs to be stowed taking into account the ventilation rates of an aircraft and the proximity of animals. An operator needs to ensure that the amount of carbon dioxide given off by all the dry ice on an aircraft can be safely dissipated without affecting the crew or passengers; and that animals are not stowed in close proximity to dry ice so they are starved of oxygen.

12.3.10 Identification of the Presence of Dangerous Goods

- (1) If labels are found missing from packages of dangerous goods during transport, they are to be replaced using the information on the appropriate dangerous goods transport document.
- (2) If dangerous goods are placed in a unit load device, either the labels on the packages are to be visible or a tag needs to be attached to the unit load device

identifying the contents by class/division and whether they are for “Cargo Aircraft Only”. Once the dangerous goods have been removed from a unit load device, the tag on it needs to be removed immediately

12.3.11 Provision of Information

An operator must provide such information in the operations manual and/or other appropriate manuals as will enable flight crews and other employees to carry out their responsibilities with regard to the transport of dangerous goods. This information must include instructions as to the action to be taken in the event of emergencies involving dangerous goods, and details of the location and numbering system of cargo compartments together with:

- The maximum quantity of dry ice permitted in each compartment; and
- If radioactive material is to be carried, instructions on the loading of such dangerous goods.

Where applicable, this information must also be provided to ground handling agents.

12.3.12 Notification to the Pilot-in-Command (NOTOC)

- (1) Ultimately, packages of dangerous goods are loaded on an aircraft and transported to their destination. They may be in an inaccessible hold on a passenger aircraft or on the main deck of a cargo aircraft; irrespective of their location, the pilot-in-command needs to know they are on board and where they have been stowed. In the event of an in-flight emergency, this information may be crucial to the pilot-in-command in deciding what action needs to be taken.
- (2) The operator needs to ensure the pilot-in-command receives written or printed notification of the dangerous goods to be carried as cargo on an aircraft. This notification is usually referred to in the air transport industry as the Notification to Pilot in Command (NOTOC). The Notification is usually one of the last documents to be completed when an aircraft is being prepared for departure; and it is the responsibility of the operator or handling agent to ensure it accurately reflects what is on board. When there are dangerous goods still on the aircraft from a previous sector, information about them needs to be included on the document.
- (3) For each item of dangerous goods the Notification needs to include:
 - The date of the flight
 - The air waybill number (when issued);
 - The proper shipping name, technical name (if applicable) and UN or ID number;

- The class or division and any subsidiary risk(s)
- The packing group and the number of packages; for radioactive material also the category of the package and transport index;
- (for non-radioactive material) the number of packages, the net quantity, or gross weight if applicable, including the units of measurement, of each package, except that this does not apply to dangerous goods where the net quantity or gross weight is not required on the Shipper's Declaration for Dangerous Goods or, when applicable, alternative written documentation and their exact loading location
- (for radioactive material) the number of packages, overpacks, or freight containers, their category, their transport index, if applicable and their exact loading location;
- The net quantity or gross weight; where the dangerous goods all have the same proper shipping name and UN or ID number, only the total quantity and the largest and smallest quantity per package at each stowage location need be given;
- If any packages must be carried on a cargo aircraft only;
- The aerodrome at which the package(s) is to be unloaded;
- Where applicable, an indication that the dangerous goods are being carried under a State exemption; and
- Emergency telephone number where a copy of the information provided to the pilot-in-command can be obtained during the flight if the operator allows the pilot-in-command to provide a telephone number instead of the details about the dangerous goods on board the aircraft;

The information provided to the pilot-in-command must be readily available to the pilot-in-command during flight.

- (4) This information provided to the pilot-in-command should be presented on a dedicated form and should not be by means of air waybills, dangerous goods transport documents, invoices, etc. In addition to the languages which may be required by the State of the Operator, English should be used for the information provided to the pilot-in-command. The information provided to the pilot-in-command must also include a signed confirmation, or some other indication, from the person responsible for loading the aircraft that there was no evidence of any damage to or leakage from the packages loaded on the aircraft. The pilot-in-command must indicate on a copy of the information provided to the pilot-in-command, or in some other way, that the information has been received.
- (5) A legible copy of the information provided to the pilot-in-command must be retained on the ground. This copy must have an indication on it, or with it, that the pilot-in-command has received the information.

- (6) A copy, or the information contained in it, must be readily accessible until after the arrival of the flight, to:
 - the operator flight operations officer, flight dispatcher, or designated ground personnel responsible for flight operations.
 - the aerodromes of last departure and next scheduled arrival point, to which the information refers
- (7) Many Notifications can be very lengthy, particularly if a cargo aircraft has many consignments on board (i.e.: it has been known for a computerized Notification to be approximately 1 meter in length and for a handwritten Notification to consist of approximately 12 pages). In the event of an in-flight emergency, it is likely to be impractical, if not impossible, for the pilot-in-command to pass on details of all the dangerous goods on a long Notification. If the Notification contains a large number of entries and it is likely to be impractical for all the information to be transmitted in an emergency, a summary can be provided to the pilot-in-command, in addition to the Notification, showing at least the quantities and classes/divisions of the dangerous goods in each cargo compartment.
- (8) When an aircraft is carrying consignments for which a dangerous goods transport document is required, appropriate information must be immediately available for use in emergency response to accidents and incidents involving dangerous goods. This can be provided by either:
 - a) the ICAO document Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods (Doc 9481); or
 - b) any other document which provides appropriate information concerning the dangerous goods on board

A check should be made to ensure this information is provided.

- (9) In the event of an aircraft accident or incident, the emergency services on the ground and others may need to establish as quickly as possible what was on an aircraft; and this information may need to come from ground sources unless the pilot-in-command was able to give sufficient information. To aid in providing information in emergencies, a copy of the Notification needs to be retained on the ground; it can be held electronically (i.e.: in a computer system) or as a hard copy (i.e.: an original copy of the Notification or a fax copy). However, the Notification needs to be readily accessible to the airports of departure and next scheduled arrival point; it could be held by the operator or handling agent or anyone else suitable. If the information is held electronically, it does not need to be sent automatically from the airport of departure to that of scheduled arrival; it would be acceptable for the operator or handling agent to have immediate access to the information via the computer. The Notification needs to remain accessible until after the flight.
- (10) Operators must ensure that in the event of an aircraft accident or serious incident, the information contained in the NOTOC must be provided to

emergency services responding to the accident or serious incident without delay. As soon as possible, this information must also be provided to the appropriate authorities of the State of the Operator and the State in which the accident or serious incident occurred.

- (11) In the event of an aircraft incident, the information above needs only to be provided to emergency services if they request it.

12.3.13 Damaged Packages and Contaminated Cargo or Baggage

- (1) If packages of dangerous goods are found damaged or leaking they should never be ignored. There is the possibility that if a package is damaged it may leak. Even if no leakage is immediately visible, a package may be damaged in such a way that inner packaging break allowing dangerous goods to leak into the outer packaging; with the possibility that eventually the integrity of the outer packaging will be destroyed. The leakage of some dangerous goods could cause property damage (i.e.: through a corrosive effect on metal) or a fire (i.e.: by reacting with organic material, such as leather or cotton, to produce great heat) or injury to a person handling either the package or any article contaminated with the leakage. Operators and handling agents are required to take action if damaged or leaking packages of dangerous goods are discovered. Note that metal drums often have minor dents in them that happen during handling; these dents do not constitute the damage referred to in this Chapter, unless there is some other evidence (i.e.: seepage) that suggests the dent has destroyed the integrity of the package.
- (2) If a damaged or leaking package of dangerous goods is found on an aircraft, it is to be removed without delay. All other packages in the consignment are to be checked to confirm they are in a fit condition and are not contaminated. Verification is to be made to ensure that no other cargo or baggage has been contaminated.
- (3) If a package in a consignment leaks for an apparently unknown reason and all the other packages in the consignment are of the same type, there is the possibility that other packages are also leaking; in these circumstances it is important to make a thorough check to confirm that all other packages are fit for transport.
- (4) Given the nature of dangerous goods, dealing with leaking packages may be specialist task; since they need to be disposed of safely and contaminated articles either cleaned or disposed of. In many countries, the disposal of dangerous goods is subject to national law for the protection of the environment; operators may need to have arrangements with local specialist organizations for the disposal of items that are found leaking or damaged.
- (5) A package of an infectious substance may be damaged and it may not be apparent whether or not it is leaking. Since an infectious substance may not be detectable by any of the senses, a damaged package should always be

regarded as potentially leaking. If a damaged or leaking package is found to contain an infectious substance:

- Handling of the package should be avoided or kept to a minimum;
- Adjacent packages need to be inspected for contamination and any that are contaminated put aside;
- The appropriate public health authority or veterinary authority need to be notified; and
- The shipper and or the consignee need to be notified.

Dealing with a leaking package of an infectious substance is a specialist task; the advice of the shipper or consignee or their expertise will always be needed to deal effectively with the package and any contamination.

- (6) As for infectious substances, a package of radioactive material may be damaged and it may not be apparent whether or not it is leaking. However, inner containers in a package of radioactive material are more robust than for infectious substances and may survive some considerable degree of damage to the outer packaging. Nevertheless, radiation from radioactive material cannot be detected by any of the senses and expert advice will be needed to deal with a damaged package, whether or not it is suspected to be leaking. Note that there is an assumption that any radiation can be detected on radiation monitors, etc.; but it should be noted that different monitors detect different types of radiation. A monitor that detects gamma radiation (which is the external radiation that can be detected emanating from some packages in normal circumstances) may not detect alpha or beta radiation. If a damaged or leaking package is found to contain radioactive material:

- Access to the package needs to be restricted;
- A qualified person needs to assess the extent of contamination and the resultant radiation level of the package;
- Where applicable, the qualified person also needs to assess the extent of contamination of the aircraft, cargo and baggage and any aircraft equipment and the adjacent loading/unloading areas;
- Any aircraft or aircraft equipment which has been contaminated by radioactive material, or which has a radiation level above the limits in Part 4; 9.1.2 of the Technical Instructions, needs to be taken out of service and decontaminated; and any remaining contamination and the radiation level are to be reduced to the prescribed limits; and
- If necessary to protect property and the environment additional steps, as required by the relevant competent authority, need to be taken to deal with the consequences of the damage to or leakage of a package containing radioactive material.

- (7) Cargo or baggage that has been contaminated by leaking dangerous goods may not immediately show any adverse reaction or the contamination may

not be apparent (i.e.: a liquid may look like rainwater). In time, some dangerous goods may react with the packaging material used for cargo or the leather, plastic, etc., used for baggage, causing damage or a catastrophic reaction, such as a fire. If general cargo or baggage appears to have been contaminated by an unknown substance and it is suspected that it was dangerous goods steps need to be taken to identify the nature and source of the contamination before the cargo or baggage is loaded on an aircraft.

- (8) If it is confirmed that dangerous goods were the cause of the contamination, the cargo or baggage needs to be isolated and steps taken to nullify the hazard before the cargo or baggage is transported by air. If there is doubt whether the contamination has been successfully removed or nullified, the cargo or baggage should not be transported.

Examples of inspection checklists are found in; Document and Records Management System (DRMS)

OPS-CLDGI-405 – Ground Handling Facilities Process Inspection
 OPS-CLDGI-406 – Ramp & In-Flight Process Inspection
 OPS-CLDGI-408 – Package or Article Inspection

12.4 Exceptions

12.4.1 Some general exceptions are present in the Technical Instructions and should be taken under considerations during a process inspection. These being where the dangerous goods are:

- To provide, during flight, medical aid to a patient;
- To provide, during flight, veterinary aid or a humane killer for an animal¹;
- For dropping in connection with agricultural, horticultural, forestry or pollution control activities;
- For dropping or triggering in connection with avalanche control activities
- To provide, during flight, aid in connection with search and rescue operations;
- Vehicles carried in aircraft designed or modified for vehicle ferry operations;
- Required for the propulsion of the means of transport or the operation of its specialized equipment during transport (e.g. refrigeration units) or that are required in accordance with the operating regulations (e.g. fire extinguishers);
- Contained within items of excess baggage being sent as cargo;
- Articles and substances which would otherwise be classified as dangerous goods but which are required to be aboard the aircraft in accordance with the pertinent airworthiness requirements and operating regulations or that are authorized by the State of the Operator to meet special requirements;

¹

- Aerosols, alcoholic beverages, perfumes, colognes, liquefied gas lighters and portable electronic devices containing lithium metal or lithium ion cells or batteries provided that the batteries meet the provisions of Table 8-1, Item 1) carried aboard an aircraft by the operator for use or sale on the aircraft during the flight or series of flights, but excluding non- refillable gas lighters and those lighters liable to leak when exposed to reduced pressure;
- Dry ice intended for use in food and beverage service aboard the aircraft; and
- Hygiene Products, alcohol-based hand sanitizers and alcohol-based cleaning products carried aboard an aircraft by the operator for use on the aircraft during the flight or series of flights for the purposes for passenger and crew hygiene.
- Electronic devices, such as electronic flight bags, personal entertainment devices, and credit card readers, containing lithium metal or lithium ion cells or batteries and spare lithium batteries for such devices carried aboard an aircraft by the operator for use on the aircraft during the flight or series of flights, provided that the batteries meet the provisions of Table 8-1, Item 1). Spare lithium batteries must be individually protected so as to prevent short circuits when not in use. Conditions for the carriage and use of these electronic devices and for the carriage of spare batteries must be provided in the operations manual and/or other appropriate manuals as will enable flight crew, cabin crew and other employees to carry out the functions for which they are responsible.

12.4.2 Some dangerous goods are not required to appear on the Notification to Pilot in Command. These are:

- UN 2807 Magnetized material
- UN 2908 Radioactive material, excepted package — empty packaging
- UN 2909 Radioactive material, excepted package — articles manufactured from natural uranium or depleted uranium or natural thorium
- UN 2910 Radioactive material, excepted package — limited quantity of material
- UN 2911 Radioactive material, excepted package — instruments or articles
- UN 3090 Lithium metal batteries (including lithium alloy batteries) when meeting the requirements of Packing Instruction 968, Section II
- UN 3091 Lithium metal batteries contained in equipment (including lithium alloy batteries) when meeting the requirements of Packing Instruction 970, Section II
- UN 3091 Lithium metal batteries packed with equipment (including lithium alloy batteries) when meeting the requirements of Packing Instruction 969, Section II
- UN 3245 Genetically modified micro-organisms
- UN 3245 Genetically modified organisms

- UN 3373 Biological substance, Category B
- UN 3480 Lithium ion batteries (including lithium ion polymer batteries) when meeting the requirements of Packing Instruction 965, Section II
- UN 3481 Lithium ion batteries contained in equipment (including lithium ion polymer batteries) when meeting the requirements of Packing Instruction 967, Section II
- UN 3481 Lithium ion batteries packed with equipment (including lithium ion polymer batteries) when meeting the requirements of Packing Instruction 966, Section II

12.5 Common Non-Compliances

The following are common non-compliances frequently observed in the past:

- Failure to train personnel
- Holes in training history
- Missing training files
- Outdated publication
- Failure to ensure that up to date information is available to staff.
- Lack of segregation
- Failure to ensure that spare labels are available to staff
- Wheelchair battery not disconnected
- Wheelchair not secured
- Dangerous goods not on NOTOC
- No NOTOC
- Staff did not provide NOTOC to Crew
- Unsecured dangerous goods
- Radioactive materials miss loaded
- Wet Package
- Dangerous goods loaded in wrong aircraft
- Dangerous Goods not removed
- No ULD Tag
- DG not off loaded
- DG in wrong location

13. Surveillance Procedures for Passenger Terminal Facilities

13.1 General Set-Up

A Passenger terminal facility usually has the following areas:

- A non-restricted area, open to the public which includes:
 - An area where passengers are checked-in
 - An area where passengers can purchase tickets
- A restricted area limited to those authorized to be present which includes:
 - An area where passengers can board aircrafts
 - An area where passengers can disembark aircrafts
 - An area where passengers can retrieve their baggage
- An area where the records will be kept

13.2 Risk Mitigation

The level of risk involved in the inspection of passenger terminals is low. Nevertheless, care should be taken when dealing with forbidden dangerous goods found in baggage.

13.3 Inspection Areas

13.3.1 A process inspection of a passenger terminal facility includes the following topics:

- Identification of Passenger Handling Facility;
- Past Occurrences;
- Notices warning passengers of dangerous goods they are forbidden from carrying;
- Training Records;
- Reference Documents and their availability to staff;
- Handling of wheelchairs or other battery-powered mobility aids with non-spillable batteries;
- Handling of wheelchairs or other battery-powered mobility aids with spillable batteries;
- Handling of lithium-ion battery-powered wheelchairs or other battery-powered mobility aids;
- Handling of Dry Ice in Passenger or Crew baggage;
- Items Commonly Seized;
- Available Tools; and
- Duty Free Stores (for sale of forbidden items)

- Procedure for ensuring items restricted to carry on baggage are not loaded in the hold (i.e. when carry on baggage has to be loaded in the hold when there is insufficient space in the cabin).

13.3.2 Operator's Responsibilities for Providing Information to Passengers

- (1) In addition to the common inspection to inspect (training, reference documents, documentation, etc.) the Technical Instructions requires that the operator (or his handling agent) provides information to passengers about the types of dangerous goods forbidden from transporting aboard aircraft.
- (2) Passengers can create safety hazards when they take onboard aircraft, forbidden items. Over the years there have been many in-flight incidents and several accidents that have been attributed to what passengers had taken on board in their baggage. To counter the problem, operators need to be proactive and to ensure their staff and those of their handling agents are trained as required by the Technical Instructions.
- (3) Case Study
 - At 12:36 on August 24 1999, local time (04:36 UTC), Flight No. 873 (serving Taipei - Hualien) had just landed and was rolling on Runway 21 at the Hualien Airport, when an explosion was heard in the front section of the passenger cabin, followed by smoke and then fire. The pilot immediately braked, bringing the aircraft to a stop on the runway. Then, after lowering the passenger evacuation slides and initiating an emergency passenger evacuation, the pilot proceeded to call the tower for help.
 - Upon receiving this call, fire squads at both the Hualien Airport and the Air Force Wing rushed to the scene to extinguish the fire. The fire was eventually put out at 13:45. While the upper part of the fuselage was completely destroyed, 90 passengers plus the crew of 6 was safely evacuated. Casualties included 14 seriously wounded passengers, one of whom subsequently died, and another 14 that suffered minor injuries. Most of the wounded passengers suffered burns.
 - An investigation was initiated. The probable cause to the accident was identified as a flammable liquid (gasoline) inside bleach and softener bottles and sealed with silicone was carried on board the aircraft with a motorcycle battery. A combustible vapor formed as the leaking gasoline filled the stowage bin, and the impact of the landing aircraft created a short in a battery. The short ignited the gasoline vapor and created the explosion. Both Gasoline and a motorcycle battery are not permitted in carry-on or checked baggage.
- (4) To avoid such situation the following requirements were established:
 - An operator must ensure that information on the types of dangerous goods which a passenger is forbidden to transport aboard an aircraft is provided at the point of ticket purchase or, if this is not practical, made available in another manner to passengers prior to the check-in process.

Information provided via the Internet may be in text or pictorial form but should be such that ticket purchase cannot be completed until the passenger or a person acting on their behalf, has indicated that they have understood the restrictions on dangerous goods in baggage.

- An operator or the operator's handling agent and the airport operator must ensure that notices warning passengers of the types of dangerous goods which they are forbidden to transport aboard an aircraft are prominently displayed, in sufficient number, at each of the places at an airport where tickets are issued, passengers are checked in and aircraft boarding areas are maintained, and at any other location where passengers are checked in. These notices must include visual examples of dangerous goods forbidden from transport aboard an aircraft.
- An operator, of passenger aircraft, should have information on those dangerous goods which may be carried by passengers in accordance with TI 8; 1.1.2 made available prior to the check-in process on their websites or other sources of information.
- When provision is made for the check-in process to be completed remotely (e.g. via the Internet), the operator should ensure that information on the types of dangerous goods which a passenger is forbidden to transport aboard an aircraft is provided to passengers.
- Information may be in text or pictorial form but should be such that the check-in process cannot be completed until the passenger or a person acting on their behalf, has indicated that they have understood the restrictions on dangerous goods in baggage.
- When provision is made for the check-in process to be completed remotely (e.g. via the Internet), the operator must ensure that information on the types of dangerous goods which a passenger is forbidden to transport aboard an aircraft is presented to passengers. Information may be in text or pictorial form but must be such that the check-in process cannot be completed until the passenger, or a person acting on their behalf, has been presented with this information and indicated that they have understood the restrictions on dangerous goods in baggage.
- When provision is made for the check-in process to be completed at an airport by a passenger without the involvement of any other person (e.g. automated check-in facility), the operator or the airport operator must ensure that information on the types of dangerous goods which a passenger is forbidden to transport aboard an aircraft is presented to passengers. Information should be in pictorial form and must be such that the check-in process cannot be completed until the passenger has been presented with this information and indicated that they have understood the restrictions on dangerous goods in baggage.

- (5) This is one of the reasons why Annex 18 now places the responsibility on States for ensuring information is promulgated for passengers.

“9.3 Information to passengers

Each Contracting State shall ensure that information is promulgated in such a manner that passengers are warned as to the types of dangerous goods which they are forbidden from transporting aboard an aircraft as provided for in the Technical Instruction.”

An example of a Passenger Handling Facility Process Inspection Checklists are in; Document and Records Management System (DRMS)
 OPS-CLDGI-404 – Passenger Handling Facility Process Inspection

13.4 Exceptions and Special Provisions

- 13.4.1 The Technical Instructions contains exceptions for dangerous goods in small quantities carried in carry-on or checked baggage or on the person.
- 13.4.2 The crew on an aircraft can only have the items that passengers are permitted to have. Passengers are permitted to take only certain items. All passengers are likely to have some dangerous goods (e.g.: deodorants, shaving foam, duty-free purchases). Some of the items are only likely to be taken on an aircraft by passengers with specialist need (e.g. wheelchairs with batteries). The full list of dangerous goods passengers is permitted to have is in Part 8 of the Technical Instructions. There are quantity limitations and conditions that apply to all of the items. Some items need operator approval prior to transport.
- 13.4.3 Dangerous goods that are not on the list of permitted items are forbidden in or as passenger’s baggage. Neither operators nor their staff can permit the transport of such items without approval from the relevant authority.
- 13.4.4 The following is the list of dangerous goods that passengers and crew are permitted to have, subject to certain conditions which are specified in the Technical Instructions. Specific limitations can be found in Part 8 of the Technical Instructions:
- (1) Medical Necessities
- Small gaseous oxygen or air cylinders required for medical use
 - Cylinders of a gas worn for the operation of mechanical limbs
 - Non-radioactive medicinal articles (including aerosols).
 - Radioisotopic cardiac pacemakers or other devices implanted into a person
 - Radio-pharmaceuticals contained within the body of a person as the result of medical treatment
 - Battery-powered wheelchairs or other similar mobility aids with non-spillable batteries
 - Battery-powered wheelchairs or other similar mobility aids with spillable batteries

- Lithium-ion battery-powered wheelchairs or other similar mobility aids
 - Portable medical electronic devices (Automated External Defibrillators (AED), Nebulizer, Continuous Positive Airway Pressure (CPAP), etc.) containing lithium metal or lithium ion cells or batteries carried by passengers for medical use.
 - Small medical or clinical thermometer which contains mercury, for personal use.
- (2) Articles used in dressing or grooming
- Toiletry articles (including aerosols).
 - Hair curlers containing hydrocarbon gas
 - Alcoholic beverages
 - Aerosols for sporting or home use
 - Securely packaged cartridges
 - Small packet of safety matches or a cigarette lighter
 - Battery-powered equipment capable of generating extreme heat, which could cause a fire if activated (e.g. underwater high intensity lamps)
 - Avalanche rescue backpack
 - Small cylinders fitted into a self-inflating life-jacket for inflation purposes
 - Portable electronic devices (watches, calculating machines, cameras, cellular phones, laptop computers, camcorders, etc.) containing lithium or lithium ion cells or batteries
 - Fuel cells used to power portable electronic devices (for example cameras, cellular phones, laptop computers and camcorders) and spare fuel cell cartridges
 - Dry ice when used to pack perishables
 - Mercurial barometer or mercurial thermometer carried by a representative of a government weather bureau or similar official agency
 - Instruments containing radioactive material when carried by staff members of the Organization for the Prohibition of Chemical Weapons (OPCW).
 - Energy efficient light bulbs
- (3) Security type equipment such as attaché cases, cash boxes, cash bags, etc. incorporating dangerous goods as part of this equipment are totally forbidden except as provided for in Table 8-1 of the Technical Instructions.

13.4.5 Special Provisions

- (1) Special Provision A98 - Aerosols, gas cartridges and receptacles, small, containing gas with a capacity not exceeding 50 ml, containing no constituents subject to these Instructions other than a Division 2.2 gas, are not subject to these Instructions when carried as cargo unless their release could cause extreme annoyance or discomfort to crew members so as to prevent the correct performance of assigned duties. The words “not restricted” and the special provision number A98 must be provided on the air waybill when an air waybill is issued.
- (2) Special Provision A152 - Insulated packaging conforming to the requirements of Packing Instruction 202 containing refrigerated liquid nitrogen fully absorbed in a porous material are not subject to these Instructions provided the design of the insulated packaging would not allow the build-up of pressure within the container and would not permit the release of any refrigerated liquid nitrogen irrespective of the orientation of the insulated packaging and any outer packaging or overpack used is closed in a way that will not allow the build-up of pressure within that packaging or overpack. When used to contain substances not subject to these Instructions, the words “not restricted” and the special provision number A152 must be provided on the air waybill when an air waybill is issued.
- (3) Special Provision A199 - Nickel-metal hydride batteries or nickel-metal hydride battery-powered devices, equipment or vehicles having the potential of a dangerous evolution of heat are not subject to these Instructions provided they are prepared for transport so as to prevent:
 - a) a short circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals, or, in the case of equipment, by disconnection of the battery and protection of exposed terminals); and
 - b) unintentional activation.

The words “Not Restricted” and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued.

13.4.6 Exceptions
 Some general exceptions are present in the Technical Instructions and should be taken under considerations during a process inspection. These being where the dangerous goods are:

- To provide, during flight, medical aid to a patient;
- To provide, during flight, veterinary aid or a humane killer for an animal;
- Contained within items of excess baggage being sent as cargo;
- Articles and substances which would otherwise be classified as dangerous goods but which are required to be aboard the aircraft in accordance with the pertinent airworthiness requirements and operating regulations or that are authorized by the State of the Operator to meet special requirements;

- Aerosols, alcoholic beverages, perfumes, colognes, liquefied gas lighters and portable electronic devices containing lithium metal or lithium ion cells or batteries provided that the batteries meet the provisions of Table 8-1, Item 1) carried aboard an aircraft by the operator for use or sale on the aircraft during the flight or series of flights, but excluding non- refillable gas lighters and those lighters liable to leak when exposed to reduced pressure;
- Dry ice intended for use in food and beverage service aboard the aircraft; and
- Hygiene Products, alcohol-based hand sanitizers and alcohol-based cleaning products carried aboard an aircraft by the operator for use on the aircraft during the flight or series of flights for the purposes for passenger and crew hygiene.
- Electronic devices, such as electronic flight bags, personal entertainment devices, and credit card readers, containing lithium metal or lithium ion cells or batteries and spare lithium batteries for such devices carried aboard an aircraft by the operator for use on the aircraft during the flight or series of flights, provided that the batteries meet the provisions of Table 8-1, Item 1). Spare lithium batteries must be individually protected so as to prevent short circuits when not in use. Conditions for the carriage and use of these electronic devices and for the carriage of spare batteries must be provided in the operations manual and/or other appropriate manuals as will enable flight crew, cabin crew and other employees to carry out the functions for which they are responsible.

13.5 Common Non-Compliances

The following are common non-compliances frequently observed in the past:

- Insufficient notices warning passengers of dangerous goods that are forbidden in baggage
- Forbidden dangerous goods in passenger baggage
- Incomplete in training history
- Outdated publication
- Failure to ensure that up to date information is available to staff.
- Failure to provide tools to comply with approved procedures
- Failure to have a process to report dangerous goods discovered in passenger baggage.
- Liquid oxygen onboard
- Mobility Aid battery in cabin (except lithium battery)
- Dangerous goods in COMAIL

14. Surveillance Procedures for Shipping Facilities

14.1 General Set-Up

Shipping facilities usually has the following areas:

14.1.1 A restricted area limited to those authorized to be present which include:

- An area where dangerous goods are stored
- An area where packages containing dangerous goods are prepared for shipping
- An area where packages containing dangerous goods are received

14.1.2 An area where the records will be kept

14.2 Risk Mitigation

Some dangerous goods such as explosives and gas cylinders may be hazardous if not handled properly. Care must be taken when handling them during a process inspection.

14.3 Inspection Areas

14.3.1 A process inspection of a shipping facility includes the following topics:

- Identification of shipping facilities;
- Past Occurrences;
- Identification of Employees;
- Training Records;
- Reference Documents;
- Transport Documents;
- Packages Inspected; and
- Available Tools.

14.3.2 Shippers Inspection

- (1) Before a person offers any package or overpack of dangerous goods for transport by air, that person shall ensure that the dangerous goods are not forbidden for transport by air and are properly classified, packed, marked, labelled and accompanied by a properly executed dangerous goods transport document as specified in Annex 18 and the Technical Instructions.
- (2) The frequent shippers are often identified during the consignment inspections or audits at the operator's or handling agent's premises.
- (3) The aim of inspecting frequent shippers is to determine whether the shipper has procedure in place to meet the shipper's responsibilities of the Technical Instructions.

- (4) A shipper's process inspection is carried out to ensure that dangerous goods are properly classified, packaged, marked and labelled, the dangerous goods transport document is properly completed and declaration signed and the persons involved in the preparation of the shipments have received training enable them to carry out their responsibilities. When an inspection is scheduled, adequate notice should be given to the shipper and arrangements made to meet the person responsible of the shipping.

**An example of a Shipping Facilities Process Inspection Checklist is found in;
 Document and Records Management System (DRMS)
 OPS-CLDGI-407 – Shipping Facilities Process Inspection**

14.4 Special Provisions

The following are special provisions which should be kept in mind during a process inspection in a shipping facility

- 14.4.1 Special Provision A19 - Fire extinguishers under this entry may include installed actuating cartridges (cartridges, power device of Division 1.4C or 1.4S), without changing the classification of Division 2.2 provided the total quantity of deflagrating (propellant) explosives does not exceed 3.2 grams per extinguishing unit.

Fire extinguishers must be manufactured, tested, approved and labelled according to the provisions applied in the State of Manufacture. Fire extinguishers under this entry include:

Note. — Provisions applied in the State of Manufacture means the provisions applicable in the State of Manufacture or those applicable in the State of use.

- a) portable fire extinguishers for manual handling and operation;
- b) fire extinguishers for installation in aircraft;
- c) fire extinguishers mounted on wheels for manual handling;
- d) fire extinguishing equipment or machinery mounted on wheels or wheeled platforms or units transported similar to (small) trailers; and
- e) fire extinguishers composed of a non-rollable pressure drum and equipment, and handled, for example, by fork lift or crane when loaded or unloaded.

Cylinders which contain gases for use in the above-mentioned extinguishers or for use in stationary fire-fighting installations must meet the requirements in 6.4 and all requirements applicable to the relevant dangerous goods when these cylinders are transported separately.

- 14.4.2 Special Provision A32 - Safety devices, electrically initiated and safety devices, pyrotechnic installed in vehicles, vessels or aircraft or in completed components such as steering columns, door panels, seats, etc., which are not capable of inadvertent activation are not subject to these Instructions when carried as cargo. The words "not restricted"
- 14.4.3 Special Provision 51 - Irrespective of the limit specified in column 11 of Table 3 -1, aircraft batteries up to a limit of 100 kg net mass per package may be transported.

Transport in accordance with this special provision must be noted on the dangerous goods transport document.

Note. — This special provision applies to UN 2794 Batteries, wet, filled with acid and UN 2795 Batteries, wet, filled with alkali only.

14.4.4 Special Provision A59 - A tire assembly unserviceable or damaged is not subject to these Instructions if the tire is deflated to a gauge pressure of less than 200 kPa at 20°C. A tire assembly with a serviceable tire is not subject to these Instructions provided the tire is not inflated to a gauge pressure exceeding the maximum rated pressure for that tire. However, such tires (including valve assemblies) must be protected from damage during transport, which may require the use of a protective cover.

14.4.5 Special Provision A70 – Internal combustion or fuel cell engines or machinery being shipped either separately or incorporated into a vehicle, machine or other apparatus, without batteries or other dangerous goods, are not subject to these Instructions when carried as cargo provided that:

a) for flammable liquid powered engines:

- 1) the engine is powered by a fuel that does not meet the classification criteria for any class or division; or
- 2) the fuel tank of the vehicle, machine or other apparatus has never contained any fuel or the fuel tank has been flushed and purged of vapours and adequate measures taken to nullify the hazard; and
- 3) the entire fuel system of the engine has no free liquid and all fuel lines are sealed or capped or securely connected to the engine and vehicle, machinery or apparatus.

b) for flammable gas-powered internal combustion or fuel cell engines:

- 1) the entire fuel system must have been flushed, purged and filled with a non-flammable gas or fluid to nullify the hazard;
- 2) the final pressure of the non-flammable gas used to fill the system does not exceed 200 kPa at 20°C;
- 3) the shipper has made prior arrangements with the operator; and
- 4) the shipper has provided the operator with written or electronic documentation stating that the flushing, purging and filling procedure has been followed and that the final contents of the engine(s) have been tested and verified to be non-flammable.

Multiple engines may be shipped in a unit load device provided that the shipper has made prior arrangements with the operator(s) for each shipment.

When this special provision is used, the words “not restricted” and the special provision number A70 must be provided on the air waybill when an air waybill is issued.

- 14.4.6 Special Provision A87 - Articles which are not fully enclosed by packaging, crates or other means that prevent ready identification are not subject to the marking requirements or the labelling requirements.
- 14.4.7 Special Provision A111 - Oxygen generators, chemical, that have passed their expiration date, are unserviceable or that have been used are forbidden for transport.
- 14.4.8 Special Provision A144 - Protective breathing equipment (PBE) containing a small chemical oxygen generator for use by aircrew members may be transported on passenger aircraft in accordance with Packing Instruction 5 65 subject to the following conditions:
- a) the PBE must be serviceable and contained in the manufacturer's original unopened inner packaging (i.e. vacuum sealed bag and protective container);
 - b) the PBE may only be consigned by, or on behalf of, an operator in the event that a PBE(s) has been rendered unserviceable or has been used and there is a need to replace such items so as to restore the number of PBEs on an aircraft to that required by pertinent airworthiness requirements and operating regulations;
 - c) a maximum of two PBE may be contained in a package;
 - d) the statement "Aircrew protective breathing equipment (smoke hood) in accordance with Special Provision A144" must be:
 1. included on the dangerous goods transport document;
 2. marked adjacent to the proper shipping name on the package.

If the above conditions are met, the requirements of Special Provision A1 do not apply. All other requirements applicable to chemical oxygen generators must apply except that the "cargo aircraft only" handling label must not be displayed.

- 14.4.8 Special Provision A199 - The UN number UN 3496 is only applicable in sea transport. Nickel-metal hydride batteries or nickel-metal hydride battery-powered devices, equipment or vehicles having the potential of a dangerous evolution of heat are not subject to these Regulations provided they are prepared for transport so as to prevent:
- a) a short circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or, in the case of equipment, by disconnection of the battery and protection of exposed terminals); and
 - b) unintentional activation.

The words "Not Restricted" and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued

14.5 Common Non-Compliances

The following are common non-compliances frequently observed in the past:

- Failure to train personnel
- Incomplete in training history

- Missing training files
- Outdated publication
- Failure to ensure that up to date information is available to staff.
- Undeclared dangerous goods COMAT
- Non-dangerous goods shipment in package with DG labels

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15. Surveillance Procedures for Other Facilities

15.1 General

15.1.1 There may be situations where a dangerous goods inspection is necessary in a location, other than those mentioned in the previous chapters. These may be as an example:

- Postal offices;
- Operator's sales agents booking flights for passengers and answering questions regarding what they can or cannot bring onboard;

15.1.2 While this manual does not have specific checklists exist for these, a Dangerous Goods Inspector can use any of them and indicate non-applicable in some of the areas.

15.1.3 Of particular concerns should be, as applicable:

- Identification of the organization or agency facilities;
- Past Occurrences;
- Hidden Dangerous Goods Warning;
- Identification of Employees;
- Training Records;
- Reference Documents;
- Client profile; and
- Available Tools;

15.2 Inspection Guidelines

15.2.1 Package inspection

- (1) A package inspection looks at the external appearance of all the packages of dangerous goods currently held by the operator or handling agent, irrespective of whether they are due for transport or have been transported, providing they are still in the operator's or handling agent's custody.
- (2) The inspection will verify that the marking and labelling requirements have been met, that the type of packaging used is permitted and of the correct UN specification, for radioactive material packages, the radiation level and that the packages are, or would appear to have been, in a fit state for transport.
- (3) Package of dangerous goods should only be opened in exceptional circumstances and then only with extreme caution.
- (4) If a package is to be opened, the potential hazard from the contents needs to be taken into account and care exercised.
- (5) Any package opened during an inspection must, before being forwarded to the consignee, be restored to its original condition by qualified persons.

- (6) During the course of their duties, Security Staff may be considering opening packages consigned as cargo. However, packages of dangerous goods should be opened in exceptional circumstances with the assistance of specialist qualified persons.

15.2.2. Documents inspection

- (1) A document inspection is to determine, as far as possible, that a dangerous goods consignment meets all applicable requirements.
- (2) Information is contained in several documents and to transport out a thorough check it is necessary to cross refer from one document to another. Where the operator or handling agent has packages of dangerous goods in his premises, the associated documents are to be checked.
- (3) Where there are no packages available, a document check only is made. The method is to look at the documents for every consignment that was carried during a specific period.
- (4) For export consignments, the documents that need to be inspected are:
 - a) The Acceptance Checklist;
 - b) Other documents relating to a consignment that may assist in assessing it.
- (6) The Acceptance checklist is inspected to establish that the operator or handling agent uses a form or other system which allows for completion by the acceptance clerk, either manually or mechanically.
- (7) The acceptance checklist will indicate if consignments of dangerous goods were accepted in accordance with the requirements or that any errors were correctly identified and the consignment rejected.

15.2.3 Inspection of general cargo for suspected undeclared dangerous goods

- (1) There is an increasing tendency for undeclared dangerous goods to be consigned as general cargo or in the mail. There are safety implications with this practice, since it results, among other things, in the commander not being aware of all the potential hazards that may be present on an aircraft.
- (2) Inspections of general cargo are made in association with consignment checks at cargo acceptance facilities. Inspections of general cargo are helpful to know what is transported and undeclared dangerous goods can be discovered during those inspections.
- (3) The method of carrying out an inspection is to examine carefully all the general cargo or a representative sample of it, or to examine the documentation available such as air waybill or invoice.
- (4) When inspecting a package, concentrate on looking for hazard labels, UN packaging specification markings and other markings and labels that are required to be used when consigning declared dangerous goods or which relate to identification of substances hazardous to health; documents in pouches attached to packages should be checked for any that identify the

hazards of the contents. Should anything be found which appears to be suspicious, the relevant transport documents (such as an invoice or air waybill) should be checked for any additional indications which suggest the goods are dangerous goods or conversely that they are not. If it cannot be ascertained with certainty whether or not the goods are dangerous goods, the operator or handling agent should be asked to retain the goods and the shipper should be contacted.

**An example of a Package or Article Inspection Checklist are found in;
 Document and Records Management System (DRMS)**

OPS-CLDGI-405 – OPS - Ground Handling Facilities Process Inspection
 OPS-CLDGI-406 – OPS - Ramp & In-Flight Process Inspection
 OPS-CLDGI-407 – OPS - Shipping Facility Process Inspection
 OPS-CLDGI-408 – OPS - Package or Article Inspection

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16. Accident and Incident Occurrences Management

16.1 Introduction

Thailand was established the Civil Aviation Authority of Thailand Requirement No.22 on 'Reporting of Civil Aviation Occurrences requirement for reporting, investigating and compiling information concerning dangerous goods accident or incident which occur on Thailand territory and which involve the transport of dangerous goods originating in or destined for another State.

Dandgerous Goods accidents and incidents need to be recorded and investigated to establish their cause in order to discover, amog other things, if requirements of the Technical Instructions are inadequate or there has been a violation of them. CAAT will participate in cooperative efforts with other States concerning violations of dangerous goods regulations with the aim of eliminating such violation.

16.2 Reporting of Dangerous Goods Accidents and Incidents

16.2.1 An operator must report dangerous goods accidents or incidents to CAAT and the State in which the accident or incident occurred in accordance with the reporting requirements of those appropriate authorities. A suspected violation of the requirements (undeclared or mis-declared dangerous goods) must also be reported to CAAT and the appropriate authorities of the State in which this occurred. To aid the reporting of dangerous goods accidents and incidents by operators, a recommended form for reporting is included. 16.2.2 When a report is received of a dangerous goods accident or incident it must be checked as quickly as possible to confirm that all relevant details have been reported. If any details are missing, the reporter is to be asked to supply them as soon as they are available. A review will be undertaken of all information currently available in order to establish what action needs to be taken. If it is decided that no action needs to be taken or action is not possible, the record is annotated to show this. The review will aim to establish whether or not the incident is regarded as serious (ie: there is evidence of non-compliance with the Technical Instructions such that there was a potentially unsafe situation) or not serious (eg: misunderstanding of the requirements but not resulting in a potentially unsafe situation).

16.2.3 The aims of investigating a dangerous goods accident and incident are to establish its Potential seriousness and determine the cause so that action can be taken to prevent a recurrence. Also, any other State from which, or through which, the dangerous goods travelled needs to be notified quickly of all relevant details, particularly if it seems likely that persons in that State may have been exposed to the dangerous goods.

16.2.4

An example of a report form is found in; Document and Records Management System (DRMS)

CAAT-OPS-DG-402 - Dangerous Goods Occurrence Report

To aid the reporting of dangerous goods accidents and incidents by operators, a recommended form for reporting is included.

16.3 Investigating of Dangerous Goods Accidents and Incidents

As required by Annex 18, with the aim of preventing the recurrence of dangerous goods accidents and incidents, The Civil Aviation Authority of Thailand shall establish procedures for investigating and compiling information concerning such accidents and incidents which occur on its territory and which involve the transport of dangerous goods originating in or destined for another State.

16.3.1 Dangerous Goods Accident

A dangerous goods accident is a very serious occurrence and may involve air accident investigators. If there has been a dangerous goods accident any request for information or assistance from other organizations must be dealt with immediately. Any request from another State for details about the dangerous goods on board an aircraft involved in an accident in Thailand must also be dealt with immediately.

Where Thailand is the State in which a dangerous goods accident occurs involving goods originating in or destined for another State CAAT shall institute an investigation into the circumstances of the accident. If it becomes known or is suspected that dangerous goods were a causative factor in an Aircraft accident, any dangerous goods investigation will need to be co-ordinated with the air accident investigation. During such investigations CAAT inspectors shall be guided by the Technical Instructions, Part S-7;4.

16.3.2 Dangerous Goods Incidents

16.3.2.1 Where Thailand is the State in which a dangerous goods incident occurs involving goods originating in or destined for another State CAAT shall carry out an investigation into the circumstances of the incident such as is considered appropriate to its seriousness.

16.3.2.2 Preliminary enquiries will be made to establish what has happened, who is involved and What evidence is available. The enquiries will identify if the incident warrants investigation by professional investigators with the aim of securing evidence for prosecution. If professional investigation is not justified or not possible (eg: all evidence needed is not available), a detailed investigation has still

to be carried out. This has to be thorough, to confirm the cause and identify the organizations or individuals responsible for the incident.

- 16.3.2.3 When making preliminary enquiries it has to be determined whether the dangerous goods in their current state are a danger to persons. If they are, arrangements must be made to make them safe or dispose of them as quickly as possible, using expert assistance. If an investigation is to be made of the dangerous goods, it is essential that personal safety be taken in to account, since many dangerous goods have the potential to cause permanent injury. Protective clothing must be worn, including gloves and goggles. Although it is important to confirm identification of the dangerous goods, this should not be done if in order to do so there is a risk of personal injury.

An example of a contingency plan for dealing with dangerous goods incidents is found in; Document and Records Management System (DRMS)

OPS-DG-408 - Contingency Plan for Dealing with Dangerous Goods Incidents Form

- 16.3.2.4 On completion of an investigation into a serious incident, a report will be produced outlining the details of the incident, the findings of the investigation and recommended action. The report will be reviewed to determine what further action has to be taken. If the investigation shows that the requirements of the ICAO Technical instructions were inadequate or to prevent the recurrence of similar incidents, a report of the incident shall be forwarded to ICAO and to the other States concerned. For import consignments, a copy of the report must be sent to the State of Origin and any other State involved. For export consignments, if the report as evidence of wrongdoing such that penalty action is justified against those responsible, this must be initiated.

An example of an Investigation Report form is found in; Document and Records Management System (DRMS)

OPS-DG-409 - Dangerous Goods Investigation Report

16.4 Recording of Dangerous Goods Accidents and Incidents

- 16.4.1 A record is to be maintained of all reported dangerous goods accidents and incidents. The aim is for the record to be kept in such a way that all relevant details

are included for each accident and incident, so as to provide a permanent record of all reportable accidents and incidents, to allow for a review to establish the cause, to facilitate reporting to other involved States and to allow analysis to establish weaknesses in the requirements or trends. The record can be used also to establish if a particular shipper, operator, agent, etc, is causing an excessive number of problems.

- 16.4.2 Details of an accident or incident are to be entered into the record as soon as possible, even if initially few details are known; it is to be up-dated as additional information becomes available. The record will indicate when all action on an accident or incident is complete and a review made at regular intervals to identify any outstanding action. Past records are not destroyed but may be archived, providing they can be retrieved if the need arises.

An example of an Investigation Report form is found in; Document and Records Management System (DRMS)

OPS-DG-410 – Dangerous goods Accidents and Incidents Record

16.5 Cooperation Between States in The Investigation of Dangerous Goods Accidents and Incidents Occurrences

- 16.5.1 In accordance with Annexes 18, Chapter 11.2 CAAT shall participate in cooperative efforts with other contracting States concerning violations of dangerous goods regulations, with the aim of eliminating such violations. It is envisaged that cooperative efforts include coordination of investigations and enforcement action, exchanging information and joint inspections.
- 16.5.2 Co-operation is to establish what has happened, take remedial action if required and deal with any violator. There will be the need to show joint control of dealing with the response to the occurrence so that a suspected violator cannot try to exploit any situation where one enforcing agency takes a different or more lenient view of an investigation than the other. Cooperation between Thailand and other States is needed to ensure all the relevant information about an occurrence is identified, so that correct decisions can be made as to the measures needed to deal with it and prevent any recurrence. Cooperation is also needed to ensure that where a violator is identified, it is possible to take penalty action no matter in which State the violator is situated.
- 16.5.3 Liaison and Cooperation between States Wherever possible Thailand shall liaise and cooperate with other States on a regular basis, so that the members of the enforcing agencies know the persons to contact in the event of an occurrence and who they would be dealing with in any investigation.

- 16.5.3 If there has been no contact with a State and it is necessary to report an occurrence to them, contact details for the aviation agencies throughout the world can be asked to:

The Civil Aviation Authority of Thailand
Flight Operation Standards Department,
333/105 Laksi Plaza Building, Kamphaeng Phet 6 Rd.,
Tarat Bang Khen, Laksi,
Bangkok 10210
Thailand
Tel (662) 568-8838, (662) 568-8839
E-MAIL: safetyreport@caat.or.th

17. Exemption and Approval Procedures

17.1 Introduction

17.1.1 The difference between an “exemption” and an “approval” can be understood by refereeing to the definitions in Annex 18 to the Convention on International Civil Aviation, The Safe Transport of Dangerous Goods which defines them as follow:

- **“Exemption.** An authorization, other than an approval, granted by an appropriate national authority providing relief from the provisions of the Technical Instructions.”
- **“Approval.** An authorization granted by an appropriate national authority for:
 - a) The transport of dangerous goods forbidden on passenger and/or cargo aircraft where the Technical Instructions state that such goods may be carried with an approval; or
 - b) The other purposes as provided for in the Technical Instructions.

Note: In the absence of a specific reference in the Technical Instructions allowing the granting of an approval, an exemption may be sought.”

17.1.2 CAAT dangerous goods regulations and related guidance materials and forms to be used are described as follows:

- Air Navigation Act B.E. 2497
- Regulation on the Civil Aviation Authority of Thailand No.4
- ICAO DOC 9284 Technical Instruction for the safe Transport of dangerous goods by Air
- ICAO DOC 9284 Supplement Technical Instruction for the safe Transport of dangerous goods by Air
- Notification of the Civil Aviation Authority of Thailand on rules and conditions for permission to send or carry dangerous goods and animals on board aircraft
- Regulations on Dangerous Goods Occurrence Report
- Regulations on Approval of Exemption to Transport Dangerous Goods under special circumstance
- CAAT-OPS-DG-403 –Application for Exemption and Approval to Carry Dangerous Goods by Air.

17.1.3 The Technical Instructions provides for States to grant exemptions to enable the transport by air of dangerous goods which may not be permitted in normal circumstances or in conditions which are different to those prescribed in the Instructions. Such exemptions may only be granted in instances of extreme urgency, when other forms of transport are inappropriate or when full compliance with the Technical Instructions is contrary to the public interest.

17.2 Exemptions/Approvals Requirements

17.2.1 Generally, the applicant for an exemptions/approval should be the party for whom the responsibilities are most relevant, e.g. when an exemptions/approval is granted for dangerous goods which are forbidden under normal circumstances, it may be most appropriate for the shipper to apply. However, the exemption must address all affected parties. Irrespective of who is responsible, the operator must be in possession of confirmation that all the required exemptions/approvals have been obtained prior to accepting the goods for shipment.

17.2.2 The responsibility for obtaining an exemptions/approval may rest with;

- Thai AOC with Dangerous goods permitted holder
- Foreign AOC with Dangerous goods permitted holder
- Shipper depending on the nature of the request

Note: Usually an exemption should cover a single occasion, but it may be necessary to issue exemptions to cover multiple occasions and/or multiple shippers

17.2.3 When a State is approached for an exemptions/approval as its origin, operator, transit, overflight and/or destination, it is suggested that, if it is appropriate, at least the following information should be supplied before consideration is given to granting an exemption/approval:

- Copies of dangerous goods exemptions/approvals issued by State(s) concerned for the proposed shipment are enclosed (If Any)
- The reason why it is essential the article or substance must be carried by air;
- A statement why the applicant believes the proposal (including any safety control measures specified by the applicant) will achieve a level of safety equivalent to that provided by these Instructions;
- Proposed proper shipping name, classification and UN number with full supporting technical data;
- The proposed packaging;
- Quantity to be carried;
- Any special handling required and any special emergency response information;
- Name and address of shipper and consignee;
- The airports of departure, transit and destination and the proposed dates of transport; and
- Details of the operator including aircraft type, flight numbers, etc.

An example of an application form for an exemptions/approval to carry dangerous goods by air is found in; Document and Records Management System (DRMS)

CAAT-OPS-DG-403 –Application for Exemptions/ Approvals to Carry Dangerous Goods by Air

17.3 Safety Evaluation of an Exemptions/Approvals Requirement

17.3.1 When granting an exemptions/approval, an overall level of safety in transport that is at least equivalent to the level of safety provided by the Technical Instructions must be achieved. In determining an equivalent level of safety, the following should be considered:

- A review of the applicable regulatory provisions. This includes the identification of specific provisions that will not be met, thus requiring a determination that an equivalent level of safety has been achieved;
- A review of any potential increased risk to safety or property that may result from deviating from the provisions in question and identification of the measures considered necessary or appropriate to address that risk. This should include substantiation with applicable analysis or an evaluation demonstrating that the proposed additional measures will achieve a level of safety that is at least equal to that required by the Technical Instructions;
- A thorough review and risk assessment to identify and evaluate potential risks in transport. This may include a risk analysis addressing failure modes and effects, a systems safety evaluation, and an explanation of the measures imposed to ensure each risk factor has been evaluated, in order to provide an appropriate level of safety;
- When appropriate, risk mitigation factors and a safety analysis may be based on analogy to requirements in place for technologies posing similar risks in order to ensure safety and regulatory consistency.

17.4 Exemptions/Approvals Conditions

17.4.1 Approval

In the Technical Instructions, approvals are required for the following circumstances:

- When dangerous goods are shipped under special provisions A1 or A2;
- When shipping infected live animals,

Note; Special Provision A1 - This article or substance may be transported on passenger aircraft only with the prior approval of the appropriate authority of the State of Origin and the State of the Operator under the written conditions established by those authorities. The conditions must include the quantity limitations and packing requirements and these must comply with S-3;1.2.2 of the Supplement. A copy of the document(s) of approval, showing the quantity

limitations and packing requirements, must accompany the consignment. The article or substance may be carried on cargo aircraft in accordance with columns 12 and 13 of Table 3-1. When States, other than the State of Origin and the State of the Operator, have notified ICAO that they require prior approval of shipments made under this special provision, approval must also be obtained from these States, as appropriate.

Note; Special Provision A2 - *This article or substance may be transported on cargo aircraft only with the prior approval of the appropriate authority of the State of Origin and the State of the Operator under the written conditions established by those authorities. When States, other than the State of Origin and the State of the Operator, have notified ICAO that they require prior approval of shipments made under this special provision, approval must also be obtained from the States of transit, overflight and destination, as appropriate. In each case, the conditions must include the quantity limitations and packing requirements and these must comply with S-3;1.2.3 of the Supplement. A copy of the document(s) of approval, showing the quantity limitations and the packing and labelling requirements, must accompany the consignment.*

17.4.2 Exemption

The following is offered as guidance to States to determine whether these criteria have been met:

17.4.2.1 Extreme urgency.

- a) In deciding whether the transport is urgent, States should consider why it is important for a consignment to reach its destination quickly or why it has been necessary to make an application at short notice. Dangerous goods may need to be transported because of:
 - Humanitarian relief;
 - Environmental relief;
 - Pestilence;
 - National or international security;
 - Saving of life (e.g. rescue); and
 - Limited availability at destination.
- b) Applications based on commercial reasons only should not be viewed as urgent and carriage by other forms of transport should also be considered.

17.4.2.2 When other forms of transport are inappropriate.

Whilst carriage by other forms of transport may be possible, States should evaluate a risk analysis which should include consideration of:

- Length of journey. Transport by other forms may result in an unrealistic journey time and could affect the viability of the dangerous goods;
- Infrastructure. The availability of other forms of transport may be limited;

- Security. The comprehensive security provisions of the air mode may reduce the possibility of unlawful interference (theft, etc.);
- Routing. Transport by air may result in a reduced risk of exposure of the public to the dangerous goods in the event of an incident or accident. The risk of piracy may also be significantly reduced;
- Cost. The cost of carriage by other forms of transport may be economically unreasonable. However, the decision to grant an exemption should not be based on cost alone.

17.4.2.3 When full compliance with the Technical Instructions is contrary to the public interest. For example:

- Medical applications;
- New technologies; and
- Enhancements in safety.

17.5 Issuing an Exemptions/Approvals

17.5.1 When an exemption is to be issued by a State it is suggested that, if appropriate, the following items should be considered to be the minimum requirements to be applied in connection with that exemption:

- Notification should be provided to the authorities at the relevant airports within that State;
- The packing method to be used should, where possible, be as shown in the supplementary dangerous goods list. The packaging to be used should provide a level of safety at least equivalent to that which is needed in order to meet the applicable requirements of Parts 4 and 6 of the Technical Instructions; and
- Copies of the relevant exemption documents should be attached to the dangerous goods transport document which accompanies the goods.

17.5.2 When a State grants an exemption it should contain, as a minimum, the following:

- The UN number, proper shipping name and the classification of the goods;
- The packaging and quantity applicable;
- Any special handling required and any special emergency response information;
- Name and address of shipper and consignee;
- The airports of departure, transit and destination and the proposed dates of transport; and
- The duration of the validity of the exemption, this normally should not exceed a period of two years from the date of issue.

17.5.3 A copy of the exemption must be provided to the operator concerned.

- 17.5.4 An exemption must not be granted for any dangerous goods indicated as forbidden under any circumstance, as described in the Technical instructions.
- 17.5.5 Where dangerous goods are forbidden on both passenger and cargo aircraft, consideration should ordinarily only be given to carriage on cargo aircraft.
- 17.5.6 Transport on a passenger aircraft should only be considered in exceptional circumstances.
- 17.5.7 Where an exemption or approval is required from more than one State, it is usually most appropriate for the State of Origin to grant the initial exemption because they may have greater awareness of the shipper and the terms and conditions under which the dangerous goods will be shipped. However, there may be circumstances where another State concerned might be better placed to grant the initial exemption.
- 17.5.8 Any special reporting requirements relevant to the reporting of any incident associated with the exemption or approval. Additional considerations for the operator must also be addressed Safety conditions for operators to address may include.
- Restrictions on the location and of loading and unloading of cargo;
 - Restrictions on the time of day of the flight to daylight hours (including loading and unloading);
 - Restrictions to take-off or land only in visual meteorological conditions;
 - Flight planning to avoid population-dense areas;
 - Restrictions on the use of hand-held transmitting devices in the vicinity of the dangerous goods;
 - Restrictions on the use of aircraft radios and radar during loading and unloading;
 - Restrictions on the passengers on board;
 - carriage of additional firefighting equipment; and/or
 - additional segregation requirements.

The considerations above are not exhaustive. A full hazard identification and risk assessment should be conducted prior to the State's issuance of approvals and exemptions.

17.6 Exemptions/Approvals Processes for the Safe Transport of Dangerous Goods by Air

17.6.1 Stage 1 Pre-Application

As far in advance as possible for the start of Exemptions/Approvals operations, the applicant (See 13.1.1) should contact Flight Operations Standards Department, Dangerous Goods Division (DG) the Civil Aviation Authority of Thailand (CAAT) to discuss exemption information and aspects of exemption requirements. Meeting arrangement could be done via ops_dg@caat.or.th. The pre-application meeting will

be attended by Dangerous Goods Inspectors and team, which will be held at CAAT office. The purpose of the pre-application meeting is to ensure that applicant or operator has sufficient knowledge of the appropriate regulations and requirements as well as critical of exemption information to the operator. CAAT dangerous goods regulations and related guidance materials and forms to be used (See 17.1.2).

17.6.2 Stage 2 Application

The application form applies to requests to carry dangerous goods where Air Operator do not comply with the normal requirements of the ICAO Technical Instructions. Application and support document shall be made at least 10 working days before the date of the flight on which the dangerous goods are to be carried and should be submitted to DG, the Civil Aviation Authority of Thailand (See 17.2).

17.6.3 Stage 3 Document Evaluation Stage

When the applicant submits a request exemption/approval to CAAT for an initial exemption/approval renewal or modification of their existing exemption/approval, DG will review the application and will verify the competence and compliance history of the certificated operator in addition to ensuring compliance with State operating regulations and the Technical Instructions (see 17.2).

DG should have a review the exemption/approval conditions (see 17.4) such a process in place and exercise the appropriate technical competency to conduct a thorough evaluation and impose the necessary safety measures (see 17.3) to ensure that the conditions of the exemption issued provide an equivalent level of safety to the requirements of the Technical Instructions.

Exemptions may be granted in cases of extreme urgency, or when other forms of transport are inappropriate, or full compliance with the prescribed requirements is contrary to public interest.

Some dangerous goods designated as forbidden may be transported if certain conditions are met. The provisions of the Technical Instructions and the Supplement should be followed if there is a need to transport these substances.

Other dangerous goods cannot be carried on aircraft under any circumstance. These include articles or substances which, as presented for transport, are liable to explode, dangerously react, produce a flame or dangerous evolution of heat or dangerous emission of toxic, corrosive or flammable gases or vapours under conditions normally encountered in transport. Dangerous goods meeting this description are included in the Dangerous Goods List (Table 3-1) of the Technical Instructions with the word "Forbidden" shown in columns 2 and 3, but this list is not inclusive. It is essential that appropriate care be exercised to ensure that goods meeting this description are not offered for transport.

Where an entry in Table S-3-1 (Doc 9284 Supplement) has a number in parenthesis after the word "Forbidden", this refers to a packing instruction which contains the method of packing that should be specified when issuing an exemption. As much as possible, appropriate packing instruction numbers are indicated in columns 10 to 13 of Table S-3-1 (Doc 9284 Supplement) and the

associated detailed requirements appear in Part S-4 (Doc 9284 Supplement), where these are additional to those given in the Technical Instructions.

The suggested maximum quantity limitations to be permitted are indicated in Table S-3-2 or S-3-3 (Doc 9284 Supplement) for some classes and divisions.

The results of a dangerous goods document evaluation are recorded so as to produce a record of what was seen and noted at the time. The record must be sufficiently comprehensive to identify any deficiencies, since these will need to be identified in a request to the operator to act to remedy them. The request to the operator should include a time scale for taking remedial action.

17.6.4 Stage 4 Authorized Stage

After the document evaluation, have been completed satisfactorily, DG will prepare 'a permission for Exemption/Approval to Carry Dangerous Goods by Air' which contains exemptions/approval, limitations, and provisions specific to the applicant. The authorized stage follows the satisfactory completion of all the previous stages. It begins when the CAAT takes the necessary administrative action to issue a permission for Exemption/ Approval to Carry Dangerous Goods by Air.

Subsequently, DG will propose an approval of an authorized for Exemption to Carry Dangerous Goods by Air' to the Director General of CAAT for his/her final consideration and authorization. After the Director General's authorization, the operator will be contacted to collect its permission, or this will be mailed to applicant's directly.

After assurance that the applicant will have to comply with the applicable requirements and is fully capable of fulfilling its responsibilities and conducting a safe and efficient operation.

17.6.5 Register of Dangerous Goods Approvals/Exemptions Record

Dangerous Goods Approvals/Exemption should be controlled by master list control to ensure that each approval clearly identified through a title, permit running number

An example of a Dangerous Goods Approvals/Exemptions Records is found in;
Document and Records Management System (DRMS)
 OPS-DG-404 Dangerous Goods Approvals/Exemptions Record

17.6.6 Upon the Dangerous Goods Approvals/Exemptions approval of Director General of CAAT, the operators will be officially notified by OPS to take the Approved Dangerous Goods Approvals/Exemptions. A binder and evidences of operator's Dangerous Goods Training Approvals/Exemptions must be retained at CAAT system (e.g. e-document etc.).

17.7 Corporate Exemptions/Approvals with Flight Formalities Department

17.7.1 General

The applicant who have intention to fly in/out, transit and overfly of the Kingdom of Thailand must receive the flight permission from Flight Formalities Department/ The Flight Permission Division (FFD/FP) before flight commencement. FFD/FP is responsible to verify flight detail including aircraft type, passenger detail and cargo (Dangerous Goods) on board. In case of the operator have intention to transport dangerous goods shipment on board the aircraft, FFD/FP will relay the information to Dangerous Goods Division (DG) to verify and to assess the capability of such applicant on dangerous goods transportation prior granting flight permission.

17.7.2 Dangerous Goods Verification

After DG obtained the dangerous goods information from FFD/FP. The assigned inspector will verify the information in accordance with the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (DOC 9284) and provide the consideration result to FFD/FP within determined timeframe. If the dangerous goods shipment requires an Exemptions/Approvals, it must proceed the Exemptions/Approvals for dangerous goods by DG prior granting the flight permission.

DG will verify the dangerous goods information, including but not limited to;

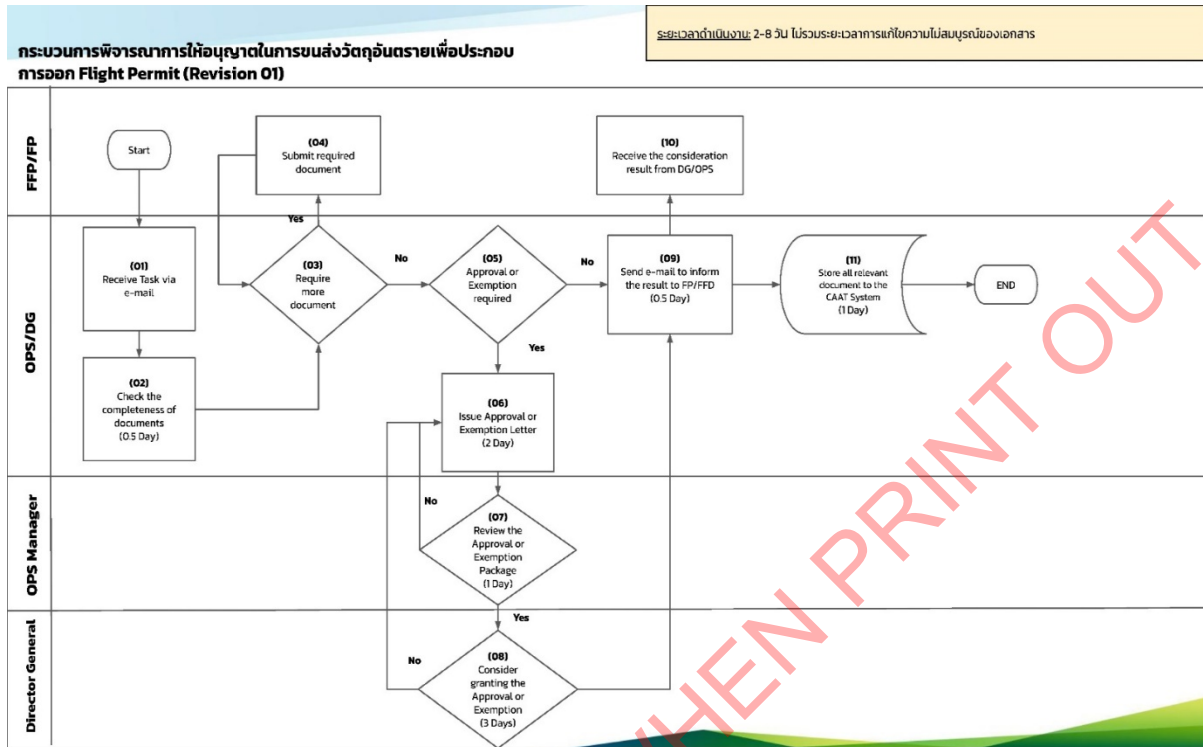
- Shipper Declaration for Dangerous Goods (as mandatory)
- Dangerous goods description (UN number, PSN)
- Operation Specification in specific Dangerous Goods Approval – (as mandatory)
- Air Operator Certificates
- Flight information details, flight date and routing
- Air Waybills Number (if any)

17.7.3 Application Package for the Exemptions/Approvals

In case of the dangerous goods shipment requires an Exemptions/Approvals, the assigned inspector will inform the required application package to FFD/FP as follows;

- CAAT-OPS-DG-403 Application for Exemptions/Approvals to Carry Dangerous Goods by Air
- Shipper Declaration for Dangerous Goods
- Operation Specification in specific Dangerous Goods Approval
- An Exemptions/Approvals issued by state concerned
- Risk Assessment
- Air Waybills
- Other documents required by CAAT

17.7.3 The Exemptions/Approvals for dangerous goods workflow



17.8 Document retention

Upon the Dangerous Goods Exemptions/Approvals had been granted and replied e-mail to Flight Formalities Department, DG must record the flight detail and responsible person in the "Dangerous Goods Exemptions/Approvals Record" form in CAAT systems. Finally, DG must retain the Exemptions/Approvals and related document in the Document and Record Management System (DRMS).

18. Passenger Public Awareness Programme

18.1 Introduction

- 18.1.1 Each State must insure that information is promulgated in such manner that passengers are warned as to the types of dangerous goods they are prohibited or restricted from transporting aboard an aircraft.
- 18.1.2 In addition to the mandatory information that must be promulgated by operators, State should encourage all agencies involved in air transport to assist in raising the level of public awareness of the risks of dangerous goods in air transport.

18.2 Awareness Plan Achievement

A Dangerous Goods Awareness Plan should be designed to increase public knowledge in the safe transport of dangerous goods. Providing information to the travelling public may be achieved through the assistance of all agencies involved in air transportation.

18.3 Avenues of Communication

- 18.3.1 Several avenues of communication are available to assist States in raising the level of public awareness of the risks of dangerous goods in air transportation. Such as:

- Travel agents;
- Tour operators;
- Airport authorities;
- Air operators;
- Sports Associations;
- Outdoors Association;
- Publication in newspapers;
- Magazines;
- Trade publications;
- Newsletters;
- Websites;
- Exhibits at trade shows; and
- Conferences.

18.3.2 Passenger public awareness devices

- (1) There are number of devices that may be used to convey easy to understand information to the public regarding restrictions or prohibitions associated with the transport of dangerous goods in passenger transport-on and checked baggage or on the person.
- (2) Example of Passenger public awareness devices are listed below:
 - Posters;

- Brochures;
- Display cabinet;
- Electronic/social media and applications;
- Handouts;
- Websites;
- Information articles; and
- Advisory bulletin.

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19. Source of Additional Information

19.1 Introduction

- 19.1.1 Other regulations have an impact on the transport of dangerous goods. Each State should participate in cooperative efforts with other Authorities concerning the transport of dangerous goods with the aim of eliminating violations of the regulations. Cooperative efforts could include joint inspections, technical liaisons, exchange of information and joint meeting and conferences.
- 19.1.2 Appropriate information that could be exchange includes safety alerts, bulletins or advisory, incident reports, and educational/outreach materials suitable for public dissemination.

19.2 Cooperation

- 19.2.1 Wherever possible, States Authority should liaise and cooperate with other Authorities so that the members know the persons to contact in the event of an occurrence and who they would be dealing with in any investigation or simply exchange information.
- 19.2.2 A list of other National and International Authorities who could have an impact on the transport of dangerous goods shall be kept up-to-date. Those Authorities could be a source of additional information.

19.3 Source of Information Refer to OPS-DG-412-List of Authorities

The following is a sample list of sources of information.

Contacts	<i>Name of Experts or</i> Contacts personnel	Telephone numbers
Thai Customs Department		02 667 6000, 02 667 7000 Call Center: 1164
Thailand Post		02 831 3600 Contact Center: 1545
Explosives Bureau of Experts (for class 1)		
Office of Atoms for Peace (Radioactive Material Protection: for Class 7)		089 200 6243 Hot Line: 1296
Department of Disease Control (for Division 6.1 and 6.2)		02 590 3000 Hot Line : 1422
Food and Drug Administration - FDA		02 590 7000
Airport of Thailand PLC.		02 2535 1192

Department of Airports		02 287 0320-9
Royal Thai Police		1599
Aeronautical Radio of Thailand Ltd. (Air Traffic Services - ATS)		02 287 3531-41
Airport fire service at		02 2535 1192
OTHER SOURCES		
Thai Airfreight Forwarders Association		02 860 4323, 02 286 0477-8

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20. Regulations Development for Dangerous Goods

20.1 General

- 20.1.1 Annex 18 to the Chicago Convention on International Civil Aviation entitled "The Safe Transport of Dangerous Goods by Air" was developed in response to a need expressed by Contracting States for an internationally agreed set of provisions governing the safe transport of dangerous goods by air. The broad provisions of Annex 18 are elaborated in the International Civil Aviation Organizations Technical Instructions for the Safe Transport of Dangerous Goods by Air (DOC 9284). The internationally agreed instructions in DOC 9284, are also reflected in the IATA Dangerous Goods Regulations.
- 20.1.2 In term of legal related to transport of Dangerous Goods by Air, almost the policy shall be involved in practical and enforcement according to Standards and Recommended Practices (SARPs) adopted by ICAO. Samples of Thailand Regulations which are brought into enforce such as below: -
- Thailand Air Navigation ACT, B.E. 2497.
 - Regulations and Fee Rates for the Airport Service. Fri. 2554
 - Regulations and Fee Rates for the Airport Service)No.2(Act 2559.
 - International Carriage by Air Act, 2558,
 - Notification of the Office of the Civil Aviation Act 2558 to appoint.
 - Notification of the Civil Aviation Authority of Thailand on rules and conditions for permission to send or carry dangerous goods and animals on board aircraft B.E. 2558
 - Notifications the office of the Civil Aviation Authority of Thailand's regulations taking lithium to aircraft B.E. 2559
 - Regulations of The Civil Aviation Authority of Thailand No. 4 "The Transport of Dangerous Goods by Air" B.E. 2559
 - Notification of The Civil Aviation Authority of Thailand on Classification and List of Dangerous Goods which may endanger the safety of the aircraft or persons on board the aircraft B.E. 2562
 - Notification of The Civil Aviation Authority of Thailand on Classification and List of Dangerous Goods which may endanger the safety of the aircraft or persons on board the aircraft (No. 2) B.E. 2564

20.2 Regulations Development Procedures

The procedure to formulate new regulations or amendment of existing one will be as follows:

- DG division shall keep monitoring and up to date the regulation amendments of Annex 18, Technical Instructions for the Safe Transport of Dangerous Goods by Air (DOC 9284), IATA Dangerous Goods Manual and other related Manual.
- Dangerous Goods Regulations are drafted and submitted to Legal Department.
- Draft team, DG division and LEG, prepare the first corporation draft and submit to Director General to verify.
- Once Director General accepted, the final draft is, then, submitted to legal process in a timely manner.
- In case that the regulation has to be approved by the higher authority, OPS and LEG will defend for approval.
- Once the regulation is approved and ready to enforce, DG division shall publicize the new regulation through available channel such as on CAAT internet website.

21. Dangerous Goods Inspection Manual Development and Update

21.1 Policy

Dangerous Goods Inspection Manual (DGIM) is the most basic tool used in Dangerous Goods Division to help and guide inspectors to follow the sequence of work to meet a high safety standard or exceed ICAO regulations and standards. Inadequate work procedure and wrong dangerous goods information could result in poor safety standard. The procedures and guidelines presented in this manual can have a major impact on a management system effectiveness. If instructions are difficult to follow, the inspector will make errors in implementing the steps. Optimizing Work Instructions can lead to a more effective management system. This manual shall be reviewed at least every 1 Year. Dangerous Goods Division shall ensure the information provided in this manual is updated and current.

21.2 Objectives

To define develop and update DGIM as follow:

- a) DGIM are considered as a step prior to use for working procedures to the same standard and following with policies.
- b) These manuals have been revised and updated to current edition for reference as working tool.
- c) The document is considered and approved by the procedure.

21.3 Requirement for Reference to Develop and Update

21.3.1 External sources:

- a) Annex 18 to the Convention on International Civil Aviation, The Safe Transport of Dangerous Goods (AN 18).
- b) ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO. Doc.9284) current edition
- c) Supplement - ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO. Doc.9284) current edition
- d) Addendum of ICAO Technical Instructions.
- e) IATA Dangerous Goods Regulations current edition
- f) Addendum of IATA Dangerous Goods Regulations

21.3.2 Internal sources:

- a) Dangerous Goods Rules and Regulation on the Civil Aviation Authority of Thailand.
- b) Other CAAT's relevant manuals.

21.4 The Document need to be Developed and Updated

- 21.4.1 It is very important to developed and updated working tools for enhancing the same standard working procedures.
- 21.4.2 The existing document need to be revised and updated as below:
- a) Dangerous Goods Inspection Manual
 - b) Dangerous Goods Documentations
 - c) Any Guidance material for Operation Manual, Training Manual etc.

21.5 Procedure to Develop and Update Manual

These steps shall be followed according CAAT-QAD-DMSP Chapter 4: Document approved administration and Chapter 7: Development or amendment of a Control Document.

- (1) Identify the principal responsible person/function

Upon gathering new information from external and internal sources, the person/ function who receives the information should consider who principal responsible person/function is? And send the information to him/her.

- (2) Identify which documents are likely to be affected

Dangerous Goods Division should consider and identify which documents are likely to be affected. If no, go to step (4)

- (3) Arrange coordination meeting among all document

Dangerous Goods Division should arrange a meeting within dangerous goods division whose documents are likely to be affected and have to be amended accordingly. If the change does affect the primary law or CAAT's dangerous goods regulation, it is recommended to Manager of flight operations standards department to add the topic in the agenda for CAAT meeting without delay.

- (4) Review and validate the information/data

The document with all affected manual and checklist should review and validate to verify its effectiveness and applicability to a realistic use before the revision of document is processed.

- (5) Prepare draft for revision

Prepares document draft version with revision bar in the margins to indicate changes.

- (6) Review draft

FD should request all staff of DG to review the draft to verify and ensure its accuracy, understandability and perform ability as well as their agreement.

- (7) Draft Approved

After the document is considered correct and appropriate, this means that the document has been reviewed for adequacy by all affected ones.

(8) Correct the draft

In case the draft is not approved, DGI corrects the draft before goes to step (9)

(9) Need OPS manager approval

DG should consider whether the document/manual/checklist need to be approved prior to its effectiveness or not. If they do, OPS manager should approve before the documents are published. If not, it will go to step (10)

(10) Publish the revision (if any)

After approved by OPS manager, DG creates the revision or sends the final to the publisher according to prior arrangement. DG should review master pages before copies are reproduced.

(11) Update List of Controlled Documents

DG updates List of Controlled Documents.

(12) Upload document onto CAAT system

Once approved by OPS manager, DG shall upload the document onto a definite location (e-document) or where is easy to access.

(13) Keep the revision record

All relevant records must be kept, by DG, as long as document remain in use.

22. Dangerous Goods Technical Data Management System

22.1 Purpose

To ensure effective control over the Technical Data (Dangerous Goods related Technical Publication and also Records)

22.2 Applicability

This system is applicable to Dangerous Goods Technical Regulations, Dangerous Goods Permission to send or carry dangerous Goods or Animals on board aircraft records, and Foreign Air Operator Certificate Surveillance records, Dangerous Goods Safety Database, AOC holder related Dangerous Goods Approval, which does not include of documents from the outside source, and quality system.

22.3 Definitions

- Controlled dangerous Goods related Technical Publication and records means that requires to be tracked and controlled for its effectively.
- Controlled Dangerous Goods related Technical Publication and also Records includes:
 - ICAO Annex and Documents: ICAO Annex 18, ICAO Doc. 9284 Technical Instructions for the Safe Transport of Dangerous Goods by Air, ICAO Doc. 9284 Supplement Technical Instructions for the Safe Transport of Dangerous Goods by Air, ICAO Doc 9481 AN/928 Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods, ICAO Doc. 8335 Manual of Procedures for Operation Inspection, Certification and Continued Surveillance, ICAO Doc.9376 Preparation of an Operation manual.
 - IATA Documents: IATA Dangerous Goods Regulations in CD-ROM with online Updated Lithium Battery Shipping Guidelines (LBSG)
 - Dangerous Goods Related CAAT Requirements: New Air Navigation ACT B.E. 2497 and amendment and CAAT Regulation.
- Records of Certification, Surveillance should be retained in CAAT e-document system of the followings:
 - 1) Record of AOC Certification including:
 - **Phase 2** CAAT-OPS-AOCFM-401-Application for Approval to Carry Dangerous Goods by Air , including Required Dangerous Goods related Documents such as Dangerous Goods Manual, Dangerous Goods Training Manual and other Manuals as applicable.
 - **Phase 3** CAAT-OPS-CLDGI-301 Operation Manual's Dangerous Goods Section Checklist, CAAT-OPS-CLDGI-302 Approval of Dangerous Goods Training Programmes, CAAT-OPS-CLDGI-303 Approval of Dangerous Goods Training Programs; Postal, CAAT-OPS-CLDGI-304

Approval of Dangerous Goods Training Programmes, Shippers, Packers, Frieghter, Forwarders.

- **Phase 4.1** should be divided into two parts as follows:

Dangerous Goods Approved Operator

- OPS-CLDGI-401 Dangerous Goods Site Audit Checklist (for Approved Operator) and related Inspection such as OPS-CLDGI-403 Cargo Facility Process Inspection, OPS-CLDGI-405 Ground Handling Facility Process Inspection, OPS-CLDGI-408 Packaging or Article Inspection (if any).

Dangerous Goods Non- Approved Operator

- OPS-CLDGI-402 Dangerous Goods Site Audit Check list (for Non-Approved Operator) and other related Inspection Forms such as OPS-CLDGI-404 Passenger handling Facility Process Inspection.
 - **Phase 5** OPS-AOCFM-151 Form shall be completed after the meeting with the AOC applicant to inform the AOC Certificate Holder' s responsibilities to continued compliance with CAAT' s regulations and the authorizations, limitations, provisions of its certificate. As a certificate holder' s operation and procedures changes, relevant manuals will have to be amended accordingly. The process for amending manuals is similar to the certification process. In some cases, it may be a less complex procedure depending on the subject of the amendment. CAAT is responsible for conducting periodic inspection of the AOC holder' s operation to ensure continued compliance with the CAAT' s regulations and safe operating practices.
- 2) Records of CAAT Dangerous Goods Permission Letter to send or carry Dangerous Goods or animals on board aircraft including:
 - Audit Agenda including Pre- Audit Meeting.
 - Audit Checklist including Discrepancies and Corrective Actions plan
 - Copy of CAAT Dangerous Goods Permission Letter
 - 3) Surveillance Records:
 - AOC Surveillance Records including Audit records, Discrepancies and Corrective Action Plan
 - Other than AOC (GHA) Surveillance Records (if any)
 - Foreign AOC Surveillance Records including Audit records, Discrepancies and Corrective Action Plan (if any)
 - 4) Dangerous Goods Safety Information Database including:
 - Dangerous Goods Occurrence Records

- Dangerous Goods accidents and Incidents records including Dangerous Goods Investigation.
 - Discrepancies related AOC Certification and Surveillance and FAOC Surveillance records.
 - Miss-declared and Undeclared Records in summary monthly basis
 - Dangerous Goods shipments monthly report from air operators
- 5) AOC Holders Documents:
- For Dangerous Goods Approved Operator*
- CAAT Approved Dangerous Goods Manual and related Documents
 - CAAT Approved Dangerous Goods Training Programme.
- For Dangerous Goods Non-Approved Operator*
- CAAT Approved Dangerous Goods Training Programme
- 6) CAAT Approved Dangerous Goods Training Programme
- Hard-copy Data: data stored in paper copies. or
 - Electronic Data: Data stored in CAAT E- Document system or Online with updated data.

22.4 Procedures

22.4.1 Classification and Identification

- The Technical Data in Hard-copy shall be marked or stamped with “Controlled” on the data tag and the first page for proper identification and paper document properly kept to ensure the confidentiality.
- The Technical Data in Electronic data except CAAT E- Document system shall be affixed with the stickers with “Controlled” on the face of the box for proper identification.

22.4.2 Controlled Data Numbering

- Each Controlled technical data (include both hard-copies and electronic copies except online updated data.) is assigned with a unique control number.
- Controlled Technical Data control number is consisted by **DGxxx** (xxx indicates the controlled number) such as **TGxxx** for Thai Airways International related Documents, **PGxxx** for Bangkok Airways related Documents.....etc.
- Technical data shall be listed in “Technical Data Controlled List ”

22.4.3 Technical Data Retaining Requirements:

- The Technical Data in Hard- copy shall be kept in the cabinet and secured by Head of dangerous goods division.
- The Technical Data in Electronic data except CAAT E- Document system shall be kept in the box and secured by Head of dangerous goods division. Or his delegate.

22.4.4 New Controlled technical data Approval and Evaluation

- Head of DG or his delegate is responsible for completing the “Approval Technical Data”, verifying the completeness of the manuals and records prior amend into “Technical Data Controlled List”
- “Technical Data Controlled List” shall be amended for New Controlled Technical Data as appropriate.

22.4.5 Controlled technical data Update and Revision.

- Technical update and revision, the revised data shall use the old controlled number for registration affix with new revision number.
- Technical Data Controlled List shall be revised with new revision number.
- To ensure the Updated technical Data will be used, DG Staff shall review the update Technical Data in Technical data Controlled List prior use.

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23. Continuing Analysis and Surveillance System

Refer to FOIM Volume 3 Chapter 6

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