CIVIL AVIATION GUIDANCE MATERIAL – 1881

COMPETENCY-BASED TRAINING AND ASSESSMENT FOR DANGEROUS GOODS

CBTA – DG

CIVIL AVIATION AUTHORITY OF MALAYSIA

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Introduction

This Civil Aviation Guidance Material 1881 (CAGM - 1881) is issued by the Civil Aviation Authority of Malaysia (CAAM) to provide guidance for operators on a Competency-based Approach to Dangerous Goods Training and Assessment Program, pursuant to Civil Aviation Directives 18 – National Transport Dangerous Goods Program (CAD 18 – NTDGP), (referred to as "CAD"). Organisations may use these guidelines to ensure compliance with the respective provisions of the relevant CAD's issued.

Notwithstanding the Regulation 204 and Regulation 205 of the Malaysian Civil Aviation Regulations 2016 (MCAR 2016), when the CAGMs issued by the CAAM are complied with, the related requirements of the CAD's may be deemed as being satisfied and further demonstration of compliance may not be required.

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Chief Executive Officer
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Civil Aviation Directive components and Editorial practices

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

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

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

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

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

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

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

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

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

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

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

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

Record of Revisions

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

Rev No.	Revision Date	Revision Details	Initials

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Summary of Changes

ISS/REV no.	Item no.	Revision Details

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1 Introduction

1.1 General

1.1.1 This CAGM provides guidance in implementing a dangerous goods competency-based training and assessment programme for personnel involved in the transport of cargo, mail, passengers and baggage by air.

1.1.2 Since ICAO regions and member States have differing regulatory, operational, technical and organizational environments, it does not prescribe a “one-size-fits-all” training programme. Instead, it provides generic tools to develop dangerous goods training programmes that can be adapted for specific needs. It is based on the more detailed material provided in the *Procedures for Air Navigation Services — Training* (PANS-TRG, Doc 9868).

1.2 Competency-based Training and Assessment Concepts

1.2.1 **Goal:** The goal of competency-based training and assessment is to produce a competent workforce by providing focused training. It does so by identifying key competencies that need to be achieved, determining the most effective way of achieving them and establishing valid and reliable assessment tools to evaluate their achievement.

1.2.2 **History:** Competency-based training is a concept and methodology that was developed during the 1950s and entered the mainstream sometime in the 1980s. Competency-based training has been applied in many different contexts and professions and, therefore, it is understandable that there are many different definitions of “competence” and “competency- based training”. This section elaborates the competency concepts as they are used in this document.

1.2.3 What is competency?

1.2.3.1 A competency is a dimension of human performance that is used to reliably predict successful performance on the job. It is manifested and observed through behaviours that mobilize the relevant knowledge, skills and attitudes to carry out activities or tasks under specified conditions.

1.2.3.2 A competency standard is a level of performance that is defined as acceptable when assessing whether or not competency has been achieved.

1.2.4 Knowledge, Skills and Attitudes

1.2.4.1 Developing the knowledge, skills and attitudes (KSA) required to perform a task is a critical feature of competency-based training and assessment.

1.2.4.2 ***Knowledge.*** Knowledge is specific information required to enable a learner to develop and apply the skills and attitudes to recall facts, identify concepts, apply rules or principles, solve problems, and think creatively in the context of work.

Knowledge is an outcome of the learning process, whether learning occurs in formal or informal settings. There are different types of knowledge: declarative (e.g., facts and raw data), procedural (e.g., categorized/contextualized and application of conditional if-then rules), strategic (e.g., synthesis, inference to guide resource allocation for decision making, problem solving and behavioural action), and adaptive (e.g., generalization, innovation, and invention).

1.2.4.3 ***Skills.*** A skill is an ability to perform an activity or action. It is often divided into three types: motor, cognitive and metacognitive skills. A motor skill is an intentional movement, involving a motor or muscular component, that must be learned and voluntarily produced to proficiently perform a goal-oriented task. A cognitive skill is any mental skill used in the process of acquiring knowledge, such as reasoning, perception and intuition. A metacognitive skill relates to the ability of learners to monitor and direct their own learning processes ("thinking about thinking"); for example, planning how to approach a given learning task, monitoring comprehension and evaluating progress toward the completion of a task.

1.2.4.4 ***Attitudes.*** Attitude is a persistent internal mental state or disposition that influences an individual's choice of personal action toward some object, person or event and that can be learned. Attitudes have affective components, cognitive aspects and behavioural consequences. To demonstrate the "right" attitude, a learner needs to "know how to be" in a given context.

1.2.4.5 Examples of KSA applicable to dangerous goods personnel include:

Knowledge	—	The nine classes of dangerous goods
	—	Information required on the dangerous goods transport document
	—	Components of an acceptance check
Skills	—	How to determine if the substance/material is dangerous goods
	—	How to complete the dangerous goods documentation
	—	How to check a package (e.g., can it be accepted for transport?)
Attitude	—	Being motivated to ensure safety and to comply with applicable regulations
	—	Wanting to adhere to regulations in asking relevant and effective questions
	—	Appreciating feedback from team members (e.g., adapts when faced with a situation where no guidance or procedure exists)

1.2.4.6 Performing a dangerous goods task may require different levels of KSA, depending on the complexity of the specific task and the operational environment. A level of proficiency is a means to determine how critical the

employee's knowledge, skill or attitude is for the successful completion of a task. If used, the concept of a level of proficiency can be very useful in determining the main areas to focus on during training and assessment. In order to determine the level of proficiency of the employee's knowledge, skill or attitude, the employer should take into account the complexity of the task or sub-task, its criticality and the employee's autonomy in performing it. KSAs may be developed over time and with practice, thus enabling qualified personnel to take on more difficult tasks with greater responsibility.

1.2.5 Principal of competency-based training assessment.

1.2.5.1 A competency-based approach to training and assessment is based on the following principles:

a) relevant competencies are clearly defined for a particular role;

b) there is an explicit link between competencies and training, required performance on the job, and assessment;

c) competencies are formulated in a way that ensures they can be trained for, observed and assessed consistently in a wide variety of work contexts for a given role;

d) trainees successfully demonstrate competency by meeting the associated competency standard;

e) each stakeholder in the process including the employer (e.g. shipper, freight forwarder, ground handling agent and operator), instructor, trainee, training organization and regulator has a common understanding of the competency standards;

f) clear performance criteria are established for assessing competence;

g) evidence of competent performance is valid and reliable;

h) instructors' and assessors' judgements are calibrated to achieve a high degree of inter-rater reliability;

i) assessment of competencies is based on multiple observations across multiple contexts; and

j) to be considered competent, an individual demonstrates an integrated performance of all the required competencies to a specified standard.

1.2.6 ICAO competency framework, adapted competency model and task list

1.2.6.1 Traditional approaches to training development involve the breakdown of jobs into tasks. For each task there is a related objective, an assessment and associated elements in a training plan. A limitation of this approach is that each task must be taught and assessed. In complex systems, or when jobs evolve rapidly, it may not be possible to teach and assess each task. Moreover,

learners may demonstrate the ability to perform tasks in isolation without being competent in their job. Competency-based training and assessment is based on the concept that competencies are transferable. In the design of a competency-based training and assessment programme, the purpose of the training and tasks associated with this purpose are identified and a limited number of competencies are defined. In the design of training and assessments, tasks and activities are incorporated because they are useful for facilitating, developing or assessing a competency or competencies. Typically, a task will involve several competencies, and competencies may apply across a variety of tasks and settings. Specific tasks may be used to develop specific competencies. The lack of specific competencies may be identified as a root cause of failure in the performance of a task. A generic, high-level list of tasks ("task list") typically performed by dangerous goods personnel is provided in Chapter 4 of this document. Employers may use this list as a tool for developing specific training specifications for their personnel. The training and assessment record required by the Technical Instructions should detail the task(s) and sub-task(s) from the task list for which competency has been demonstrated in order to facilitate verification that appropriate training and assessment have been completed.

1.2.6.2 A competency model provides a means of defining competencies by identifying those needed for a given role, describing them, and providing criteria for each. Generic, high-level competency frameworks for aviation personnel have been developed by ICAO and included in the PANS-TRG and various ICAO documents. They are intended as a framework on which customized competency models can be developed. An ICAO competency framework for dangerous goods personnel is presented in Chapter 3 of this document. It provides a set of competencies that are typically needed to perform the dangerous goods tasks identified in the task list provided in Chapter 4. Employers may adapt this framework into competency models that meet the regulatory, operational, technical and organisational environments within which their personnel perform their tasks. This customised model is identified as an *adapted competency model*, which is then used to develop competency-based training and assessment for a given role. Guidance on developing an adapted competency model is provided in Chapter 2.

1.3 Developing Competency-Based Training and Assessment.

1.3.1 Instructional systems design (ISD) is a systematic process for designing and developing training. Several valid ISD models exist which may be used to design competency-based training and assessment. The analyse, design, develop, implement and evaluate (ADDIE) framework is generic to all ISD models. Chapter 2 provides guidance for designing dangerous goods competency-based training and assessment using the ICAO competency framework for dangerous goods personnel and the ADDIE model.

1.4 Roles and Responsibilities in a Competency-Based Approach to Training

1.4.1 Employer

1.4.1.1 A training programme includes elements such as design methodology, initial and recurrent training, assessment, instructor qualifications and competencies, training records and evaluation of its effectiveness. Employers need to determine the purpose and objective of the competency-based training programme based on the functions for which their personnel are responsible. Employers should ensure that training is designed and developed to establish clear links among the competencies to be achieved, the learning objectives, assessment methods, and course materials.

1.4.1.2 The employer must study the target population (future trainees) with a view to identifying the KSA that they already possess, to collect information on preferred learning styles, and on the social and linguistic environments of prospective trainees. The target population may be a mixture of experienced and newly recruited personnel, groups differing in age, etc. All these components could have an impact on the design of the training. Employers must also consider the domestic and international regulatory requirements that apply to their operations.

1.4.1.3 Some employers may utilize third parties for assistance. This approach may be the most suitable for employers who do not have the resources to train their personnel in-house. While utilizing third parties may be cost-effective, the deciding factor in selecting a third party should be whether or not the training needs are being addressed, and not costs alone. The potential for third parties to cater to the training needs of multiple employers and not address all required competencies of each specific employee needs to be taken into account. Employers remain responsible for ensuring their personnel are competent to perform their functions prior to performing them even if certain aspects of the training programme have been delegated to third parties.

1.4.1.4 Employers should liaise directly with CAAM to ensure that the latter's requirements are taken into account prior to proceeding with the development of competency-based training.

1.4.2 Instructor

1.4.2.1 In competency-based training, the instructor facilitates the trainee's progression towards the achievement of competencies. Instructors also support continuous improvement by collecting information about the effectiveness of the training materials. Examples of instructor competencies can be found in Part I, Chapter 3 of the PANS-TRG.

1.4.3 Trainee

1.4.3.1 In competency-based training, trainees are active participants in their learning process and in the achievement of competencies, as opposed to being passive recipients of knowledge. The competency-based training programme provides them with a clear idea of their learning path towards competency through the training programme and beyond. The competency-based training should directly contribute to improving their performance on the job. The trainees' feedback is essential to ensure that competency-based training is effective.

1.4.4 Authority

1.4.4.1 There are important differences between the ways the Authority would oversee a traditional training programme versus a competency-based training programme. In a traditional training programme, the regulator may assess the course components and final test against knowledge elements and not on the competencies that need to be acquired. The fact that all knowledge components are addressed or appear to be included in a course and that all trainees have passed the required test does not necessarily mean that they can competently perform their assigned functions.

1.4.4.2 Where competency-based training has been implemented, CAAM will oversee the training programme to ensure that it actually produces personnel who can perform the functions for which they are responsible in a specific operational setting and in compliance with the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) on overseeing dangerous goods training programmes.

1.5 Competency-Based Training and Assessment and Safety Management.

1.5.1 The Safety Management Systems (SMS) need to be implemented by service providers listed in 3.3.2 of Annex 19, which includes operators of aeroplanes or helicopters authorised to conduct international commercial air transport. An operator's SMS addresses the aviation activities that are related to the safe operation of the aircraft in accordance with Annex 6, Part I or Part III. These aviation activities include the carriage of dangerous goods. Other entities involved in air transport such as freight forwarders and ground handling agents are recommended to develop and implement SMS. Other entities may also voluntarily implement SMS.

1.5.2 Implementing SMS requires that all personnel understand the safety philosophy and embrace a disciplined and standardised approach for SMS. Personnel need to know their roles and responsibilities and have the requisite competencies to perform their functions within the SMS. To ensure that personnel have the knowledge, skills and abilities to support SMS, training activities should follow the competency-based approach. Other entities in the dangerous goods transport chain should be encouraged to implement a similar safety system.

1.5.3 The “Swiss-Cheese” Model of accident causation proposes that complex aviation systems are extremely well defended by layers of defences, making single-point failures rarely consequential in such systems (see paragraph 2.3 of the *Safety Management Manual (SMM)* (Doc 9859)). The model illustrates that accidents involve successive breaches of multiple system defences and that all accidents include a combination of both active conditions (actions or inactions that have an immediate adverse effect) and latent conditions (conditions that exist in the aviation system well before a damaging outcome is experienced). Doc 9859 identifies training as one of the three main groups of defences in aviation and identifies deficiencies in training as a latent condition.

1.5.4 Continuous improvement is a component of both safety management and competency-based training and assessment. Data from different sources should be utilized to enhance the training programme and address any deficiencies. For entities that also have an SMS, their competency-based training and assessment programme should be integrated with the continuous improvement cycle of their SMS.

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2 Development and Implementation of Competency-Based Dangerous Goods Training and Assessment Programmes

2.1 General

2.1.1 This chapter provides a step-by-step guide for organisations intending to establish competency-based training and assessment that is specific to their environment and requirements. It makes use of the ICAO competency framework and the ADDIE (analyse, design, develop, implement and evaluate) instructional design model.

2.2 Components of a competency-based training and assessment programme

2.2.1 The goal of competency-based dangerous goods training and assessment is to provide a competent workforce for the safe and efficient transport of dangerous goods by air. The following components, which are illustrated in Figure 2-1, are essential to achieving this goal:

a) a training specification that describes the purpose of training, the task list and the requirements that must be fulfilled when designing the training;

b) a competency model adapted from the ICAO competency framework for a given role;

c) an assessment plan providing the process and tools for gathering valid and reliable evidence at different stages during training;

d) a training plan describing the training required to achieve the competencies. It includes but is not limited to a syllabus (including KSA, milestones, lesson plans and schedules); and

e) training and assessment materials and human, material and organizational resources needed to implement training and assessment plans.

2.2.2 The remainder of this chapter focuses on the development of these components through the ADDIE instructional design model.

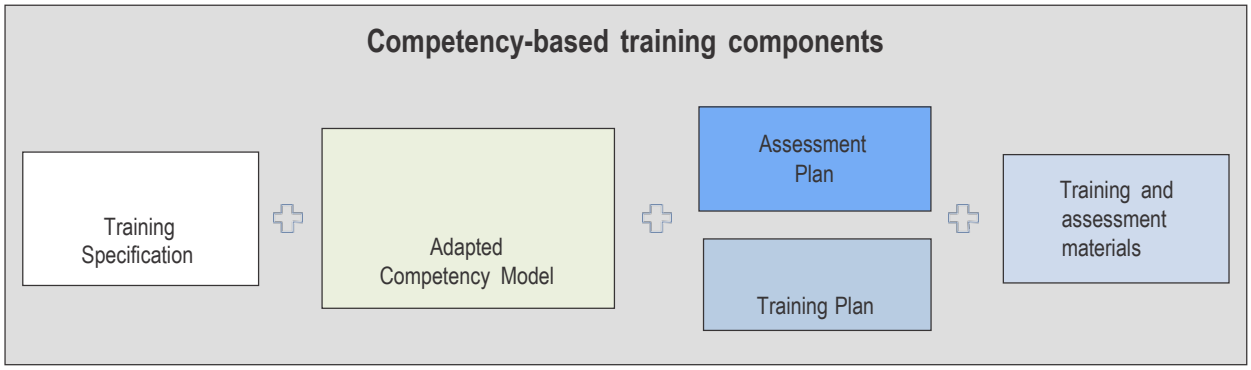

Figure 2-1: Competency-based training components

2.3 Building a competency-based dangerous goods training and assessment programme using the Addie Model

2.3.1 General

2.3.1.1 The ADDIE model is a generic process traditionally used by instructional designers and training developers to build effective training tools. It consists of five phases: analysis, design, development, implementation, and evaluation. PANS-TRG refers to these phases as “workflows” as illustrated in Figure 2-2. This section provides a detailed overview of the first two workflows (ANALYSE and DESIGN) and a general overview of the remaining three (DEVELOP, IMPLEMENTand EVALUATE).

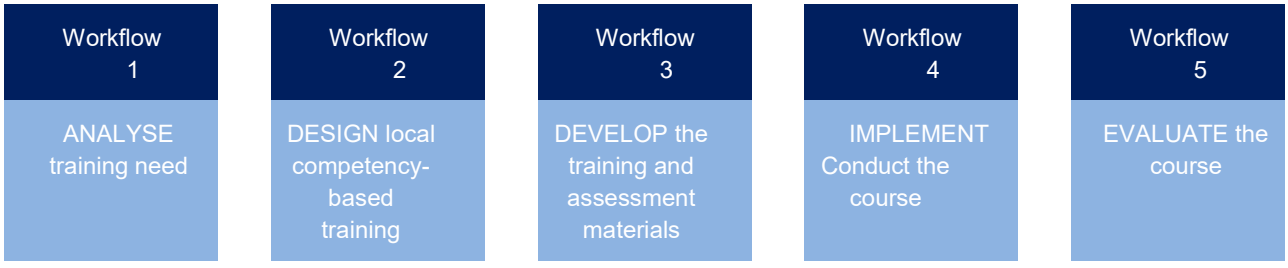

Figure 2-2. Competency-based training and assessment workflows

2.3.2 Workflow 1 — Analyse training need

2.3.2.1 The first phase in the development and implementation of a competency-based training programme is to determine what the training needs are specific to the employer's environment and requirements through a training needs analysis. Figure 2-3 illustrates a detailed overview of this workflow. The output of this workflow is a training specification, which includes the purpose of the training and the detailed operational, technical, regulatory and organisational requirements that need to be fulfilled when designing the training. PANS-TRG lists a number of questions that should be answered to ensure the training specification provides sufficient detail (see PANS-TRG, Chapter 2, Attachment C). Some of these questions are specific to flight training, but most would also apply to dangerous goods training.

2.3.2.2 This phase includes the development of a task list. A generic list of tasks and sub-tasks typically performed by personnel performing dangerous goods functions is provided in Chapter 4. A complementary flowchart illustrating the typical processes of performing these tasks is provided in Appendix 1. The employer may need to adapt the task list in Chapter 4 to reflect the specific tasks performed by its personnel.

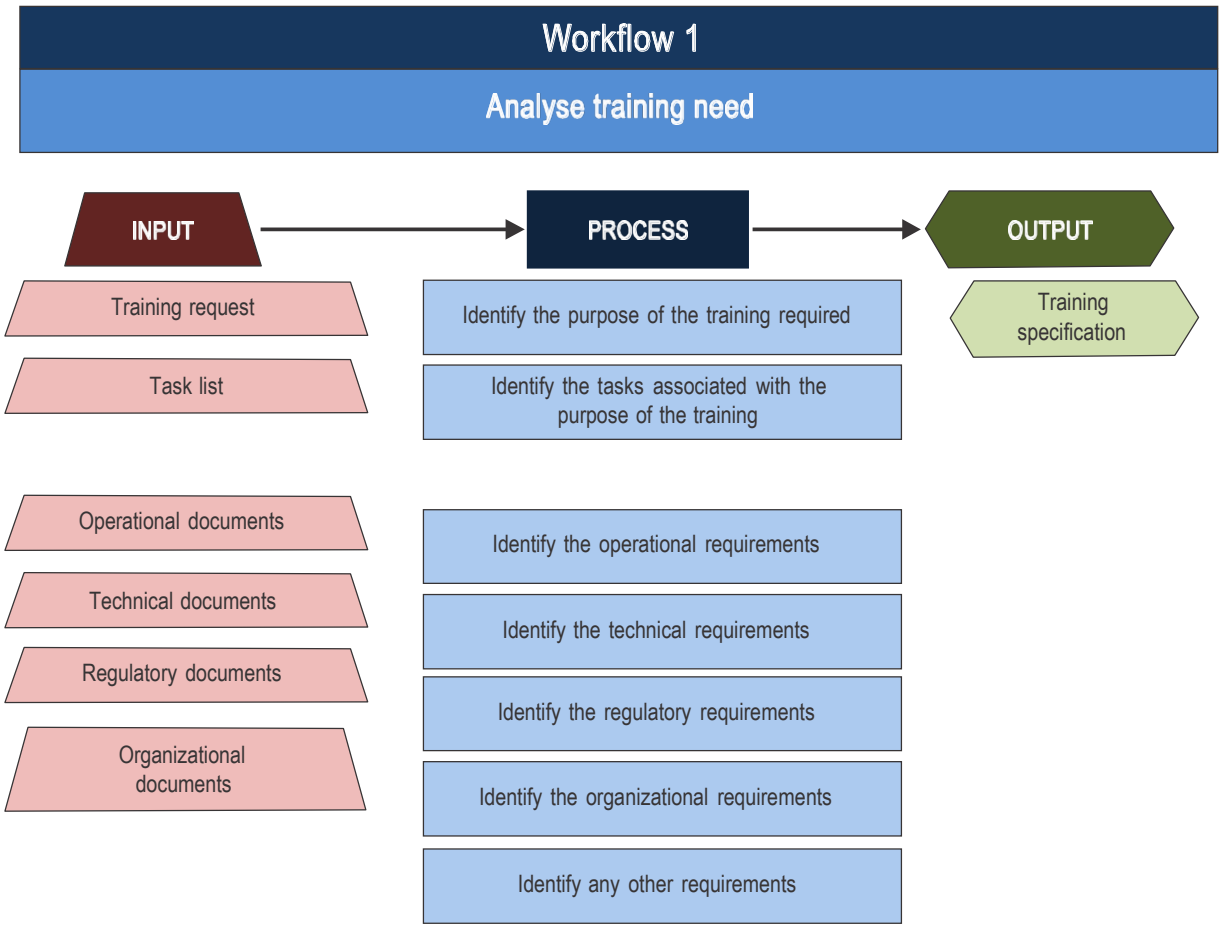

Figure 2-3. Workflow 1 – Analyse training need

2.3.3 Workflow 2 — Design local competency-based training and assessment

2.3.3.1 The second phase in the development and implementation of a local competency-based training and assessment programme is its design. This is done taking into account the training specifications identified in Workflow 1 and will involve:

a) establishing an adapted competency model that addresses the training specification identified inWorkflow 1;

b) designing an assessment plan that will be used to assess the competence of trainees; and

c) designing a training plan that will enable the development and delivery of the training course.

2.3.3.2 Figures 2-4 and 2-5 illustrate this workflow in two Parts: Part 1 (Figure 2-4) deals with the design of the adapted competency model, and Part 2 (Figure 2-5) deals with the design of the assessment and training plan.

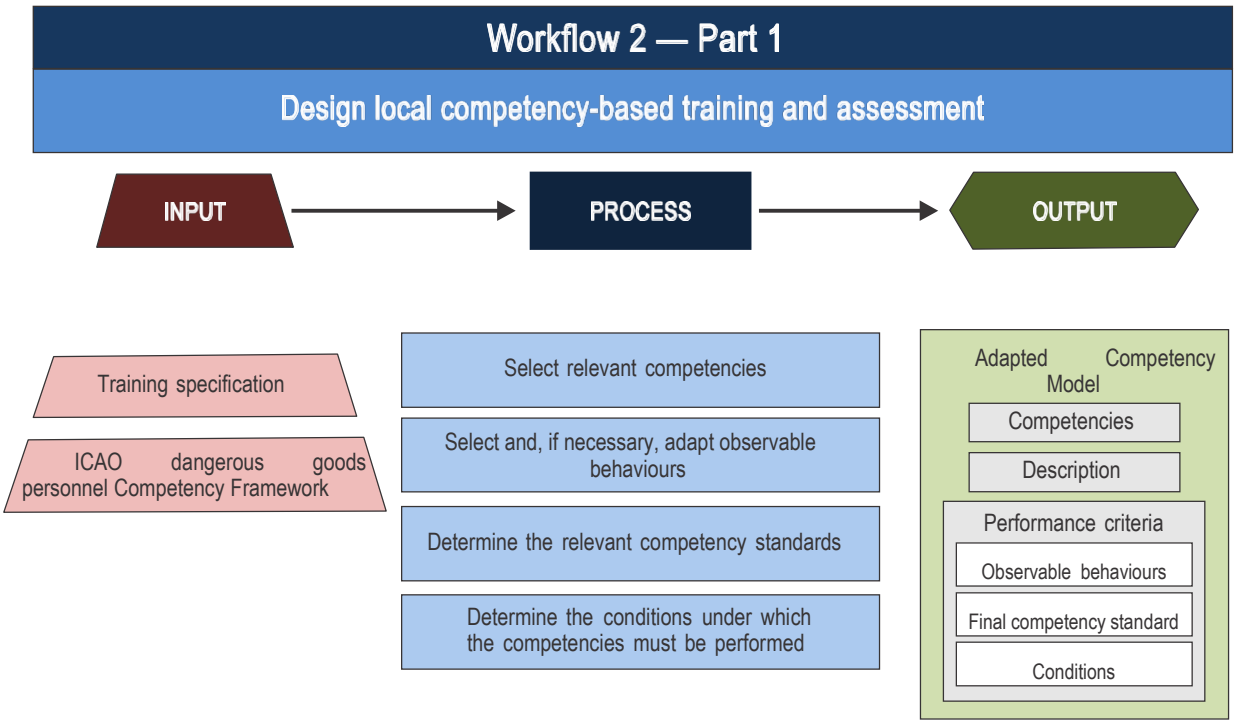

Figure 2-4. Workflow 2, Part 1 — Design local competency-based training and assessment

2.3.3.3 Designing the adapted competency model

2.3.3.3.1 A dangerous goods competency model should be adapted from the generic ICAO competency framework provided in Chapter 3 to meet the organizational competency requirements using the information contained in the training specification. The adapted model should include the following elements (Table 2-1 may be used as a template for an adapted competency model):

a) *A list of competencies and a description of each*. A generic ICAO competency framework provides a set of competencies that would typically be needed to perform the dangerous goods tasks listed in the task list that was developed when analysing the training needs (Workflow 1). The vast majority of adapted competency models will contain similar lists of competencies, but there may be a need to add or remove a competency depending on the employers' own operational and organizational environments.

b) Performance criteria for assessing competency including:

1) *Observable behaviours for each competency.* The generic ICAO competency framework provides a comprehensive list of observable behaviours associated with each of the competencies. Appropriate observable behaviours may be selected from it, adapted from it, or added to it.

2) *Competency standards and conditions used to assess competency*. Competency standards apply to all observable behaviours and relate to compliance with the standards and procedures and rules and regulations as described in relevant documents (e.g. national rules, the Technical Instructions, local operations manuals). In some instances, there may be specific standards associated with a particular observable behaviour.

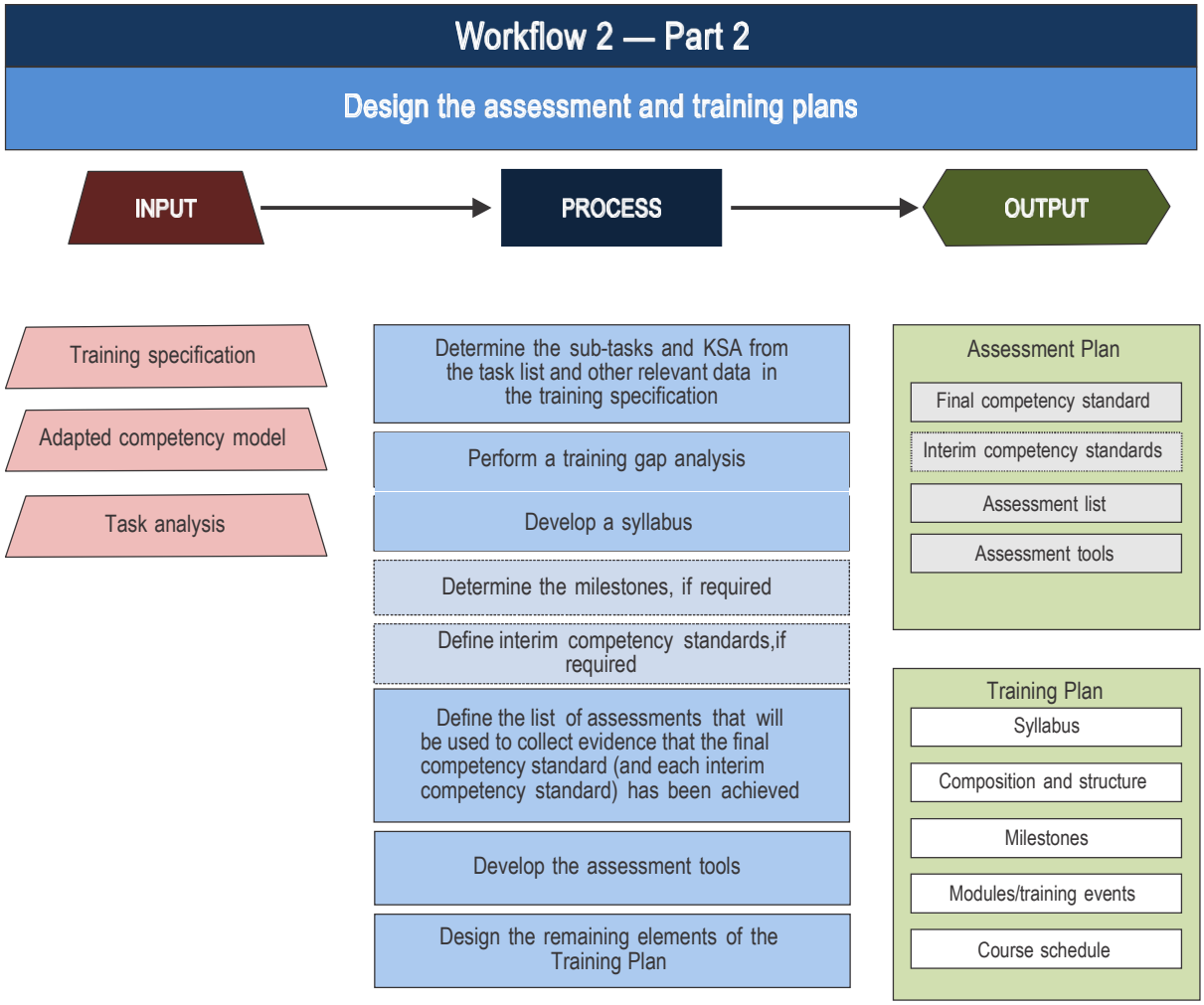

Figure 2-5. Workflow 2, Part 2 — Design the assessment and training plans

2.3.3.3.2 Conditions that are specific to the environment in which performance will be demonstrated may need to be considered in relation to the competency standard. These include the nature and complexity of the tasks, conditions relating to tools and systems or equipment, and conditions relating to the level of support or assistance a trainee can expect from the instructor or assessor.

2.3.3.3.3 During the early stages of training, trainees may expect active coaching and teaching from the instructor. However, as the trainee progresses towards the final competency standard and gains more confidence in performing independently, the instructor will take on a more passive role and may only give occasional advice on how to improve efficiency or intervene in instances where safety may be compromised. Consequently, the condition description of the final competency standard might be that the trainee would be expected to be performing independently without assistance from the instructor.

2.3.3.3.4 As part of the progression towards the final competency standard, it may be necessary to establish interim competency standards.

Table 2-1. Template For an Adapted Competency Model

Adapted competency	Description	Performance criteria		
		Observable behaviour	Competency assessment	
Adapted competency 1	Description 1	OB 1	Final competency standard	Conditions
		OB 2		
		OB n		
Adapted competency 2	Description 2	OB 1	Final competency standard	Conditions
		OB 2		
		OB n		
Adapted competency 3	Description 3	OB 1	Final competency standard	Conditions
		OB 2		
		OB n		

2.3.3.4 Designing an assessment plan

2.3.3.4.1 Competency-based training requires assessment of the trainees' progress until they are competent to perform their assigned function. A trainee's assessment may be completed using a variety of tools including observation of job performance, tests, or other practical exercises. In order for assessment tools to be effective, they must be valid and reliable both in terms of being an appropriate measure of the competency being assessed and of obtaining consistentresults when administered by different raters and ratings.

2.3.3.4.2 The purpose of the assessment plan is to detail how competence is going to be determined. Prior to developing the assessment and training plans, it is important to consider:

a) The following principles of competency-based assessment:

1) *Clear performance criteria are used to assess competence.* The adapted competency model establishes these performance criteria.

2) *An integrated performance of the competencies is observed.* The trainee undergoing assessment must demonstrate all competencies and their seamless interaction with each other.

3) *Multiple observations are undertaken.* Multiple observations must be carried out to determine whether or not a trainee has achieved the interim and/or final competency standard.

4) *Assessments are valid.* All of the components that comprise the adapted competency model must be assessed. There must be sufficient evidence to ensure that the trainee meets the competency specified by the interim and/or final competency standard. The trainee must not be asked to provide evidence for, or be assessed against, activities that are outside the scope of the adapted competency model.

5) *Assessments are reliable.* All assessors should reach the same conclusion when performing an assessment. All assessors should be trained and monitored to achieve and maintain an acceptable level of inter-rater reliability.

b) *Typical assessment methods*. The primary method for assessing performance is the conduct of practical assessments, because the focus is on an integrated performance of competencies. Practical assessments can be formative, whereby instructors provide feedback to trainees on their progress toward the interim or final competency standard, or summative, whereby trainees demonstrate competence at defined points during the training which may include or be the end of training. It may be necessary to supplement practical assessments with other forms of evaluation such as examinations, oral assessments, projects or simulation. Detailed guidance on typical assessment methods is provided in PANS-TRG, Attachment C to Chapter 2.

c) *The concept of milestones.* When the duration or the complexity of a course is such that it makes pedagogic sense to check that a trainee is progressing towards competence at an acceptable pace, the course may be divided into milestones. Milestones are cohesive building blocks of learning that are organized into a logical sequence that generally progress from the simple to the complex. Each milestone is comprised of both training and assessment(s). Milestones build on one another; therefore, a trainee would need to successfully complete the training and assessment for the first milestone before proceeding to the next one. An example of milestones might be training in a classroom as the first and training as part of on-the-job training as the second.

d) *Final competency standard and interim competency standards.* If training has been divided into milestones, it will be necessary to define interim competency standards for each milestone.

e) The relationship between the adapted competency model and the training and assessment plans is described in 2.3.3.6.

2.3.3.4.3 The assessment plan details:

a) the final competency standard associated with the final milestone;

b) the interim competency standard associated with each milestone (if required);

c) the list of assessments (formative and summative assessments, examinations, oral assessments, etc.) required for each of the milestone(s) that has been defined;

d) when assessments should take place;

e) the tools to be used to collect evidence during practical assessment;

f) the pass marks for projects, examinations or oral assessments;

g) if required, the minimum number of formative assessments to be undertaken prior to starting summative assessments; and

h) the number of observations required to assess performance for the interim and final competency standards.

2.3.3.4.4 Additional administrative procedures may be necessary in the implementation of the assessment plan in relation to:

a) who is authorized to perform a specific task or assessment;

b) roles and responsibilities of personnel during the conduct of assessments;

c) assessment procedures (preparation, conduct and post-assessment);

d) conditions under which assessments are to be undertaken;

e) record-keeping; and

f) actions to be taken if a trainee fails a competency assessment.

Normally these procedures are described in a training and procedures manual.

2.3.3.4.5 The assessment of dangerous goods personnel can be accomplished in a variety of ways. Some common examples of how to accomplish an assessment would be to utilize a written test, online test, oral test, observed

practical exercises, online practical exercises and observation of on-the-job performance by fully trained personnel.

2.3.3.4.6 An employer of personnel performing dangerous goods functions might choose to utilize one assessment method or a combination of assessment methods, as long as the assessment confirms that the personnel have acquired the necessary competencies to perform the assigned dangerous goods functions. The employer therefore establishes the assessment plan with all the specific details that would need to be accomplished to determine whether competence has been achieved by the trainee.

2.3.3.4.7 Employers electing to send personnel to third-party training providers also need to establish an assessment plan for ensuring that competence has been achieved by the trainee. The employer may incorporate the third-party provider's assessment into its established assessment plan. Even if the employer does not deliver any of the training itself, it can still choose to assess the trainees in the workplace to ensure they can perform their assigned tasks competently and incorporate that process into the assessment plan.

2.3.3.5 Designing a training plan

2.3.3.5.1 The purpose of the training plan is to detail:

a) the composition and structure of the course;

b) the syllabus;

c) milestones (if required);

d) modules, training events and their delivery sequence; and

e) the course schedule.

2.3.3.5.2 The training plan will be used by the training designer(s) to create the training and assessment materials.

2.3.3.6 Relationship between the adapted competency model and the assessment and training plans

2.3.3.6.1 The training specification developed in Workflow 1 (see 2.3.2) serves as the common basis for the development of the adapted competency model and the training and assessment plans. The task list is generally used to aid the selection of the observable behaviours from the generic competency framework provided in Chapter 3. The operational, technical, regulatory and organizational requirements aid the development of the conditions and standards that will apply to the competencies and observable behaviours.

2.3.3.6.2 The same task list and requirements are used to develop the training plan. The training plan is used to prepare the trainees to undertake assessment

to determine if they are competent in accordance with the adapted competency model. The adapted competency model and the training plan are used to develop the assessment plan.

2.3.3.6.3 The syllabus in the training plan is composed of training objectives derived from tasks and sub-tasks as well as the underlying KSA necessary to perform them. The KSA are determined on the basis of the task list in conjunction with operational, technical, regulatory and organizational requirements. Chapter 5 provides a generic task/knowledge matrix table that can be used as a tool to map out the knowledge necessary to perform specific tasks. Tasks corresponding to the list provided in Chapter 3 are listed across the columns of the table and subject matter (knowledge) is listed down the rows. The employer should indicate what knowledge is needed for a particular task within the organization with a check mark at the point at which the task element and the knowledge element intersect. To facilitate this process, some knowledge components have been blacked out if they are considered to be completely irrelevant to specific tasks. The level of knowledge and/or skills necessary will differ depending on the task. For example, the person accepting dangerous goods will not require the same level of knowledge and/or skills related to classification as someone who is classifying dangerous goods.

2.3.3.6.4 When assessing whether competence has been achieved, the adapted competency model, not the syllabus, is referenced. Consequently, the performance criteria are used to assess if competence has been achieved, and the tasks/sub-tasks that are carried out by the trainee are the “vehicle” for enabling the assessment to be conducted. Figure 2- 6 illustrates the relationship between Workflows 1 and 2.

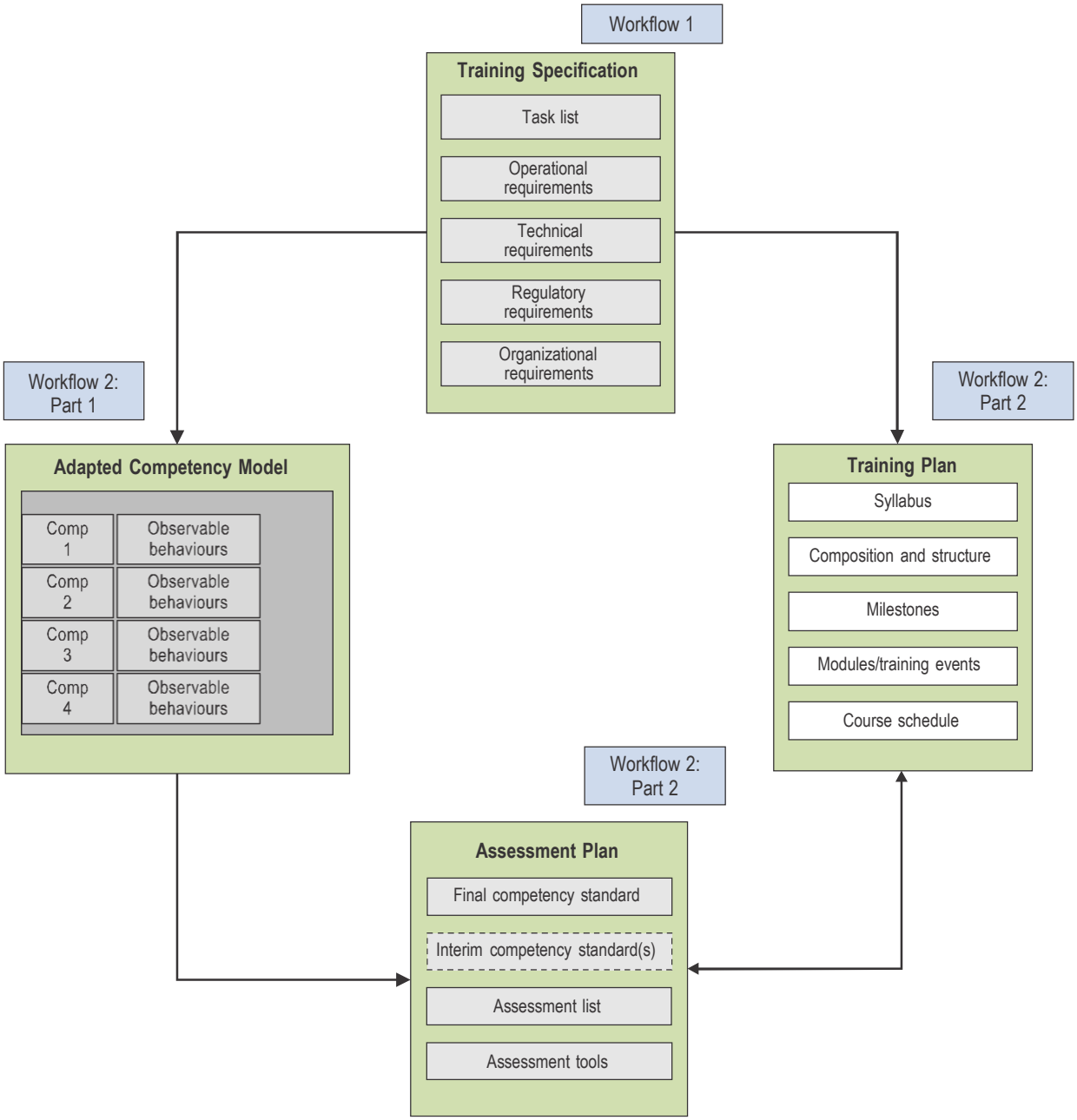

Figure 2-6. Relationship between Workflow 1 and Workflow 2

2.3.4 Workflow 3 — Develop the training and assessment materials

2.3.4.1 The third phase in the development and implementation of a competency-based training and assessment programme is the development of the training and assessment materials. Development is based on the adapted competency model and the training and assessment plans. Training and assessment materials include but are not limited to training notes, exercise briefings, practical exercises, case studies, presentations, video clips, self-test quizzes, examinations, assessments and assessment tools. Figure 2-7 illustrates a detailed overview of this workflow.

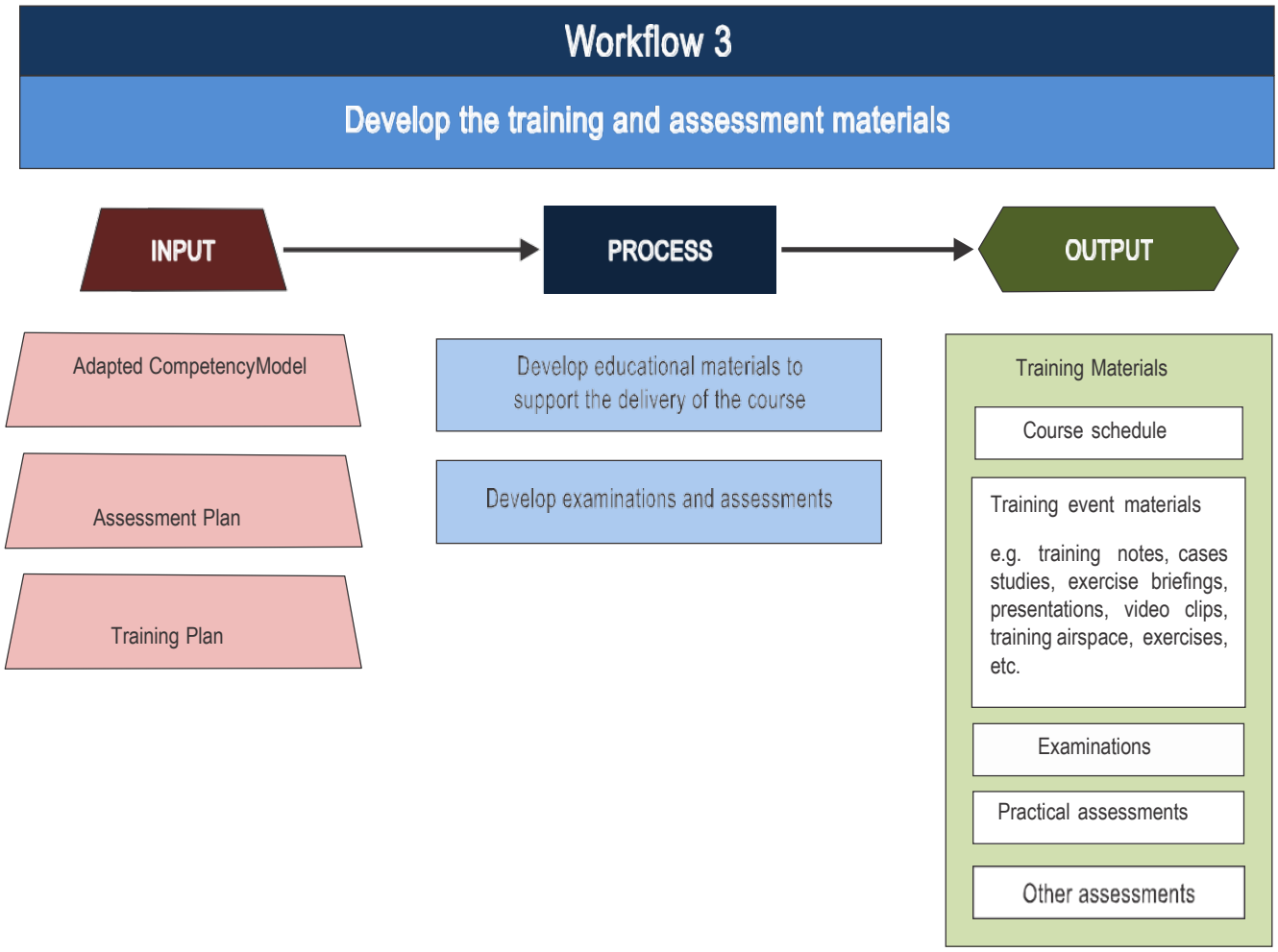

Figure 2-7. Workflow 3 – Develop the training assessment materials

Workflow 4 — Conduct the course in accordancewith the training and assessment plans

2.3.4.2 The fourth phase in the development and implementation of a competency-based training and assessment programme is conducting the course in accordance with the training and assessment plans. This involves delivering the training; monitoring the progress of the trainees; providing timely and continuous feedback on their performance; diagnosing deficiencies in the training and addressing them in a timely manner; and carrying out assessments according to the assessment plan. The goal of this phase is a competent employee. Figure 2-8 illustrates a detailed overview of this workflow.

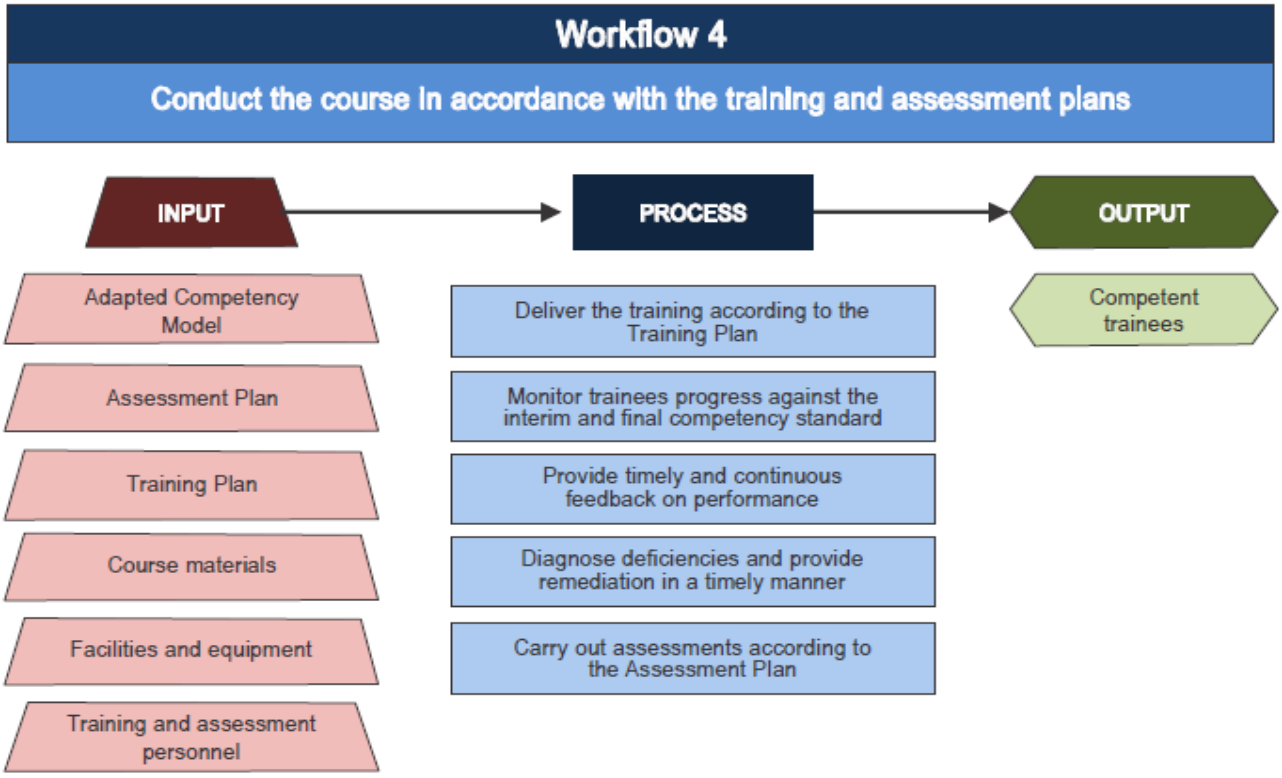

Figure 2-8. Workflow 4 — Conduct the course in accordance with the training and assessment plans

2.3.5 Workflow 5 — Evaluate the course including the training and assessment plans

2.3.5.1 The employer is responsible for ensuring the effectiveness of the training programme. At the end of a period of training, feedback on performance on the job from trainees, instructors, assessors and employers should be gathered to determinethe effectiveness of the training and assessment in supporting the progression of learning towards competence in the workplace. Evaluation of the training should be based on valid and reliable evidence such as course results, trainee feedback, instructor feedback, audit reports, and occurrence reports. This evaluation may lead to changes or improvements being made to the competency-based training and assessment design. Figure 2-9 illustrates a detailed overview of this workflow.

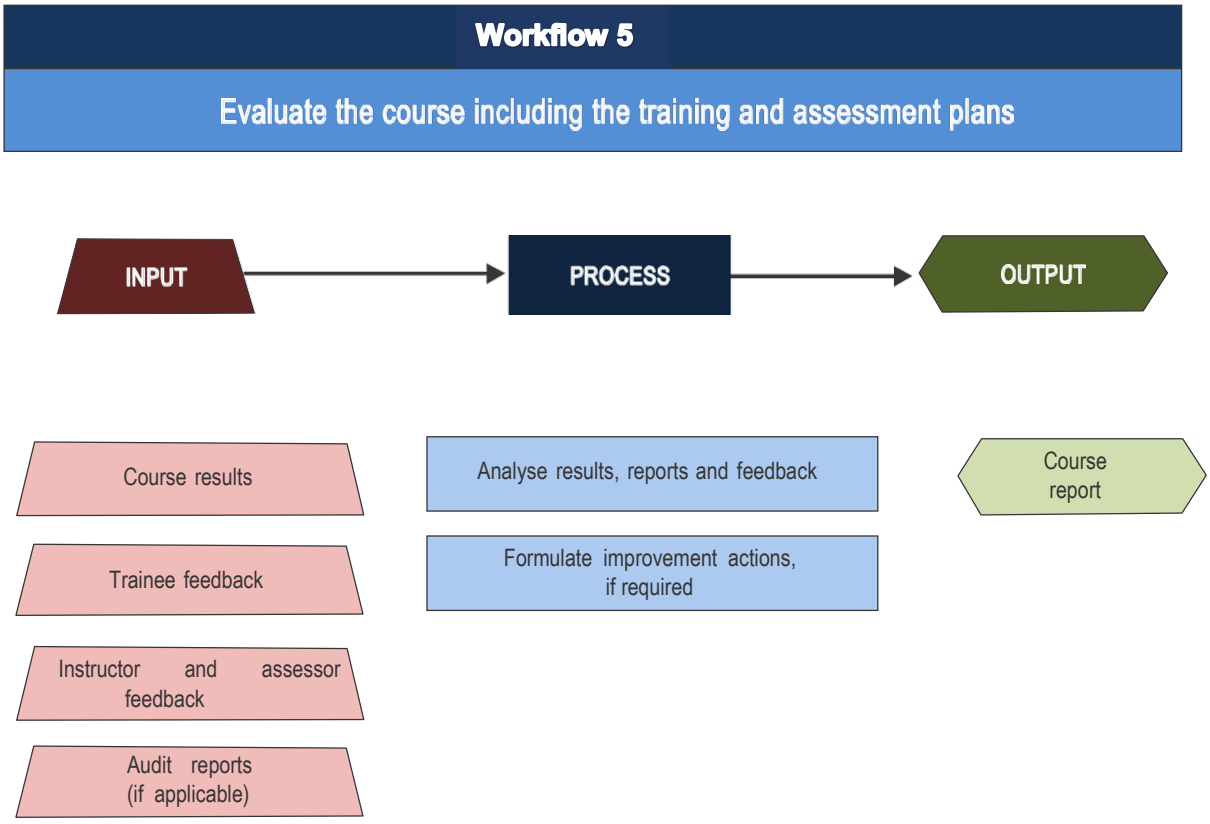

Figure 2-9. Workflow 5 — Evaluate the course including the training and assessment plan

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3 Generic Competency Framework for Dangerous Goods Personnel

3.1 General

3.1.1 This chapter contains a generic ICAO competency framework for dangerous goods personnel as described in Chapter 2. Employers implementing competency-based training and assessment should adapt the framework into an adapted competency model based on their specific requirements. The adapted competency model should include the elements listed in Table 3-1.

Table 3-1: Generic ICAO competency framework for dangerous goods personnel

GENERIC COMPETENCY	DESCRIPTION	OBSERVABLE BEHAVIOUR
Application of procedures and compliance with regulations	Identifies and applies appropriate procedures in accordance with published operating instructions and in compliance with applicable regulations	Identifies where to find procedures and regulations
		Follows relevant procedures in a timely manner
		Complies with applicable regulations
		Applies relevant procedural knowledge
Communication	Communicates through appropriate means in the work environment, in both normal and non-normal situations	Ensures the recipient is ready and able to receive information
		Selects appropriately what, when, how and with whom tocommunicate
		Conveys messages clearly, accurately and concisely
		Confirms that the recipient correctly understands importantinformation
		Listens actively and demonstrates understanding when receivinginformation
		Asks relevant and effective questions
		Completes accurate reports as required by operating procedures
		Announces deviations from normal or intended conditions
		Correctly uses and interprets non-verbal communication

GENERIC COMPETENCY	DESCRIPTION	OBSERVABLE BEHAVIOUR
Leadership, teamwork and self-management	Demonstrates effective leadership, teamwork and self-management	Encourages team participation and open communication
		Demonstrates initiative and provides direction when required
		Engages others in planning
		Considers inputs from others
		Gives and receives feedback constructively
		Addresses and resolves conflicts and disagreements in a constructive manner
		Exercises decisive leadership
		Admits mistakes and takes responsibility for own performance, detecting and resolving own errors
		Carries out instructions when directed and applies effective intervention strategies when necessary
		Confidently intervenes when important for safety
		Self-evaluates the effectiveness of actions
Problem-solving and decision-making	Identifies problem precursors and resolves actual problems using decision-making techniques, in a timely manner	Seeks accurate and adequate information from appropriate sources
		Identifies and verifies what and why things have gone wrong
		Employs proper problem-solving strategies
		Perseveres in working through problems while prioritizing safety
		Uses appropriate and timely decision-making techniques
		Sets priorities appropriately
		Identifies and considers options as appropriate
		Monitors, reviews and adapts decisions as required
		Identifies, assesses and manages risks and threats to safety effectively
		Adapts when faced with situations where no guidance or procedure exists

GENERIC COMPETENCY	DESCRIPTION	OBSERVABLE BEHAVIOUR
		When an event conducive to startle is encountered, recognizes and manages the situation
Workload management	Maintains available workload capacity by prioritizing and distributing tasks using appropriate resources	Exercises self-control in all situations
		Plans, prioritizes and schedules tasks effectively
		Manages time efficiently when carrying out tasks
		Offers and gives assistance, delegates when necessary
		Seeks and accepts assistance, when appropriate
		Monitors, reviews and cross-checks actions conscientiously
		Verifies that tasks are completed to the expected outcome
		Manages and recovers from interruptions, distractions, variations and failures effectively while performing tasks

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4 Dangerous Goods Task List

4.1 General

4.1.1 This chapter contains a generic list of tasks typically performed by dangerous goods personnel as described in Chapter 1, 1.2.6. It is an indicative list provided as guidance. More tasks may need to be added or removed depending on the scope of the employer's operations. The employer should therefore adapt this task list to reflect the specific tasks performed by its personnel.

4.2 Dangerous goods task list

Table 4-1: Understanding the Basics of Dangerous Goods

0	Understanding the Basics of Dangerous Goods		
	0.1	Recognizing dangerous goods applicability	
		0.1.1	Understand the definition
		0.1.2	Recognize the legal framework (global, national)
		0.1.3	Identify the application and scope
		0.1.4	Differentiate hazard and risk
	0.2	Understanding the general limitations	
		0.2.1	Develop a sense of forbidden dangerous goods
		0.2.2	Recognize potential hidden dangerous goods
		0.2.3	Familiarise with passenger pro- visions
	0.3	Identifying roles and responsibilities	
		0.3.1	Clarify the individual and collective role of the supply chain stake- holders
		0.3.2	Understand the passenger's responsibilities
		0.3.3	Recognise the impact of State & operator variations
	0.4	Understanding the importance of classification & packaging	
		0.4.1	Identify the general information about classes, divisions
		0.4.2	Understand general principles of Packing Groups
		0.4.3	Consider multiple hazards
	0.5	Understanding hazard communication	
		0.5.1	Recognise the basic marking requirements
		0.5.2	Recognise the basic labelling requirements
		0.5.3	Identify the required documentation
	0.6	Familiarising with basic emergency response	

		0.6.1	Create awareness about general emergency procedures
		0.6.2	Understand the employer's emergency response requirements

Table 4-2: Classifying Dangerous Goods

1	Classifying Dangerous Goods		
	1.1	Evaluate a substance or an article against the classification criteria	
		1.1.1	Determine if it is dangerous goods
		1.1.2	Determine if it is forbidden under any circumstances
	1.2	Determine dangerous goods description	
		1.2.1	Determine class or division
		1.2.2	Determine packing group
		1.2.3	Determine proper shipping name and UN number
		1.2.4	Determine if it is forbidden unless approval or exemption is granted
	1.3	Review special provisions	
		1.3.1	Assess if special provision(s) is applicable
		1.3.2	Apply special provision(s)

Table 4-3: Preparing Dangerous Goods Shipment

2	Preparing Dangerous Goods Shipment		
	2.1	Assess packing options including quantity limitations	
		2.1.1	Consider limitations (de minimis quantities, excepted quantities, limited quantities, passenger aircraft, cargo aircraft only, special provisions, dangerous goods in the mail)
		2.1.2	Consider State and operator variations
		2.1.3	Determine if all-packed-in-one can be used
		2.1.4	Select how dangerous goods will be shipped based on limitations and variations
	2.2	Apply packing requirements	
		2.2.1	Consider constraints of packing instructions
		2.2.2	Identify and follow the instructions provided by the packaging manufacturer when UN specification packaging is used
		2.2.3	Select appropriate packaging materials (absorbent, cushioning, etc.)
		2.2.4	Assemble package
	2.3	Apply marks and labels	
		2.3.1	Determine applicable marks

		2.3.2	Apply marks
		2.3.3	Determine applicable labels
		2.3.4	Apply labels
	2.4	Assess use of overpack	
		2.4.1	Determine if overpack can be used
		2.4.2	Apply marks if necessary
		2.4.3	Apply labels if necessary
	2.5	Prepare documentation	
		2.5.1	Complete the Shipper's Declaration
		2.5.2	Complete other transport documents (e.g., air waybill)
		2.5.3	Include other required documentation (approvals/exemptions, etc.)
		2.5.4	Retain copies of documents

Table 4-4: Processing/Accepting Cargo

3	**Processing/Accepting Cargo**		
	3.1	Review documentation	
		3.1.1	Verify Shipper's Declaration
		3.1.2	Verify other transport documents (e.g., air waybill)
		3.1.3	Verify other documents (exemptions, approvals, etc.)
		3.1.4	Verify State/operator variations
	3.2	Review package(s)	
		3.2.1	Verify marks
		3.2.2	Verify labels
		3.2.3	Verify packaging type
		3.2.4	Verify package conditions
		3.2.5	Verify State/operator variations
	3.3	Complete acceptance procedures	
		3.3.1	Complete acceptance checklist
		3.3.2	Provide shipment information for load planning
		3.3.3	Retain documents
	3.4	Process/accept cargo other than dangerous goods	
		3.4.1	Check documentation for indications of hidden/undeclared dangerous goods
		3.4.2	Check packages for indications of hidden/undeclared dangerous goods

Table 4-5: Managing Cargo Pre-Loading

4	**Managing Cargo Pre-Loading**		
	4.1	Plan loading	
		3.1.1	Determine stowage requirements
		3.1.2	Determine segregation, separation, compartment limitations
	4.2	Prepare load for aircraft	
		3.2.1	Check packages for indications of hidden/undeclared dangerous goods
		3.2.2	Check for damage and/or leakage
		3.2.3	Apply stowage requirements (i.e., segregation, separation, orientation, securing and protecting from damage)
		3.2.4	Apply ULD tags when applicable
		3.2.5	Transport cargo to aircraft
	4.3	Issue NOTOC	
		3.3.1	Enter required information
		3.3.2	Verify conformance with load plan
		3.3.3	Transmit to loading personnel

Table 4-6: Accepting Passenger and Crew Baggage

5	**Accepting passenger and crew baggage**		
	5.1	Process baggage	
		5.2.1	Identify forbidden dangerous goods
		5.2.2	Apply approval requirements
	5.2	Accept baggage	
		5.2.1	Apply operator requirements
		5.2.2	Verify passenger baggage requirements
		5.2.3	Advise pilot-in-command, when applicable

Table 4-7: Transporting Cargo/Baggage

6	Transporting Cargo/Baggage		
	6.1	Load aircraft	
		6.1.1	Transport cargo/baggage to aircraft
		6.1.2	Check packages for indications of hidden/undeclared dangerous goods
		6.1.3	Check for damage and/or leakage
		6.1.4	Apply stowage requirements (i.e., segregation, separation, orientation, securing and protecting from damage)
		6.1.5	Verify aircraft load against NOTOC
		6.1.6	Provide NOTOC information to pilot-in-command and flight operations officer/flight dispatcher
	6.2	Manage dangerous goods pre and during flight	
		6.2.1	Address dangerous goods not permitted in baggage
		6.2.2	Identify Interpret NOTOC
		6.2.3	Apply procedures in the event of an emergency
		6.2.3	Inform flight operations officer/flight dispatcher/air traffic control in the event of an emergency
		6.2.4	Inform emergency services of the dangerous goods on the NOTOC in the event of an emergency
	6.3	Unload aircraft	
		6.3.1	Apply specific unloading considerations
		6.3.2	Check packages for indications of hidden/undeclared dangerous goods
		6.3.3	Check for damage and/or leakage
		6.3.4	Transport cargo/baggage to facility/terminal

Table 4-8: Collecting safety data

7	Collecting safety data	
	7.1	Report dangerous goods accidents
	7.2	Report dangerous goods incidents
	7.3	Report undeclared/mis-declared dangerous goods
	7.4	Report dangerous goods occurrences

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5 Adapted Task Lists for Certain Well-Defined Functions

5.1 Function 1: Personnel Responsible for Preparing Dangerous Goods Consignments

5.1.1 Training and assessment for personnel preparing dangerous goods consignments for transport may be tailored to address only those classes, divisions or even UN numbers that they prepare for transport. Training and assessment may also be limited to address only the specific tasks personnel perform. For example, where personnel are only responsible for the packing, marking and labelling of packages and overpacks, training and assessment may be tailored to address just those tasks. The following are tasks that these personnel typically perform and for which training and assessment would therefore be required.

Table 5.1: Task List for Personnel Responsible for Preparing Dangerous Goods Consignments

Function 1: Personnel Preparing Dangerous Goods Consignments for Transport (Personnel Classifying Dangerous Goods for Transport Is Provided Simultaneously)			
0	**Understanding the basics of dangerous goods**		
	0.1	Dangerous goods applicability	
		0.1.1	Understand the definition
		0.1.2	Recognise the legal framework (global, national)
		0.1.3	Identify the application and scope
		0.1.4	Differentiate hazard and risk
	0.2	Understanding the general limitations	
		0.2.1	Develop a sense of forbidden dangerous goods
		0.2.2	Recognise the potential hidden dangerous goods
		0.2.3	Familiarise with passenger's provisions
	0.3	Identifying roles and responsibilities	
		0.3.1	Clarify the individual and collective role of the supply chain stake-holders
		0.3.2	Understand the passengers responsibilities
		0.3.3	Recognise the impact of State & operator variations
	0.4	Understanding the importance of classification & packaging	
		0.4.1	Identify the general information about classes, divisions
	0.5	Understanding hazard communication	
		0.5.1	Recognise the basic marking requirements
		0.5.2	Recognise the basic labelling requirements
		0.5.3	Identify the required documentation for DG shipments

	0.6	Familiarising with basic emergency response	
		0.6.1	Create awareness about general emergency procedures
		0.6.2	Under the employer's emergency response requirements
1	**Classifying Dangerous Goods**		
	1.1	Evaluate a substance or an article against the classification criteria	
		1.1.1	Determine if it is dangerous goods
		1.1.2	Determine if it is forbidden under any circumstances
	1.2	Determine dangerous goods description	
		1.2.1	Determine class or division
		1.2.2	Determine packing group
		1.2.3	Determine proper shipping name and UN number
		1.2.4	Determine if it is forbidden unless approval or exemption is granted
	1.3	Review special provisions	
		1.3.1	Assess if special provision(s) is applicable
		1.3.2	Apply special provision(s)
2	**Preparing Dangerous Goods Shipment**		
	2.1	Assess packing options including quantity limitations	
		2.1.1	Consider limitations (de minimis quantities, excepted quantities, limited quantities, passenger aircraft, cargo aircraft only, special provisions, dangerous goods in the mail)
		2.1.2	Consider State and operator variations
		2.1.3	Determine if all-packed-in-one can be used
		2.1.4	Select how dangerous goods will be shipped based on limitations and variations
	2.2	Apply packing requirements	
		2.2.1	Consider constraints of packing instructions
		2.2.2	Identify and follow the instructions provided by the packaging manufacturer when UN specification packaging is used
		2.2.3	Select appropriate packaging materials (absorbent, cushioning, etc.)
		2.2.4	Assemble package
	2.3	Apply marks and labels	
		2.3.1	Determine applicable marks
		2.3.2	Apply marks
		2.3.3	Determine applicable labels
		2.3.4	Apply labels
	2.4	Assess use of overpack	
		2.4.1	Determine if overpack can be used

		2.4.2	Apply marks if necessary
		2.4.3	Apply labels if necessary
	2.5	Prepare documentation	
		2.5.1	Complete the Shipper's Declaration
		2.5.2	Complete other transport documents (e.g., air waybill)
		2.5.3	Include other required documentation (approvals/exemptions, etc.)
		2.5.4	Retain copies of documents

5.2 Function 2: Personnel Responsible for Processing or Accepting Goods Presented as General Cargo

5.2.1 Personnel responsible for processing goods presented as general cargo must be competent to perform tasks aimed at preventing undeclared dangerous goods from being accepted into air transport and loaded on an aircraft. They may work for freight forwarders, ground handling agents or operators. Personnel would need to have relevant knowledge to competently perform these tasks. They may need additional knowledge and be capable of performing at a more advanced skill level depending on the actual function/tasks assigned. The following are tasks that these personnel typically perform and for which training and assessment would therefore be required.

Table 5-2: Task List for Personnel Responsible for Processing or Accepting Goods Presented asGeneral Cargo

Function 2: Personnel responsible for processing or accepting goods presented as general cargo			
0	**Dangerous goods applicability**		
	0.1	Recognizing dangerous goods	
		0.1.1	Understand the definition
		0.1.2	Recognise the legal framework (global, national)
		0.1.3	Identify the application and scope
		0.1.4	Differentiate hazard and risk
	0.2	Understanding the general limitations	
		0.2.1	Develop a sense of forbidden dangerous goods
		0.2.2	Recognise potential hidden dangerous goods
		0.2.3	Familiarise with passenger provisions
	0.3	Identifying different roles and responsibilities	
		0.3.1	Clarify the individual and collective role of the supply chain stake-holders
		0.3.2	Recognise the impact of State & operator variations
	0.4	Understanding the importance of classification & packaging	
		0.4.1	Identify the general information about classes, divisions
		0.4.2	Understand general principles of packing groups
		0.4.3	Consider multiple hazards
	0.5	Understanding hazard communication	
		0.5.1	Recognise the basic marking requirements
		0.5.2	Recognise the basic labelling requirements
		0.5.3	Identify the required documentation

	0.6	Familiarising with emergency response	
		0.6.1	Create awareness about general emergency procedures
		0.6.2	Understand the employer's emergency response requirements
3	**Processing/accepting cargo**		
	3.4	Process/accept cargo other than dangerous goods	
		3.4.1	Check documentation for indications of hidden/undeclared dangerousgoods
		3.4.2	Check packages for indications of hidden/undeclared dangerousgoods
7	**Collecting safety data**		
	7.1	Report dangerous goods accidents	
	7.2	Report dangerous goods incidents	
	7.3	Report undeclared/mis-declared dangerous goods	
	7.4	Report dangerous goods occurrences	

5.3 Function 3: Personnel Responsible for Processing or Accepting Dangerous Goods Consignments

5.3.1 Personnel responsible for processing or accepting dangerous goods consignments must be competent to perform tasks aimed at verifying and validating that the dangerous goods being offered for transport comply with the applicable provisions of the Regulations and are in a suitable condition for air transport. They may work for freight forwarders, ground handling agents or operators. Personnel would need to have relevant knowledge to competently perform these tasks. The following are tasks that these personnel typically perform and for which training and assessment would therefore be required.

Table 5-3: Task List for Personnel Responsible for Processing or Accepting Dangerous Goods Consignments

Function 3: Personnel responsible for processing or accepting dangerous goods consignments			
0	**Understanding the basics of dangerous goods**		
	0.1	Dangerous goods applicability	
		0.1.1	Understand the definition
		0.1.2	Recognize the legal framework (global, national)
		0.1.3	Identify the application and scope
		0.1.4	Differentiate between hazard and risk
	0.2	Understanding the general limitations	
		0.2.1	Develop a sense of forbidden dangerous goods
		0.2.2	Recognise potential hidden dangerous goods
		0.2.3	Familiarised with passenger provisions
	0.3	Identifying different roles and responsibilities	
		0.3.1	Clarify the individual and collective role of the supply chain stake-holders
		0.3.2	Recognise the impact of State & operator variations
	0.4	Understanding the importance of classification & packaging	
		0.4.1	Identify the general information about classes, divisions
		0.4.2	Understand general principles of packing groups
		0.4.3	Consider multiple hazards
	0.5	Understanding hazard communication	
		0.5.1	Recognise the basic marking requirements
		0.5.2	Recognize the basic labelling requirements
		0.5.3	Identify the required documentation

	0.6	Familiarising with basic emergency response	
		0.6.1	Create awareness about general emergency procedures
		0.6.2	Understand the employer's emergency response requirements
1	**Classifying Dangerous Goods**		
	1.2	Determine dangerous goods description	
		1.2.1	Determine class or division
		1.2.2	Determine packing group
		1.2.3	Determine proper shipping name and UN number
		1.2.4	Determine if it is forbidden unless approval or exemption is granted
	1.3	Review special provisions	
		1.3.1	Assess if special provision(s) is applicable
3	**Processing/accepting cargo**		
	3.1	Review documentation	
		3.1.1	Verify Shipper’s Declaration
		3.1.2	Verify other transport documents (e.g., air waybill)
		3.1.3	Verify other documents (exemptions, approvals, etc.)
		3.1.4	Verify State/operator variations
	3.2	Review package(s)	
		3.2.1	Verify marks
		3.2.2	Verify labels
		3.2.3	Verify packaging type
		3.2.4	Verify package conditions
		3.2.5	Verify State/operator variations
	3.3	Complete acceptance procedures	
		3.3.1	Complete acceptance checklist
		3.3.2	Provide shipment information for load planning
		3.3.3	Retain documents as required
7	**Collecting safety data**		
	7.1	Report dangerous goods accidents	
	7.2	Report dangerous goods incidents	
	7.3	Report undeclared/mis-declared dangerous goods	
	7.4	Report dangerous goods occurrences	

5.4 Function 4: Personnel Responsible for Handling Cargo in a Warehouse, Loading and Unloading Unit Load Devices and Loading and Unloading Aircraft Cargo Compartments

5.4.1 The following are tasks that personnel responsible for handling cargo in a warehouse, loading and unloading unit load devices and loading and unloading passenger baggage and aircraft cargo compartments typically perform and for which training and assessment would therefore be required.

Table 5-4: Task List for Personnel Responsible for Handling in a Warehouse, Loading and UnloadingUnit Load Devices and Loading and Unloading Aircraft Cargo Compartments

Function 4: Personnel responsible for handling cargo in a warehouse, loading and unloading ULD and loading and unloading aircraft cargo compartments.			
0	**Understanding the basics of dangerous goods**		
	0.1	Dangerous goods applicability	
		0.1.1	Understand the definition
		0.1.2	Recognize the legal framework (global, national)
		0.1.3	Identify the application and scope
		0.1.4	Differentiate hazard and risk
	0.2	Understanding the general limitations	
		0.2.1	Develop a sense of hidden dangerous goods
		0.2.2	Recognise potential hidden dangerous goods
		0.2.3	Familiarise with passenger provisions
	0.3	Identifying roles and responsibilities	
		0.3.1	Clarify the individual and collective role of the supply chain stake-holders
		0.3.2	Recognise the impact of State & operator variations
	0.4	Understanding the importance of classification & packaging	
		0.4.1	Identify the general information about classes, divisions
		0.4.2	Understand general principles of packing groups
		0.4.3	Consider multiple hazards
	0.5	Understanding hazard communication	
		0.5.1	Recognise the basic marking requirements
		0.5.2	Recognise the basic labelling requirements
	0.6	Familiarising with basic emergency response	
		0.6.1	Create awareness about general emergency procedures
		0.6.3	Under the employer's emergency response requirements

4	**Managing cargo pre-loading**		
	4.1	Plan the load	
		4.1.1	Determine stowage requirements
		4.1.2	Determine segregation, separation, cargo compartment limitations
	4.2	Prepare load for aircraft	
		4.2.1	Check packages for indications of hidden/undeclared dangerous goods
		4.2.2	Check for damage and/or leakage
		4.2.3	Apply stowage requirements (i.e., segregation, separation, orientation, securing and protecting from damage)
		4.2.4	Apply ULD tags when applicable
		4.2.5	Transport cargo to aircraft
6	**Transporting cargo/baggage**		
	6.1	Load aircraft	
		6.1.1	Transport cargo/baggage to aircraft
		6.1.2	Check packages for indications of hidden/undeclared dangerous goods
		6.1.3	Check for damage and/or leakage
		6.1.4	Apply stowage requirements (i.e., segregation, separation, orientation, securing and protecting from damage)
		6.1.5	Verify aircraft load against NOTOC
	6.3	Unload aircraft	
		6.3.1	Apply specific unloading considerations
		6.3.2	Check packages for indications of hidden/undeclared dangerous goods
		6.3.3	Check for damage and/or leakage
		6.3.4	Transport cargo/baggage to facility/terminal
7	**Collecting safety data**		
	7.1	Report dangerous goods accidents	
	7.2	Report dangerous goods incidents	
	7.3	Report undeclared/mis-declared dangerous goods	
	7.4	Report dangerous goods occurrences	

5.5 Function 5: Personnel Responsible for Accepting Passenger and Crew Baggage, Managing Aircraft Boarding Areas and other Functions Involving Direct Passenger Contact at an Airport

5.5.1 The following are tasks that personnel responsible for accepting passenger and crew baggage, managing aircraft boarding areas and other functions involving direct passenger contact at an airport typically perform and for which training and assessment would therefore be required.

Table 5-5: Task List for Personnel Responsible for Accepting Passenger and Crew Baggage, ManagingAircraft Boarding Areas and other Functions Involving Direct Passenger Contact at an Airport

Function 5: Personnel responsible for accepting passenger and crew baggage, managing aircraft boarding areasand other functions involving direct passenger contact at an airport.			
0	**Understanding the basics of dangerous goods**		
	0.1	Dangerous goods applicability	
		0.1.1	Understand the definition
		0.1.2	Recognise the legal framework (global, national)
		0.1.3	Identify the application and scope
		0.1.4	Differentiate hazard and risk
	0.2	Understanding the general limitations	
		0.2.1	Develop a sense of hidden dangerous goods
		0.2.2	Recognise potential hidden dangerous goods
		0.2.3	Familiarise with passenger provisions
	0.3	Identifying roles and responsibilities	
		0.3.1	Clarify the individual and collective role of the supply chain stake-holders
		0.3.2	Understand the passengers responsibilities
		0.3.3	Recognise the impact of State & operator variations
	0.4	Understanding the criticality of classification & packaging	
		0.4.1	Identify the general information about classes, divisions
	0.5	Understanding hazard communication	
		0.5.1	Recognise basic marking requirements
		0.5.2	Recognise basic labelling requirements
		0.5.3	Identify the required documentation
	0.6	Familiarising with basic emergency response	
		0.6.1	Create awareness about general emergency procedures
		0.6.2	Understand the employer's emergency response requirements

5	**Accepting passenger and crew baggage**		
	5.1	Process baggage	
		5.1.1	Identify forbidden dangerous goods
		5.1.2	Apply approval requirements
	5.2	Accept baggage	
		5.2.1	Apply operator requirements
		5.2.2	Verify passenger baggage requirements
		5.2.3	Advise pilot-in-command, when applicable
7	**Collecting safety data**		
	7.1	Report dangerous goods accidents	
	7.2	Report dangerous goods incidents	
	7.3	Report undeclared/mis-declared dangerous goods	
	7.4	Report dangerous goods occurrences	

5.6 Function 6: Personnel Responsible for the Planning of Aircraft Loading

5.6.1 The following are tasks related to dangerous goods that would typically be performed and for which training and assessment would therefore be required by personnel responsible for planning of the distribution of the load (baggage, mail and cargo) that will be loaded into the aircraft cargo compartments.

Table 5-6: Task List for Personnel Responsible for the Planning of Aircraft Loading

Function 6: Personnel responsible for the planning of aircraft loading.			
0	**Understanding the basics of dangerous goods**		
	0.1	Dangerous goods applicability	
		0.1.1	Understand the definition
		0.1.2	Recognize the legal framework (global, national)
		0.1.3	Identify the application and scope
		0.1.4	Differentiate hazard and risk
	0.2	Understanding the general limitations	
		0.2.1	Develop a sense of forbidden dangerous goods
		0.2.2	Recognise potential hidden dangerous goods
		0.2.3	Familiarise with passenger provisions
	0.3	Identifying roles and responsibilities	
		0.3.1	Clarify the individual and collective role of the supply chain stake-holders
		0.3.2	Understand the passenger's responsibilities
		0.3.3	Recognised the impact of State & operator variations
	0.4	Understanding the importance of classification & packaging	
		0.4.1	Identify the general information about classes, divisions
		0.4.2	Understand general principles of packing groups
		0.4.3	Consider multiple hazards
	0.5	Understanding hazard communication	
		0.5.1	Recognise the basic marking requirements
		0.5.2	Recognise the basic labelling requirements
		0.5.3	Identify the required documentation
	0.6	Familiarising with basic emergency response	
		0.6.1	Create awareness about general emergency procedures
		0.6.2	Understand the employer's emergency response requirements

4	**Managing cargo pre-loading**		
	4.1	Plan the load	
		4.1.1	Determine stowage requirements
		4.1.2	Determine segregation, separation, compartment limitations
	4.3	Issue NOTOC	
		4.3.1	Enter required information
		4.3.2	Verify conformance with load plan
		4.3.3	Transmit to loading personnel
7	**Collecting safety data**		
	7.1	Report dangerous goods accidents	
	7.2	Report dangerous goods incidents	
	7.3	Report undeclared/mis-declared dangerous goods	
	7.4	Report dangerous goods occurrences	

5.7 Function 7: Flight Crew

5.7.1 The following are tasks that flight crew would typically perform and for which training and assessment would therefore be required.

Table 5-7: Task List for Flight Crew

Function 7: Flight Crew			
0	**Understanding the basics of dangerous goods**		
	0.1	Dangerous goods applicability	
		0.1.1	Understand the definition
		0.1.2	Recognise the legal framework (global, national)
		0.1.3	Identify the application scope
		0.1.4	Differentiate hazard and risk
	0.2	Understanding the general limitations	
		0.2.1	Develop a sense of forbidden dangerous goods
		0.2.2	Recognise potential hidden dangerous goods
		0.2.3	Familiarise with passenger provisions
	0.3	Identifying roles and responsibilities	
		0.3.1	Clarify the individual and collective role of the supply chain stake-holders
		0.3.2	Understand the passenger's responsibilities
		0.3.3	Recognise the impact of State & operator variations
	0.4	Understanding the importance of classification & packaging	
		0.4.1	Identify the general information about classes, divisions
		0.4.2	Understand general principles of packing groups
		0.4.3	Consider multiple hazards
	0.5	Understanding hazard communication	
		0.5.1	Recognise the basic marking requirements
		0.5.2	Recognise the basic labelling requirements
		0.5.3	Identify the required documentation
	0.6	Familiarising with basic emergency response	
		0.6.1	Create awareness about general emergency procedures
		0.6.2	Understand the employer's emergency response requirements
6	**Transporting cargo/baggage**		
	6.2	Manage dangerous goods pre and during flight	
		6.2.1	Address dangerous goods not permitted in baggage

		6.2.2	Interpret NOTOC
		6.2.3	Apply procedures in the event of an emergency
		6.2.4	Inform flight operations officer/flight dispatcher/air traffic control in theevent of an emergency
		6.2.5	Inform emergency services of the dangerous goods on the NOTOC inthe event of an emergency
7	**Collecting safety data**		
	7.1	Report dangerous goods accidents	
	7.2	Report dangerous goods incidents	
	7.3	Report undeclared/mis-declared dangerous goods	
	7.4	Report dangerous goods occurrences	

5.8 Function 8: Flight Operations Officers and Flight Dispatchers

5.8.1 The following are tasks that flight operations officers and flight dispatchers would typically perform and for which training and assessment would therefore be required.

Table 5-8: Task List for Flight Operations Officers and Flight Dispatchers

Function 8: Personnel responsible for flight operations and flight dispatchers			
0	**Understanding the basics of dangerous goods**		
	0.1	Dangerous goods applicability	
		0.1.1	Understand the definition
		0.1.2	Recognise the legal framework (global, national)
		0.1.3	Identify the application and scope
		0.1.4	Differentiate hazard and risk
	0.2	Understanding the general limitations	
		0.2.1	Develop a sense of forbidden dangerous goods
		0.2.2	Recognise potential hidden undeclared dangerous goods
		0.2.3	Familiarise with passenger provisions
	0.3	Identifying roles and responsibilities	
		0.3.1	Clarify the individual and collective role of the supply chain stake-holders
		0.3.2	Understand the passengers responsibilities
		0.3.3	Recognise the impact of State & operator variations
	0.4	Understanding the importance of classification & packaging	
		0.4.1	Identify the general information about classes, divisions
		0.4.2	Understand general principles of packing groups
		0.4.3	Consider multiple hazards
	0.5	Understanding hazard communication	
		0.5.1	Recognise the basic marking requirements
		0.5.2	Recognise the basic labelling requirements
		0.5.3	Identify the required documentation
	0.6	Familiarising with basic emergency response	
		0.6.1	Create awareness about general emergency procedures
		0.6.3	Understand the employer's emergency response requirements

6	**Transporting cargo/baggage**		
	6.2	Manage dangerous goods pre and during flight	
		6.2.1	Address dangerous goods not permitted in baggage
		6.2.2	Interpret NOTOC
		6.2.3	Apply procedures in the event of an emergency
		6.2.4	Inform flight operations officer/flight dispatcher/air traffic control in theevent of an emergency
		6.2.5	Inform emergency services of the dangerous goods on the NOTOC inthe event of an emergency

5.9 Function 9: Cabin Crew

5.9.1 The following are tasks that cabin crew would typically perform and for which training and assessment would therefore be required.

Table 5-9: Task List for Cabin Crew

Function 9: Cabin Crew			
0	**Understanding the basics of dangerous goods**		
	0.1	Dangerous goods applicability	
		0.1.1	Understand the definition
		0.1.2	Recognise the legal framework (global, national)
		0.1.3	Identify the application and scope
		0.1.4	Differentiate hazard and risk
	0.2	Understanding the general limitations	
		0.2.1	Develop a sense of forbidden dangerous goods
		0.2.2	Recognise the potential hidden dangerous goods
		0.2.3	Familiarise with passenger's provisions
	0.3	Identifying roles and responsibilities	
		0.3.1	Clarify the individual and collective role of the supply chain stake-holders
		0.3.2	Understand the passengers responsibilities
		0.3.3	Recognise the impact of State & operator variations
	0.4	Understanding the importance of classification & packaging	
		0.4.1	Identify the general information about classes, divisions
	0.5	Understanding hazard communication	
		0.5.1	Recognise the basic marking requirements
		0.5.2	Recognise the basic labelling requirements
		0.5.3	Identify the required documentation for DG shipments
	0.6	Familiarising with basic emergency response	
		0.6.1	Create awareness about general emergency procedures
		0.6.2	Under the employer's emergency response requirements
5	**Accepting passenger and crew baggage**		
	5.2	Accept baggage	
		5.2.1	Apply operator requirements

		5.2.2	Verify passenger baggage requirements
6	**Transporting cargo/baggage**		
	6.2	Manage dangerous goods pre and during flight	
		6.2.1	Address dangerous goods not permitted in baggage
		6.2.3	Apply procedures in the event of an emergency
7	**Collecting safety data**		
	7.1	Report dangerous goods accidents	
	7.2	Report dangerous goods incidents	
	7.3	Report undeclared/mis-declared dangerous goods	
	7.4	Report dangerous goods occurrences	

5.10 Function 10: Personnel Responsible for the Screening of Passengers and Crew and their Baggage, Cargo and Mail

5.10.1 The following are tasks that personnel responsible for the screening passengers and crew and their baggage, cargo and mail would typically perform and for which training and assessment would therefore be required.

Table 5-10: Task List for Personnel Responsible for the Screening of Passengers and Crew and their Baggage, Cargo and Mail

Function 10: Personnel responsible for security screening (Passengers and crew, baggage, cargo and mail)			
0	**Understanding the basics of dangerous goods**		
	0.1	Dangerous goods applicability	
		0.1.1	Understand the definition
		0.1.2	Recognise the legal framework (global, national)
		0.1.3	Identify the application and scope
		0.1.4	Differentiate hazard and risk
	0.2	Understanding the general limitations	
		0.2.1	Develop a sense of forbidden dangerous goods
		0.2.2	Recognise potential hidden dangerous goods
		0.2.3	Familiarise with passenger provisions
	0.3	Identifying roles and responsibilities	
		0.3.1	Clarify the individual and collective role of the supply chain stakeholders
		0.3.2	Understand the passenger's responsibilities
		0.3.3	Recognise the impact of State & operator variations
	0.4	Understanding the importance of classification & packaging	
		0.4.1	Identify the general information about classes, divisions
	0.5	Understanding hazard communication	
		0.5.1	Recognise the basic marking requirements
		0.5.2	Recognise the basic labelling requirements
		0.5.3	Identify the required documentation
	0.6	Familiarising with basic emergency response	
		0.6.1	Create awareness about general emergency procedures
		0.6.2	Understand the employer's emergency response requirements
3	**Processing/accepting cargo**		
	3.4	Process/accept cargo other than dangerous goods	
		3.4.1	Check documentation for indications of hidden/undeclared dangerous goods

		3.4.2	Check packages for indications of hidden/undeclared dangerous goods
5	**Accepting passenger and crew baggage**		
	5.1	Process baggage	
		5.1.1	Identify forbidden dangerous goods
		5.1.2	Apply approval requirements
7	**Collecting safety data**		
	7.1	Report dangerous goods accidents	
	7.2	Report dangerous goods incidents	
	7.3	Report undeclared/mis-declared dangerous goods	

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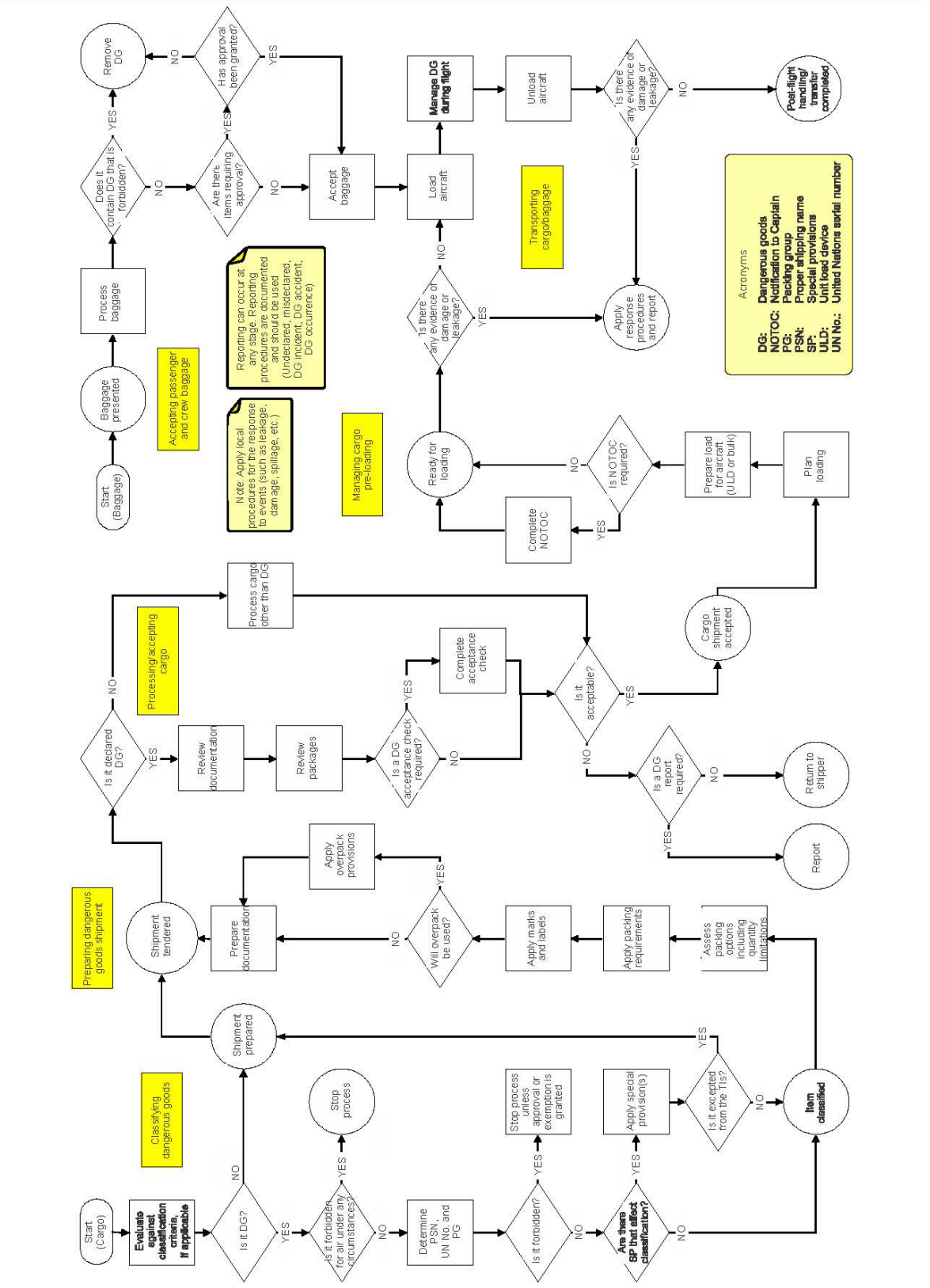
6 Appendices

6.1 Appendix 1 (Chapter 4): DANGEROUS GOODS FUNCTIONS — PROCESS FLOWCHART



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