APPENDIX H—TRAINING PROVISIONS UNDER THE COMPETENCY-BASED TRAINING APPROACH

Introduction

The goal of competency-based training and assessment is to provide focused training in order to produce a competent workforce. 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.

The 26th meeting of the ICAO Dangerous Goods Panel (DGP/26) held in October 2017 had agreed on the future provisions for dangerous goods training and developed guidance on a competency-based approach to dangerous goods training. The implementation of the new provisions was planned for implementation in the 2019-2020 edition of the ICAO Technical Instructions. However, the adoption of the new provisions has been deferred and is now expected to be published in the 2021-2022 edition of the Technical Instructions.

These Regulations require that employers ensure personnel are trained to perform their designated function(s) competently (see DGR 1.5.7). The IATA Dangerous Good Board (DGB) has supported the IATA Dangerous Goods Training Working Group (DGTWG) to develop guidelines for implementation.

These guidelines are based on the principle that an essential component of a competency-based approach to training is the development of a competency framework. A competency framework is a structure outlining an employee's expected performance for given functions. The framework consists of seven steps that are being shared with industry for feedback.

This appendix provides readers with:

H.1 The revised training provisions as agreed by ICAO DGP/26

- while the wording of the revised provisions has changed, the principle of "commensurate with responsibilities" and the goal of ensuring all employees perform their functions competently has not. The revisions to the regulations simply emphasizes these principles by supporting a competency-based approach to training and assessment.

- **H.2 The guidelines developed by the DGTWG - "Dangerous good training programs guidelines—Competency-based training and assessment (CBTA) approach":**
  - these guidelines are intended to assist designers and developers of dangerous goods training programs in the entire process when establishing dangerous goods training programs under the competency-based training approach as adopted by ICAO. These guidelines present an industry consulted benchmark for new and established dangerous goods training programs under the CBTA approach. However, readers must bear in mind that the main principle of this approach is to provide training covering knowledge and skills that allow the employees to perform their job function at the required performance level that satisfies safety and is commensurate with their responsibilities.
  - these guidelines are in full compliance with these Regulations as per Subsection H.1.5, the [employer/designer/developer/instructor] must tailor the material found in these guidelines to reach the level of competency required for each function identified, as per H.1.5.

The content of the guidelines to implement CBTA in this Appendix H.2 is provided with the intention of receiving feedback from industry under https://www.iata.org/whatwedo/cargo/dgr/Pages/index.aspx. Readers of this appendix are kindly invited to visit the URL provided and be part of the final development of this industry oriented Guidelines material.

Notes:

1. *Editorial notes have been added where appropriate to assist users to understand the implications of the changes. Provisions that are still subject to ongoing discussion by the ICAO DGP are enclosed in square brackets [ ] to identify that they may not appear as shown in this appendix or may be modified in the final Regulations.*

2. *To assist readers of this appendix, the section references in the appendix reflect those within the DGR, for example H.1.5.A identifies the changes that will appear in 1.5.*

H.1 REVISED TRAINING PROVISIONS: SECTION 1—APPLICABILITY

H.1.5 Training Requirements

H.1.5.1 Dangerous Goods Training Programmes

H.1.5.1.1 Establishment and Maintenance

Note:
A training programme includes elements such as design methodology, assessment, initial and recurrent training, instructor qualifications and competencies, training records and evaluation of the effectiveness of training.

H.1.5.1.1.1 The employer must establish and maintain a dangerous goods training programme for personnel performing any function described in these Regulations.

H.1.5.1.1.2 The employer [must/should] establish and maintain a dangerous goods training program for personnel who may not perform any function described in these Regulations but do perform functions related to the movement of cargo, baggage, passengers, or mail. The aim of the program is to ensure personnel are competent to perform functions aimed at preventing undeclared dangerous goods or dangerous goods not permitted from being carried on an aircraft.

Note:
Security personnel who are involved with the screening of passengers and crew and their baggage and cargo or mail are required to be trained irrespective of whether the operator on which passenger or cargo is to be transported carries dangerous goods as cargo.

H.1.5.1.1.3 All operators must establish a dangerous goods training programme regardless of whether or not they are approved to transport dangerous goods as cargo.

H.1.5.1.1.4 Training courses may be developed and delivered by or for the employer.

Note:
The objective of a dangerous goods training programme is to ensure that persons are competent to perform their assigned functions. An approach to achieving this objective is provided in Appendix H.2: "Dangerous good training programs guidelines - Competency-based training and assessment (CBTA) approach."

H.1.5.1.2 Objective of Dangerous Goods Training

H.1.5.1.2.1 The employer must ensure that personnel are competent to perform any function for which they are responsible prior to performing any of these functions. This must be achieved through training and assessment commensurate with the functions for which they are responsible. Such training must include:

(a) general familiarization training—which must be aimed at providing familiarity with the general provisions;

(b) function specific training—which must provide detailed training in the requirements applicable to the function for which that person is responsible; and

(c) safety training—which must cover the hazards presented by dangerous goods, safe handling and emergency response procedures.

Note:
General information on the provisions for dangerous goods carried by passengers and crew (see 2.3) should be included in training courses, as appropriate.

H.1.5.1.2.2 Personnel who have received training but who are assigned to new functions must be assessed to determine their competence in respect of their new function. If competency is not demonstrated, appropriate additional training must be provided.

H.1.5.1.2.3 Personnel must be trained to recognize the hazards presented by dangerous goods, to safely handle them and to apply appropriate emergency response procedures.

H.1.5.1.3 Recurrent Training and Assessment

Personnel must receive recurrent training and assessment within 24 months of previous training and assessment to ensure that competency has been maintained. However, if recurrent training and assessment is completed within the final three months of validity of the previous training and assessment, the period of validity extends from the month on which the recurrent training and assessment was completed until 24 months from the expiry month of that previous training and assessment. For example, a person attends an initial course finishing on 14 April 2019; their training validity therefore expires 30 April 2021. They may attend recurrent training any time between 1 February and 30 April 2021 and their next recurrent training date will remain 30 April 2023. If, however they complete recurrent training in January 2021, then as this is more than 3 months prior to the end of April then their training expiry date becomes 31 January 2023.

H.1.5.1.4 Training and Assessment Records

H.1.5.1.4.1 The employer must maintain a record of training and assessment for personnel.

H.1.5.1.4.2 The record of training and assessment must be maintained, which must include:

- the individual's name;
- the most recent training and assessment completion month;
- a description, copy or reference to training and assessment materials used to meet the training and assessment requirements;
- the name and address of the organization providing the training and assessment; and
- evidence which shows that personnel have been assessed as competent to perform their responsibilities.

H.1.5.1.4.3 Training and assessment records must be retained by the employer for a minimum period of thirty-six months from the most recent training and assessment completion month and must be made available upon request to the employee or appropriate national authority.

H.1.5.2 Review and Approval of Training Programs

H.1.5.2.1 Dangerous goods training programmes for operators' must be approved by the appropriate authority of the State of the Operator in accordance with the provisions of Annex 6—Operation of Aircraft.

H.1.5.2.2 Dangerous goods training programmes required for entities other than operators and designated postal operators should be approved as determined by the appropriate national authority.

Note:
See H.1.5.4.2 for approval of training programmes for designated postal operators.

H.1.5.3 Instructor Qualifications and Competencies

H.1.5.3.1 Unless otherwise provided for by the appropriate national authority, instructors of initial and recurrent dangerous goods training programmes must demonstrate or be assessed as competent in instruction and the function(s) that they will instruct prior to delivering such a dangerous goods training programme.

H.1.5.3.2 Instructors delivering initial and recurrent dangerous goods training programmes must deliver such a course at least every 24 months, or in the absence of this attend recurrent training.

H.1.5.3.3 Instructors must receive and understand updates to dangerous goods information and be made familiar with those changes by training or other means on an annual basis or as the Regulations are modified. Organisations must ensure that the instructor receives updates to the Regulations and training material on an annual basis with the issuance of each edition of the DGR.

H.1.5.4 Designated Postal Operators Training Programs

H.1.5.4.1 Staff of designated postal operators must be trained commensurate with their responsibilities. The subject matter to which their various categories of staff should be familiar with is indicated in Table H.1.5.A.

H.1.5.4.2 Dangerous goods training programmes of designated postal operators must be subjected to review and approval by the civil aviation authority of the State where the mail was accepted by the designated postal operator.

TABLE H.1.5.A
Minimum Requirements for Training Curricula for Designated Postal Operators (H.1.5.1.2)

Aspects of transport of dangerous goods by air with which they should be familiar, as a minimum	Designated Postal Operators		
	Category		
	a	b	c
General philosophy	X	X	X
Limitations	X	X	X
General requirements for shippers	X		
Classification	X		
List of dangerous goods	X		
General packing requirements	X		
Packing instructions	X		
Labelling and marking	X	X	X
Shipper's Declaration and other relevant documentation	X	X	
Acceptance of the dangerous goods listed in 2.4	X		
Recognition of undeclared dangerous goods	X	X	X
Storage and loading procedures			X
Provisions for passengers and crew	X	X	X
Emergency procedures	X	X	X

CATEGORY

(a) Staff of designated postal operators involved in accepting mail containing dangerous goods

(b) Staff of designated postal operators involved in processing mail (other than dangerous goods)

(c) Staff of designated postal operators involved in the handling, storage and loading of mail

H.2 DANGEROUS GOODS TRAINING PROGRAM GUIDELINES - COMPETENCY-BASED TRAINING AND ASSESSMENT (CBTA) APPROACH

H.2.1 Competency Based Training and Assessment Philosophy

H.2.1.1 Introduction

ICAO introduced the Procedures for Air Navigation Services—Training (PANS-TRG, Doc 9868) in the form of guidance as a first step towards implementation of competency-based training in 2006. Since then, competency-based training assessment guidance has been developed for several aviation functions including aircraft maintenance personnel, designated medical examiners, flight procedure designers, flight validation pilots, air traffic controllers and air traffic safety electronics personnel.

Most recently the ICAO Dangerous Goods Panel (DGP) undertook the development of guidance on a competency-based approach to dangerous goods training. These guidelines aim to assist operators and other entities involved in the transport of dangerous goods to implement a competency-based approach to dangerous goods training.

Aligned with the principles and the main responsibilities described in the previous part, responsibility is given to the employer to determine the competencies needed by the employee and to be able to assess the level of proficiency prior to them performing a specific function or functions and maintain it according to the regulations.

This responsibility implies that the employer must either be in the position to design and develop the appropriate training program or chose a training provider able to satisfy the regulatory and corporate needs identified for safety and compliance.

In order to assist the employer, these guidelines for dangerous goods training programs under the CBTA approach provide the IATA framework for design and development of training programs summarized in the following simple list of steps to be followed:

1. define the training methodology;
2. design the training program;
3. design trainee (employee) assessment process;
4. develop the training program;
5. trainer/instructor qualifications and competencies;
6. training and assessment records;
7. evaluation of the training program effectiveness.

Additionally, this document includes tools recommended for use during the various phases of design, development and implementation of a training program.

H.2.1.2 What is the Competency-based Training and Assessment Approach?

IATA applies **competency** as a combination of a **specific desired level of proficiency** and the **four competency factors** as described below:

The criteria to determine the level of proficiency must take into account the complexity of activities, the range of work (routine, predictability, and dependencies) and the complexity of the context and the level of autonomy in performing the tasks.

The basic consideration to determine the right level of proficiency should then be consider as follows:

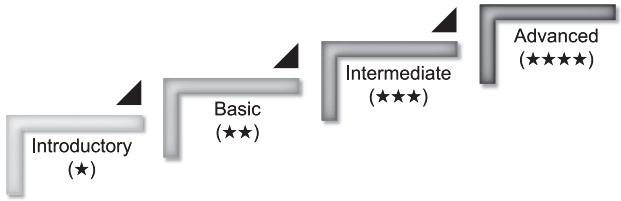
Introductory (★): simple work activities, most of it routine and predictable. Guidance required. Final product highly supervised.

Basic (★★): various work activities, various contexts. Some individual responsibility or autonomy. Limited guidance needed. Result reviewed for quality not in detail (spot checks).

Intermediate (★★★): broad range of activities, complex and non-routine context. High confidence in results, work tested against broader business context. Significant personal autonomy. Team authority in some areas (e.g. supervisor).

Advanced (★★★★): broad range of work. Complex technical and professional activities in a wide variety of contexts. From substantial to wide scope for personal autonomy. Regional and divisional authority in some areas. Regarded as a consultant in some areas.

FIGURE H.1.1
Levels of Proficiency



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The four competency factors considered to achieve a particular level of proficiency are described as:

1. **Knowledge:** is the theoretical or practical understanding of a subject. Means to understand and know the principles.
2. **Skills:** are developed through training or on the job application. Something that has been learned and put into practice.
3. **Attitude:** is the key differentiator on a competency approach. One may have knowledge, skills and experience, however what is the overall approach when doing so? Speaks more to the commitment to the quality, the outcome, the profession. What is your benchmark compared to others on the same environment?
4. **Experience:** is related to the applied knowledge and skills: How often? Where? When? And in which contexts is the combination of the rest of the elements applied to.

FIGURE H.1.2
Competency Factors

Competency is often used as a synonym of skills or experience however it is a status of the combination of all four competency factors at a given time that can be measured at different levels of proficiency and needs to be maintained or increased depending on the job function to be performed.

The CBTA is a systematic training methodology which provides focused training supporting the objective to create and maintain a competent workforce as explained above (competency = combination of a specific desired level of proficiency and four competency factors)

While the wording of the revised provisions has changed, the principle of "commensurate with responsibilities" and the goal of ensuring all employees perform their functions competently has not. The DGR revisions in H.1.5 aim to emphasize these principles by supporting a competency-based approach to training and assessment and providing guidelines and tools for implementation.

H.2.1.3 What are the CBTA Principles?

(a) Focus on job function: it is a function driven methodology, which means that all the deliverables expected from the employer must be clear and well established for the employee. A way to achieve that for training purposes is by performing a clear training needs assessment (TNA) or task analysis (T/A). In simple words it responds to the question, what is the employee expected to do?

(b) Specific assessment of the competency: the assessment design must be done with the objective to measure the performance to be achieved (both regulatory and business requirements). Assessment is a method or way to prove to the employee that the required knowledge and more importantly the skills have been acquired. It is also a way to give confidence to the employee and employer that the tasks and activities will be performed in a competent way.

(c) Tailored content: design the course with the objective of being able to demonstrate the competency. Although there may be content that may be repeated from function to function, not all functions require the same angle or depth in the knowledge or skill around a topic, therefore the content needs to be tailored to the needs of the employee.

The following table summarizes the basic differences between traditional training and the CBTA principles. Although CBTA has been mentioned in the Regulations for some time under the provisions of 1.5.7, the new DGR training provisions (see H.1.5) are more detailed and specific about the principles and elements of the approach.

TRADITIONAL	COMPETENCY–BASED
Based on job title	Based on job function
Subject-matter driven	Aims to reach performance
Wide scope of knowledge	Tailored content & assessments

Another key element of these principles is the role and responsibility of the employer. Employers are given a more explicit responsibility under this approach, where by using a competency-based-training framework: "The employer must establish and maintain a dangerous goods training program for personnel performing any function described in these Regulations." (see H.1.5.1.1.1)

H.2.2 Implementation Guide

H.2.2.1 Introduction

Before getting into the details of how to implement a CBTA program for dangerous goods it is important to review why dangerous goods training is required. In other words what is the regulatory basis for dangerous goods training.

Dangerous goods training is a regulatory requirement mandated by the International Civil Aviation Organisation (ICAO) in their *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Technical Instructions).

The dangerous goods training requirement is implemented by the appropriate national authority of each Member State. State in this context means country.

The Dangerous Goods Regulations (DGR) are based upon and fully aligned with the Technical Instructions and with Annex 18 to the Chicago Convention on International Civil Aviation.

Both IATA and ICAO require that [all personnel involved with dangerous goods must receive training in the subject.] The details of these requirements are to be found in DGR Subsection H.1.5.

As per DGR H.1.5 it is important to put into context that although dangerous goods training has always been required and is a widely used regulatory standard there may be more than one methodology for delivering such training.

These guidelines provide the user with a recommendation on how to comply with the requirements based on the CBTA approach by following the framework as a benchmarked approach to CBTA. In the next section a step by step guide for implementation is provided.

H.2.2.2 Define the Training Methodology

The first step of the competency-based training and assessment (CBTA) IATA framework (see H.2.1.1) proposes to define the training methodology. More than an approach to dangerous goods training, the CBTA is an approach to learning in general that has been used and can be leveraged in many other areas.

The goal of CBTA is to produce a competent workforce and it is a systematic method to support this goal.

CBTA is based on:

(a) identifying the key competencies; the behaviors and/or skills to do the job;

(b) determining the most effective way of achieving these competencies;

(c) establishing valid assessment measures.

The basic principle of CBTA is based on the understanding that each job or role can be clearly defined by a set of relevant competencies and these competencies are transferrable. These key, core competencies can be formulated into a training program that can be trained, demonstrated, learned, observed and assessed consistently in a wide variety of methods.

All stakeholders including the employee, trainer, employer, the training organizations, operators and regulators must have a common understanding of the competencies. The training program ensures that each employee meets the competency standard by successfully demonstrating the competency. The standard or performance criteria is clear and consistent. When the requirements for the competencies are clearly defined the performance is measurable, observable, valid and reliable. The result is a workforce that meets the competency standards and can be more reliably predicated to perform successfully on the job.

To help understand what CBTA is, hereby there are important aspects that differentiate CBTA from traditional training:

(a) shifts focus from trainer to trainee (can the trainee demonstrate the competency?);

(b) is based on job function, not job title;

(c) measures employee learning rather than time spent in training;

(d) combines traditional training and assessment along with video, visuals, role play and demonstration.

In dangerous goods training, the traditional approach has been to train the regulations and test the trainee on their knowledge level of the regulations. The methodology behind CBTA is to train the job competencies which indirectly train the regulatory requirements. The trainee learns the regulations while becoming competent in the job instead of learning the regulations first, and then the job. In other words the knowledge must become a practical skill that will improve with experience.

The CBTA approach has many benefits to learning. The main benefits are listed below:

(a) geared toward learning and proficiency rather than passing a test;

(b) relevant to the job and how the job is required to be performed;

(c) establishes basic level of competence for the job;

(d) provides timely feedback to trainers. Students are assessed on their ability to competently perform their job before leaving training.

CBTA is not a new approach, just relatively new to dangerous goods. As long as the competencies are well defined and agreed to, the CBTA approach will ensure a more competent workforce.

H.2.2.3 Design the Training Program

The second step of the competency-based training and assessment (CBTA) IATA framework proposes the design of the training program itself. Traditionally the first phase in a training program design cycle is the performance analysis. In this phase a **training needs analysis (TNA)** needs to be conducted to determine the performance improvement issues or opportunities.

The output of the TNA offers basic information for the next phase, it will be used to determine the type of training required to achieve the desired level of proficiency by choosing the content sources for each type of intervention appropriately, more details to be included in section H.2.2.5.

Last but not least, during the design of the training program it is also important to establish the frequency. This factor may be determined as part of an international, regional or national regulation as well as corporate requirements to be considered.

H.2.2.3.1 Performing a Training Needs Analysis (TNA)

The objectives of a TNA are to determine the type of training assuming that one is needed, the frequency and the specific circumstances in which the training is needed.

As explained in H.2.2.1, the objective of dangerous goods training is to maintain safety, for that reason dangerous goods training is a legal requirement for several functions and for many others it is a strong safety recommendation. Therefore a baseline assumption of these guidelines is that the establishment of dangerous goods training program is a mandatory requirement and therefore we move directly into the design phase.

The design phase uses the Table H.2.2 as a tool for defining the specific details of the function(s) in need of the training program. This TNA tool has four steps:

Step 1: Defining the function performed by the trainee. This is a key element in the entire process as it is important to be clear of the responsibilities and the deliverables expected from the employee. The ICAO Dangerous Good Panel has developed a dangerous goods functions–process flow chart (see Figure H.2.1) representing the various tasks interacting within the dangerous goods supply chain in air transport.

Based on that flow chart these guidelines provide a list of well-established functions involved in the flow of cargo and passengers where dangerous goods training is required. This list is not exhaustive but it provides the main function found in the supply chain. It is important to remember that a function is not a job tittle but one that describes the core responsibility of an employee in their role.

To illustrate the use of the TNA tool from this point on the following “Function” will be used as an example: “Personnel responsible for processing or accepting dangerous goods consignments” (see H.2.2.9.3). This function refers to personnel responsible for processing or performing the acceptance check on dangerous goods consignments, documentation and packages, offered for air transport.

Step 2: Establishing the tasks to be performed by the employee. Based on Figure H.2.2.1 and many years of operational and training experience the IATA Dangerous Goods Training Working Group proposes the following high level major tasks list:

0 – Understanding the basics of dangerous goods;
1 – Classifying dangerous goods;
2 – Preparing a dangerous goods shipment;
3 – Processing/accepting cargo;
4 – Managing cargo pre-loading;
5 – Accepting passenger and crew baggage;
6 – Transporting cargo/baggage; and
7 – Collecting safety data.

It is important to notice that a particular function may include various major tasks that an employee needs to fulfil to be competent when performing their function.

Following the example for the function: “Personnel responsible for processing or accepting dangerous goods consignments”, the applicable **tasks** will typically be as described below:

Function: Processing or accepting dangerous goods consignments	
0.	Understanding the basics of dangerous goods
3.	Processing/accepting cargo
7	Collecting safety data

For practical reasons each major task unit will be considered a module during the development phase.

Step 3: Defining the activities. Once the employee function(s) and tasks have been identified the next step is to determine the activities suitable for that specific function(s). This step is important in setting the scope of the knowledge, skills and experience required of the person performing the function.

An activity is considered to be an action to be performed when completing a task, the action should be measured by predefined performance criteria.

Following the example for the function: “Personnel responsible for processing or accepting dangerous goods consignments”, where one of the tasks is 3–Processing/accepting cargo where the applicable **activities** will typically be as described below in 3.1, 3.2 and 3.3.

Function: Processing or accepting dangerous goods consignments			
3	Processing/accepting cargo		
	3.1	Review documentation	
		3.1.1	Verify dangerous goods transport document
		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 package 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
	3.4	Process/accept cargo other than dangerous goods	
		3.4.1	Check documentation for indications of undeclared dangerous goods
		3.4.2	Check packages for indications of undeclared dangerous goods

However, it may well be that an employee under the same function has only the task of 3.1–Reviewing documentation, against the regulatory and operational scope and hands over to other colleagues with other tasks to continue the process.

The same analysis must be done with the rest of the tasks identified for the function.

Step 4: Identifying the performance criteria (PC) and level of proficiency is an essential part of the process as it will directly provide information to the training designer and the employee about the level of knowledge, skills that will be assessed and therefore the level of performance to be expected at completion of the program. In other words this step of the analysis must respond to the question: what do we need the employee to be able to do?

Performance criteria (PC) refers to smaller actions and behavior that will help measuring weather or not the knowledge and the skills have been acquire to the required level required. this PC should be helpful in defining key performance indicators to evaluate against. (see H.2.2.4)

In order to appropriately assign the PC and the level of proficiency we now look at the Table H.2.2 – Dangerous Goods Task List - Example as a whole. By using this tool we can make a good practical use of the four components of competency and the considerations to determine the proficiency level:

TABLE H.2.1
Level of Proficiency in Terms of Competency Factors

Competency Factor	Level of proficiency			
	Introductory	Basic	Intermediate	Advanced
Knowledge	1	2	3	4
Skills	1	2	3	4
Experience	0	1	2	3
Attitude	3	4	4	4
Coding	★	★★	★★★	★★★★

Table H.2.1 is trying to graphically explain the reference to the different competency factors (knowledge, skills, experience and attitude) related to the level of proficiency which for easy understanding we have coded with a “stars” system. That way the higher the level of proficiency gets, the higher the level of each competency factor. The numbers 0 to 4 indicate that there is an evolution in the levels of competency factor expected as the proficiency level increases, however not all competency factors need to be at the same level.

With this basic understanding of the interrelation between the competency elements to be considered and clear concepts of function, tasks, activities and performance criteria, then we can use the tool illustrated below to provide a standardised way to establish the TNA. A full view of the matrix tool – Table H.2.2 is provided below which summarizes the step by step approach described for the following function: “Personnel responsible for processing or accepting dangerous goods consignments”.

Where the role or function of a trained employee changes, an assessment based on the new function TNA should be performed to identify gaps in the performance factors (knowledge, skills, experience and attitude) and the result of that assessment will determine the training needs. Based on this result, training addressing the needs of the new function should be conducted based on the new tasks and activities and their respective level of proficiency if higher level than the current level. After the training has been conducted a new assessment should be carried out to determine if the gaps have been closed.

TABLE H.2.2
Dangerous Goods Task List - Example

Function: Personnel responsible for processing or accepting dangerous goods consignments				Knowledge Base	Classifying dangerous goods	Preparing dangerous goods shipment	Processing/ accepting cargo	Managing cargo pre-loading	Accepting passenger and crew baggage	Transporting cargo/ baggage	Collecting safety data
0	Understanding the basics of dangerous goods						★				
	0.1	Recognizing dangerous goods					★				
		0.1.1	Understand the definition								
		0.1.2	Recognize the legal framework (global, local, training legal requirements)								
		0.1.3	Identify the application scope								
	0.2	Identifying the general limitations					★				
		0.2.1	Develop a sense of potential hidden dangerous goods								
		0.2.2	Recognize the difference between hidden vs undeclared dangerous goods								
		0.2.3	Familiarize with passenger provisions vs cargo provisions in various situation (examples)								
	0.3	Positioning different roles and responsibilities					★				
		0.3.1	Clarify the individual and collective role of the supply chain stakeholders								
		0.3.2	Understand the passengers responsibilities								
		0.3.3	Recognize the role and impact of State & operators variations								
	0.4	Understanding the criticality of classification & packaging					★				
		0.4.1	Differentiate between hazard vs risk								
		0.4.2	Identify the general information about classes, divisions								
		0.4.3	Understand general principles of Packing Groups								
		0.4.4	Consider multiple hazards								
	0.5	Interpreting the hazard communication					★				
		0.5.1	Recognize the different marking basic requirements								
		0.5.2	Recognize the variety of labeling and their meaning								
		0.5.3	Identify the required documentation for DG shipments and their role in the process.								
	0.6	Familiarizing with basic Emergency Response					★				
		0.6.1	Create awareness about general emergency procedures								
		0.6.2	Recognize country specific emergency procedures including exemptions and approvals								
		0.6.3	Apply the employer emergency response requirements								

TABLE H.2.2
Dangerous Goods Task List - Example *(continued)*

Function: Personnel responsible for processing or accepting dangerous goods consignments				Knowledge Base	Classifying dangerous goods	Preparing dangerous goods shipment	Processing/ accepting cargo	Managing cargo pre-loading	Accepting passenger and crew baggage	Transporting cargo/ baggage	Collecting safety data
1	Classifying dangerous goods										
	1.1	Evaluate substance or article against 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	Select appropriate packaging materials (absorbent, cushioning, etc.)								
		2.2.3	Assemble package								
		2.2.4	Comply with the packaging test report when UN specification packaging is required								
	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 dangerous goods transport document								
		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 as required								

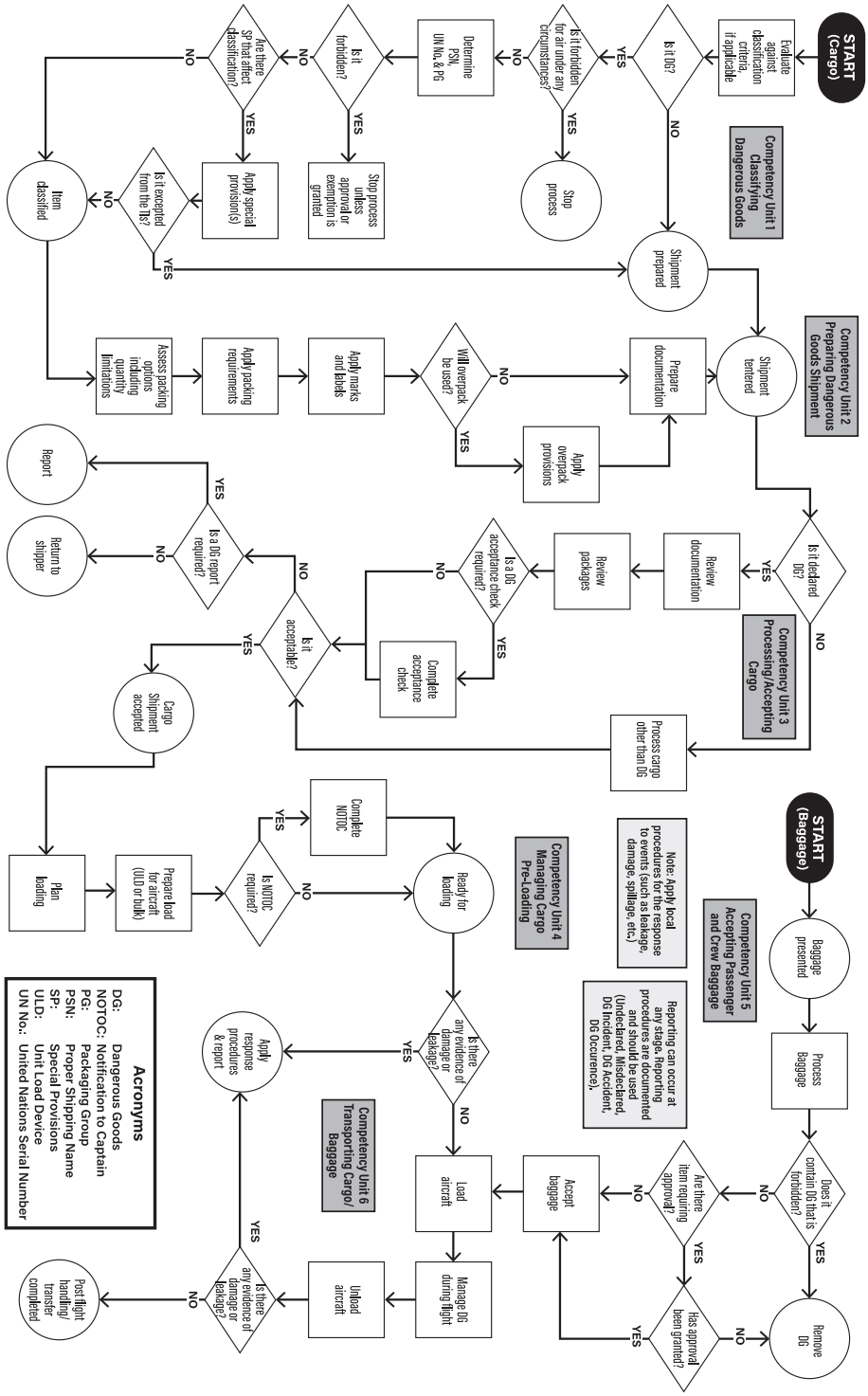
TABLE H.2.2
Dangerous Goods Task List - Example *(continued)*

Function: Personnel responsible for processing or accepting dangerous goods consignments				Knowledge Base	Classifying dangerous goods	Preparing dangerous goods shipment	Processing/ accepting cargo	Managing cargo pre-loading	Accepting passenger and crew baggage	Transporting cargo/ baggage	Collecting safety data
3	Processing/accepting cargo										
	3.1	Review documentation					★★★				
		3.1.1	Verify dangerous goods transport document								
		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 package 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								
	3.4	Process/accept cargo other than dangerous goods					N/A				
		3.4.1	Check documentation for indications of undeclared dangerous goods								
		3.4.2	Check packages for indications of undeclared dangerous goods								
4	Managing cargo pre-loading										
	4.1	Plan loading									
		4.1.1	Determine stowage requirements								
		4.1.2	Determine segregation, separation, aircraft/compartment limitations								
	4.2	Prepare load for aircraft									
		4.2.1	Check packages for indications of undeclared dangerous goods								
		4.2.2	Check for damage and/or leakage								
		4.2.3	Apply stowage requirements (e.g. segregation, separation, orientation)								
		4.2.4	Apply ULD tags when applicable								
		4.2.5	Transport cargo to aircraft								
	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								
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								

TABLE H.2.2
Dangerous Goods Task List - Example *(continued)*

Function: Personnel responsible for processing or accepting dangerous goods consignments				Knowledge Base	Classifying dangerous goods	Preparing dangerous goods shipment	Pro-cessing/ accepting cargo	Managing cargo pre-loading	Accepting passenger and crew baggage	Trans-porting cargo/ baggage	Collecting safety data
6	Transporting cargo/baggage										
	6.1	Load aircraft									
		6.1.1	Transport cargo/baggage to aircraft								
		6.1.2	Check packages for indications of undeclared dangerous goods								
		6.1.3	Check for damage and/or leakage								
		6.1.4	Apply stowage requirements (e.g. segregation, separation, orientation, securing and protecting from damage)								
		6.1.5	Verify that NOTOC reflects against aircraft load								
		6.1.6	Verify passenger baggage requirements								
		6.1.7	Inform pilot-in-command and flight operations officer/flight dispatcher								
	6.2	Manage dangerous goods pre and during flight									
		6.2.1	Detect presence of 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 the event of an emergency								
		6.2.5	Inform emergency services of the dangerous goods on board 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 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									

FIGURE H.2.1
Dangerous Goods Functions Process Flowchart



H.2.2.3.2 Type of Training

The result of the TNA is the driver to decide the type of training that applies to achieve the performance criteria PC identified. However it is possible that regulatory requirements will provide details about the content needed for the program.

Given the complexity and variety of job functions, the more tasks an individual function has, the more in depth and variety of methods of delivery should be used.

In general terms the DGTWG and the IATA Framework favours the use of a blended approach when deciding about the types of training to incorporate in a program. The mix of types of training should be based on the proficiency level assigned to a particular task/activity in the TNA.

Common types of DG training currently being used are:

(a) Classroom instructor lead: this is the classical training delivered in a physical location common for all participants and guided by an instructor face to face. It requires the physical displacement of both the trainer and the learners. For dangerous goods a classroom no larger than 10 participants is recommended.

(b) Virtual classroom: this type or training allows participants to join the instructor remotely in a virtual location/classroom with help of a technology platform. It is intended to be interactive and must offer the opportunity of participation from the learners in the form or chats, polls, screen sharing, etc. There are many providers facilitating this technology for example Skype for business, WebEx, Adobe Connect, Saba Meeting, Blackboard, Zoom and many others. For dangerous goods a virtual classroom no larger than 10 participants is recommended.

Not to be confused with a webinar which is used mainly for a promotional or information distribution purpose and a bigger audience, 20 participants or many more.

(c) e-learning: also known as computer based training (CBT) is commonly used as a self-paced and individual approach. Traditionally the learner uses a device/tool (computer, tablet or mobile) at a distance or at a designated location and can potentially be asked to fulfil the training in a determined period of time or completely at their own pace. It usually incorporates assessments in the form of quizzes, exercises and may or may not include the final assessment.

(d) Distance learning (self-study): a self-paced and individual approach. Traditionally the learners use the course material (reading material, videos, presentations, notes) at their disposal which is usually provided and learn at their own pace. The learner may or may not be given opportunities to interact with a coach or instructor during the learning time. They may be also asked to fulfil the training in a determined period of time or completely at their own pace. Assessments are usually proctor interventions at a determined location.

(e) Applications (smart devices): these are programs designed to run in smart devices that can provide several ways to deliver the content such as videos, reading material, games, and polls. These tend to be highly interactive and engaging, providing immediate feedback and gratification.

(f) Virtual simulation: this is a way to recreate the real working environment in a virtual simulation. Especially useful when the real environment is not available or has access restrictions for non-fully trained personnel. It also provides the opportunity to introduce the work environment prior to actually work in one as well as to test potential situations that may not frequently occur.

(g) On-the Job training (OJT): it refers to actually performing the activity or function expected either supervised at an appropriate level, while doing the job or after the fact by analysing the results of the task at hand.

(h) Group discussions & tutorials: also known as case scenarios, learners are provided information and are asked to express their opinion or perform an activity to further discuss or comment in the form of feedback, or for more than one person to solve.

The list above is not exhaustive neither is any of the methods to be chosen in isolation, in fact many of the functions may work very well in combination and may support one another.

The following table illustrates the application of this step, this blended delivery method approach is an example for the function “personnel responsible for processing or accepting dangerous goods consignments”, note that this is based on the TNA results of Table H.2.2:

TASK/ MODULE	LEVEL OF PROFICIENCY	TYPE OF TRAINING
Understanding the basics of dangerous goods	Introductory	E-learning
Processing/ accepting cargo	Intermediate	Classroom instructor lead Virtual simulation
Collecting safety data	Basic	Group discussion & Tutorial Applications (scenarios)

Note:
Both the list above and the table provided are some examples of the different types of methods of delivery that can be used. The type selected can vary depending on the preferences and resources of the employers and/or training providers.

As provided in the example above, for each task the level of proficiency should be considered to decide which type of training is most appropriate, note that more than one type of training may be combined to achieve the PC.

It is important to keep in mind that the assessment at the end of the training should be appropriate for the level of proficiency and the type of training chosen.

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H.2.2.3.3 Obtaining and Maintaining Training Competency

In terms of the frequency and the specific circumstances, these may be determined by regulatory requirements whether international or national and by business and corporate needs.

Dangerous goods initial and recurrent training are required by the regulations:

- **Initial training** must be provided prior to a person performing their responsibilities related to the transport of cargo or managing passenger and baggage. Effectively and unless otherwise required by the national authorities, it refers to the first time a trainee receives dangerous goods instructions according to their function or a new function if gaps have been identified.
- **Recurrent training** must be provided within 24 months of previous training to ensure knowledge is current. However, if recurrent training is completed within the final 3 months of validity of previous training, the period of validity extends from the month on which the recurrent training was completed until 24 months from the expiry month of that previous training.

  Note:
  An example would be the following: If recurrent training is required by the end of May 2020, then any training occurring between March 2020 and end of May 2020 will result in a new recurrent training date of May 2022 ***(see DGR H.1.5.3.1).***

However there are situations in which there are irregularities in the job continuity of an employee. In this case, an intervention is needed to prove the competency of the employee and any potential gaps to be covered before restarting their job function. The following table is a proposal of actions to be taken into consideration:

Period of Absence	Suggested action
Up to 3 months	Provide the employee with regulatory or business requirements changes or updates and ensure understanding of these changes.
Between 3 and 12 months	Undergo one practical assessment for example “on the job session” or simulation. The employer must provide a brief observation report for the employee with any identified gaps to be filled and with information to be complemented in order to reach the currently required competency and proficiency level again.
More than 1 year	Recurrent training program

When choosing the method of delivery the type of assessment must be considered. The assessment plan must be fit for purpose considering the method used to deliver the knowledge and practice the skill. Ultimately the assessment must be able to demonstrate that the employee can competently perform their job, and that the objectives of the training program have been achieved.

In determining the assessment it is important to take into account what resources exist to achieve these results or what resources need to be found and fixed to accomplish the desired result. The next section of these guidelines will cover assessment in more details.

H.2.2.4 Trainee/Employee Assessment

A key part to the overall training program is the assessment plan. A training program without a solid, defined assessment plan could be ineffective and costly to an organization.

A well-defined and constructed assessment plan allows:

- For the employer to prove the level of competency of their employees and justify it for regulatory purposes, operational and technical requirements.
- For the instructor to have a status of the knowledge transfer and the skills application of the learners.
- For the employee to gain the confidence of their competency and to focus on the areas of knowledge that may require reinforcement and the skills that must be further developed.

In basic terms, the assessment plan describes how competency is measured.

CBTA encourages assessment throughout the learning cycle. Instead of an assessment at the end of the training, assessments should be included throughout a training event or class. This concept allows for ongoing “checks” and confirmation that learning is occurring. This approach provides the trainer the inputs to adjust or review the training plan to fit the competencies as needed. It provides the learner instant feedback and confirmation that learning is occurring. In CBTA, assessment of the learner’s progress continues until they are competent to perform the function. Traditional assessment methods that wait until the end of the learning event are too late in the learning process.

Assessments can be accomplished in many ways and can be administered in a variety of different formats. CBTA encourages the use of different types of assessment, as each learner is different and learns in different ways. The key is to accurately determine if the transfer of knowledge was completed and the competency has been achieved by the learner.

Common examples are:

- Written or online test
- Oral test
- Observation of task
- Practice questions or “group answered” questions
- Simulated exercises

Programme designers or instructors may choose one or a combination of methods to complete their learning assessments. It is important to have an assessment plan that appropriately outlines what the employee needs to achieve and accomplish with the training according to the TNA performance criteria determined.

An Assessment Plan should be established by the employer even if the employer is not the one providing the training. If a third-party training provider is delivering the training, the employer must have a plan to assess the learner to validate the proper level of competency and proficiency has been achieved. Any assessments done by the third-party can, and should be included, but it's up to the employer to determine how they measure the effectiveness of the training and competency of the learner.

An assessment plan should start by determining major key performance indicators which will measure if the task is satisfactorily achieved. Table H.2.2 can be followed when deciding what to measure against. The table below represents an example of an assessment plan. Note that the assessment type should be appropriate for each task, the core activities and the KPI established to measure the proficiency. This table offers an example based on the function: "Personnel responsible for processing or accepting dangerous goods consignments".

TASK/ MODULE	KPI (Key Performance Indicator)	ASSESSMENT TYPE
0 - Understanding the basics of dangerous goods	Able to identify different hidden dangerous goods and take the correct actions in emergency circumstance	Quizzes and task observation
3 - Processing/ accepting cargo	100% Able to accept/reject accurately "x" (where x is an number) of shipments containing dangerous goods independently	a. Simulation including documentation (AWB, DGD, Approval) and packaging by fulfilling the complete checklist.
		b. Job shadowing for 2 weeks with peer reports.
7 - Collecting safety data	90% accuracy on actioning the correct emergency response procedure in "x" (where x is an number) dangerous goods incident scenarios	Group discussions and presentation.

The next step is to establish the interim assessments that allow the trainee to achieve successfully the above described major KPIs, these again must be appropriate to the method of delivery.

To best explain and provide guidance on establishing interim assessments, we will use the example in the TNA section for the function: processing or accepting dangerous goods consignments, where one of the tasks is: 3–Processing/accepting cargo. Refer to the task list chart below:

Function: Processing or accepting dangerous goods consignments			
3	Processing/accepting cargo		
	3.1	Review documentation	
		3.1.1	Verify dangerous goods transport document
		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 package 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
	3.4	Process/accept cargo other than dangerous goods	
		3.4.1	Check documentation for indications of undeclared dangerous goods
		3.4.2	Check packages for indications of undeclared dangerous goods

An employee accepting cargo uses a checklist tool to process the package. A checklist typically contains different sections that group questions by topic; such as Documentation, Package Marks, Package Labels, etc.

During a typical training course, each question of the checklist is reviewed and explained in detail. After each "group" of questions, an interim assessment can occur. For example, after reviewing the group of questions pertaining to the package, learners are shown an example package(s) and they must audit the package and answer a group of questions pertaining to Marks, Labels, Package Type, etc., (see activity 3.2 in the table above). After answering the small group of questions for one or more packages, the answers are reviewed in the classroom or in the computer-based environment. The instructor or computer-based tool would then provide feedback to the learners regarding the answers. Although formal scoring may not be recorded, the instructor (or computer-based tool) review of this exercise still assesses the learner.

Continuing to use the processing/accepting cargo example, an interim assessment could easily be done after each activity 3.1, 3.2, 3.3, etc. and then a comprehensive assessment would be done on the entire processing/accepting cargo task.

H.2.2.5 Development of the Training Program

Editorial Note:
The content of this section is currently under development.

H.2.2.6 Trainer/Instructor Qualifications and Competencies

When an employer or a training organization decides on the person transmitting and accompanying the acquisition of the knowledge and developing of skills two areas must be considered: the regulatory requirements and the desirable level of proficiency of the person(s) delivering the training program.

From the regulatory perspective the regulations on dangerous goods must be observed. These require, unless otherwise provided for by the appropriate national authority, that instructors of initial and recurrent dangerous goods training:

(a) must demonstrate or be assessed as competent in instruction and in the function(s) that they will instruct prior to delivering such dangerous goods training;

(b) instructors delivering initial and recurrent dangerous goods training must at least every 24 months deliver such a course, or in the absence of this attend recurrent training;

(c) instructors must receive and understand updates to dangerous goods information and be made familiar with those changes by attending training or other means on an annual basis or as the Regulations are modified,

(d) organisations must ensure that the instructor receives updates to the Regulations and training material any time there are changes in the regulations or at least on an annual basis with the issuance of each edition of the DGR.

For a desirable level of proficiency it is strongly recommended that in addition to the requirements listed above (see DGR H.1.5.6), the instructor of dangerous goods courses should have as a minimum the following qualifications:

(e) instructors should demonstrate “advance” proficiency level related to the functions they are dealing with according to Table 2.1–Level of Proficiency in Terms of Competency Elements;

(f) where applicable, an instructor must also have current knowledge of local State civil aviation dangerous goods regulations, and proof of approval as dangerous goods instructor by the State of the operator if required.

(g) it is recommended that instructors have three (3) years working knowledge and experience in dangerous goods and safety operations or experience in cargo operations, including performing the function they are training on;

(h) an alternative to this working experience is a dedicated training program for instructors, which would supplement the requirements. Proof from the employer that the instructor has undergone such a program, or a program approved by the State of the operator is required;

(i) instructors should also undertake a “hands-on”/“on the job” experience program (i.e. job shadowing) in a variety of functions requiring dangerous goods training. Undergoing this practical activity at least every 2 to 3 year is highly recommended. This is particularly important if the item above applies, but even with experience from time to time it is best if instructors spend time in the operation to observe the trainee behavior in the job place.

New instructors of dangerous goods, where possible, should design and co-facilitate dangerous goods courses together with an established training designer/instructor.

In this particular case and in addition to soft skills courses required, the approach known as “oil” (Observe. Interact. Lead) is a very effective way of building instructional competency:

(a) Observe: attend course (intended to hold) as observer;

(b) Interact: by preparing a course and co-facilitate together with an established training designer/instructor; and

(c) Lead: individually take on the delivery of a full course and ideally lead or establish a full training program.

For instructors feedback is recommended to measure their performance using for example checklists, (i.e. Experienced instructor sits-in on 1-2 courses where new instructor instructing alone), capturing the information helps to provide feedback on performance which then should lead to recommendations to implement changes.

When the employer or the training organization uses other methods of delivery without an instructor leading it, such as e-learning or distance learning it is equally important to consider the competency of such methods in the same two areas: the regulatory requirements and the desirable level of proficiency of the chosen method.

In practical terms if needing to evaluate a non-instructor lead option it is highly recommended:

1. From the regulatory perspective the regulations on dangerous goods must be observed, and the method must be approved or recognized by the appropriate national authority of the State in which the trainee's work place is located.

2. Consider all the above requirements for the content developers and those individuals involved in the development of the tools.

3. Satisfactory answers to the following considerations are important: is there a clearly defined process for the design and development of the training? Is the provider of the method well recognized by the local stakeholders?

4. Establishing a service level agreement in terms of evaluation of the program and content update is a key consideration.

It is important to mention that IATA strongly recommends the use of a blended approach for dangerous goods training programs. This means that using a unique method of delivery like face to face classic classroom delivery, e-learning, distance learning and others in iso-

lation is not a good CBTA example. It will not be considered as a whole training program but instead as a portion of a program.

H.2.2.7 Training and Assessment Records

Training records are necessary for the following stakeholders:

(a) **employee:** to enable proof of acquired competency in certain functions and their respective tasks and therefore support job mobility and avoid unnecessary training duplication;

(b) **employer:** to manage work force and ensure employees are competent to perform the tasks they are required in a specific function; it can be used to make critical operational decisions for the organization based on the skill set available;

(c) **auditors/Inspectors:** to inspect that the employee is competent to perform the job function; and

(d) **training providers:** to provide proof that training has been followed and assessment has been completed.

The assessment records serve as formal information of several aspects important to all the parties mentioned above:

- when training was provided
- who attended the training
- training provider
- most recent training session
- when there was an assessment
- to prove which tasks are covered by the training/ assessment
- achieved proficiency level

In a CBTA approach it is possible to separate the training from the assessment, for example an employer can make use of a training provider for the instruction but perform the assessment internally. Therefore it is important that the training records are clear on what is being covered.

The following is the minimum data to be kept in the training records:

(a) Name of employee/learner

(b) Unique identifier of the employee (if applicable)

(c) Function(s) and/or tasks from the task list that have been covered by the training program

(d) Month of completion (training and assessment if done in different dates)

(e) Validity

(f) Type of training (see H.2.2.3.2)

(g) Type of assessment (see H.2.2.4)

(h) Training provider name and address

The following is also recommendable data that should be kept in a training record or trainees's files to be provided upon request:

(a) Name of the instructor (if applicable) or training provider

(b) Unique facilitator identifier (if applicable)

(c) Unique course/session identifier

(d) Employer (optional, normally used when the employer provides their own training programs)

(e) Location (if applicable)

(f) Language (optional)

(g) Task list (TNA) and proficiency level that were assessed

(h) Competency level achieved (this could be expressed in terms of proficiency level as explained under Table H.2.1 “Level of Proficiency in Terms of Competency Elements”

Training records must be kept in a secure manner by training providers and employers for a minimum of 36 months. They should be kept digitally and in such a manner that data can be easily assessed and reports easily generated.

Training records must be made available upon request to the participant or appropriate national authority. However when providing/reproducing training records, privacy law requirements must be considered, therefore certain information fields should not be shown (e.g. facilitator name) and treated with the appropriate confidentiality standards.

H.2.2.8 Evaluation of Training Program Effectiveness

There are three main purposes for evaluating training program effectiveness:

(a) Improve training program – Continuous improvement is desirable in any area, but in the context of Dangerous Goods Training programs is particularly relevant, since training is not one single event, but repeats throughout the trainee’s career. It is expected that competences are maintained at a minimum while accompanying regulatory updates and evolutions. Therefore, improving the training program brings benefits not only for future participants, but also improves the experience of those already following it.

(b) Confirm training effectiveness - Prove that we are indeed training the right competencies and at the right level of proficiency, in other words that the program meats the expectations of the employer and the employee. Under H.2.2.4 - "Trainee/Employer Assessment" we have addressed the needs and methods to evaluate a specific trainee. However, if the training is not being effective, unexpected negative results can be due to an issue in the training program, rather than individual differences.

(c) Provide evidence of the added value – Training program evaluation helps to explain how training is supporting the business. Considering the investment necessary in training, a link should be made between the resources and costs involved versus the actual added value. It must justify how were specific issues solved and further avoided, it must demonstrate shared best practices, new business implemented, etc. Additionally, since business evolves, the training needs assessment should not be a one-time event, but reviewed systematically to ensure that employers keep providing the right training for the current business and/or prepare for potential business growth.

In this context, the evaluation of the training program, benefits:

— the training providers by allowing them to offer products of higher quality and adjusted to the business needs;

— the employer by providing assurance that the training program is delivering the expected–competent work force–and that is linked to the business needs (adds value);

— the employee by taking into consideration their experience and addressing their real/on the job needs;

— the appropriate national authority by providing assurance that the training needs are in line with the regulations and the employer needs, which is a basic principle of CBTA.

Responsibility of Training Program Evaluation

In order to fulfill the above mentioned objectives, both the employer and training providers should conduct Training Program Assessments. When these are one and the same organization (in-house training), the responsibility should lie with the Training Program Designer and all three purposes of training program evaluation can be pursued. This is also the situation that allows for a largest variety of evaluation tools and also makes it easier to apply to all four competency factors.

If the training is provided by a third party, then the training provider should use the training contract to clearly describe the objectives that must be measured against. Third party training providers should focus on purposes (a) and (b) of training program evaluation. Training providers have at their disposition a number of classical tools for achieving this (e.g. surveys, interviews with Instructors), but under CBTA approach a much closer dialogue should be built with the employer in order to ensure that the expected service is being effectively delivered. This supports employers benefiting of their services to achieve purpose (c) of the evaluation. This dialogue output should be included in the training contract; the results measured against it and the tools used will largely depend on this.

Even if training is provided externally, it is still in the best interest of the employer to evaluate the program effectiveness, but focusing mainly on point number (b) and (c).

Examples: Training provider is contracted to train and assess the knowledge factor of acceptance checks. But the skills and attitude part training and assessment are the responsibility of the employer, then the training program knowledge evaluation should sit with the training provider, and the employer should cover all the four competence factors.

Examples of possible tools for training program assessment:

Training program evaluation can sound like a daunting enterprise. However, a number of different tools with different levels of sophistication can be used, depending on the type of organization (employer, training provider, etc.) and size. Below are a few evaluation tools and use examples of how they can be used in this context:

1. **Survey/Evaluation forms–**these are the easiest tools to use and therefore can be used by any type of organization. Post-training surveys should be directed to both trainers and trainee's alike. For trainees, questions like: "Was the training relevant to your job?", or "Was the training level of difficulty adequate?", "Was the material interesting and engaging?", "Was the trainer knowledgeable and helpful?" can be used to determine the perceived level of relevancy and adequacy of the training program.

   For trainers, questions like: "Were the training objectives clear?", "Were you aware of the training contract?", "Was the material helpful and adequate for the training goals?", "Was there sufficient variety of methods used to make the training engaging?", "Did trainees follow easily and without struggling?".

   The issue with many of these evaluation forms is that many people don't take the time to answer it or tend to provide overly positive answers. Training programs evaluations should have this in consideration and 1) ensure that surveys are anonymous and 2) the necessary attention is provided to lower results, even when these are provided by small numbers of respondents. Even if the surveys should be anonymous by default, a question can be included to ask if the person is willing to provide contact details for further information.

   Another variation that trainees might prefer is the "before and after quiz". Trainees might be more willing to participate in a quiz at the beginning of the training module/session and then repeat it at the end. Although this quiz can be used to measure individual progress, it can focus on the actual effectiveness of the training, particularly when applied to Attitude : Did changes occur due to training?

   Example 1: if trainees respond that the content is not relevant for the trainee's job, then this should trigger a review of the training needs assessment versus training content. Extra content might be justified from a cost/benefits point of view, but training program designer and evaluator must be aware of the impact.

   Example 2: if trainees respond before training they would not know how to react to a DG label, and if after training they respond: "I would call my DG colleague", then we can conclude that not only those individuals reached the training goals, but also the training program is being effective.

2. **Interviews–**these can be complementary to the above surveys/forms and provide a deeper insight. For example, when a specific area is showing lower results, a number of calls/specific emails can be set in order to request more information to both trainees and trainers alike. Interviews are a good way to receive feedback from trainers, since they have a better overview on what is working well and/or the needs improvement in the training program because they usually receive direct feedback from the trainees and have a better overview on the wider audience. Training providers should also consider arranging interviews with the Employers, specifically the direct managers of the people who underwent training.

Example 1: if some trainees respond that the level of difficulty is too high, then some participants can be chosen to be called and asked them: which parts did they struggle with? How to better supported them?, and how they expect this support to impact on their job?

Example 2: if a trainer reports difficulties during the training, then it is useful to understand if the materials are not sufficient, if there should be more time, more repetition or a different method may work better.

3. **Training Assessment results and analysis–**As mentioned before, if a less than good result is obtained by one individual, this is probably due to that individuals particular situation. However, training assessment results should be analysed for trends on what particularly works well and what can be an indicator that the training objectives, materials or methods are not meeting the actual objectives. Training assessment results should therefore be bundled and analysed, preferably on the same modular way that the training is designed.

   Example 1: if a standard knowledge classical test shows that a relevant percentage of trainees fail to answer a particular question, this must trigger a review of the training design on that specific area.

   Example 2: If on the job observations shows that employees struggle with a task or an activity, or recurrent questions are asked to colleagues on how to deal with a specific situation, it should be capture in the observation checklists and analysed if this is necessary to be covered by the training program or to be tackled differently.

4. **Incident trends–**unlike the previous 3 tools, this tool is only available for employers (not for training providers). However, we find this a useful source of information for the training program improvement. Implementing a Safety Management System implies that an organization is able to understand what was the root cause of incidents and correct both process, procedures and training thereof. Incident analysis determines if the failures were due to process issues, procedures gaps, willingly ignorance of processes and procedures, lack of competence (knowledge, skills, information), etc. If the conclusion is lack of competence, then this information must be actioned to the Training Designer and Training Program evaluator, so that the necessary adjustments can be conducted.

5. **On the job Observations–**although on the job observations have been mentioned mainly from a perspective of trainee assessment, they can also be used to evaluate the training program. This is desirable after implementation of a new training program and at repeated intervals. Does the training program design match the goals, i.e. is the TNA still holding true? These observations should not focus on the individual, but on the program design and TNA. Preferably by observing teams working. On the job observations also provide an opportunity for interviews (both open questions and directive): aiming to hear the team's point of view in terms of training requirements and assessment.

The training program assessment should not limit itself to one of the competency factors, instead it should covers all four levels: Knowledge; Skills; Attitudes; Experience.

Knowledge

- Specific learning objectives: what is the percentage of passing/failure rate in post training evaluations? Analysis of the knowledge gap, i.e. the expected knowledge to be obtained for a particular level of proficiency and the knowledge demonstrated by the individual performing the job, is this difference an individual gap or a training program gap (e.g. evaluation contains several questions on lithium battery shipment preparation, but a significant percentage of students is unable to correctly answer these can demonstrate that training is not focusing enough or effectively on that topic).

  Possible tool: Training Assessments Results Analysis

- How participants react to the training. Do they find the training engaging and relevant to their job function? It is important to measure reactions as it helps to understand how well the training is received by the participants.

  Possible tools: Surveys and Interviews

- Is the knowledge that is expected matching the job function description? (e.g. was there a comparison made between the function analysis and the knowledge components in the training program?)

  Possible tools: Training Assessments Results Analysis, Incident Analysis and "On the Job" observations.

- Is the training program built in such a way that allows further progression in the level of knowledge? Is there a differentiation between the mastery levels? (e.g. the same training program can have different level of exercises and allow for students to choose themselves, within an adequate range for their function)

  Possible tools: Surveys and Interviews

Skills. Evaluating the Training Program in the area of Skills, will allow to verify if:

- Does the training program allow for increased autonomous application of the knowledge?
- Are trainees able to transfer the knowledge to real life situations?
- How much has their skill increased?

Possible tools: before and after quizzes, interviews, Training Assessments Results Analysis if these are conducted on a practical manner rather than on a classical test method.

Attitude

- Does the training (either classic, blended, or on the job) focus on expected attitudes, in particular on how to react/what to do in exceptional situations (e.g. damaged shipments; unsure on how to respond to a particular difficult situation or shipment; to whom to reach out to in case of help needed)

  Possible tools: Incidents analysis, interviews to employers/direct managers; "On the Job" observations.

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Experience

- Performance evaluations of employees should focus on the aspect of competency to perform the job and provide feedback to the training developers.
- Is the training program supporting the further development of the employees, if necessary or desirable?

  Possible tools: Interviews to employers/direct managers and trainers.

H.2.2.9 Examples of TNA for Well Established Functions

This section provides examples of well established functions in the cargo and passengers flow where dangerous goods training is required. The content of this section is to provide guidance by: describing the function, providing the recommended requirements in terms of tasks, activities and performance criteria as well as the level of proficiency expected for these functions to be safely performed.

The examples in this section and the Table H.2.2 may be used for designing training programmes. However, the extracted TNA results and level of proficiency here provided are recommended but should not be considered as mandatory. An individual TNA must be conducted by employers or their training providers to determine wether additional training and assessment may be required for personnel assigned to additional responsibilities and less training and assessment may be required for personnel assigned to less responsibilities to those presented in these lists.

Ultimately the employer is responsible for ensuring employees are competent to perform the functions they are assigned to and must therefore ensure that training programmes are designed to accomplish this. Dangerous goods training programmes are subject to appropriate national authority approval in accordance with national regulations, policies and procedures.

H.2.2.9.1 Function: PERSONNEL RESPONSIBLE FOR PREPARING DANGEROUS GOODS CONSIGNMENTS

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. Personnel would need to have relevant knowledge to competently perform these functions. The Table H.2.2 has been used to define the tasks that personnel responsible for preparation of dangerous goods consignments typically perform and for which training and assessment would therefore be required:

Function: Personnel preparing dangerous goods consignments for transport (Personnel classifying dangerous goods for transport is provided simultaneously)				Classifying dangerous goods	Preparing dangerous goods shipment
0	Understanding the basics of dangerous goods			★	★
	0.1	Recognizing dangerous goods		★	★
		0.1.1	Understand the definition		
		0.1.2	Recognize the legal framework (global, local, training legal requirements)		
		0.1.3	Identify the application scope		
	0.2	Identifying the general limitations		★	★
		0.2.1	Develop a sense of potential hidden dangerous goods		
		0.2.2	Recognize the difference between hidden vs undeclared dangerous goods		
		0.2.3	Familiarized with passenger provisions vs cargo provisions in various situation (examples)		
	0.3	Positioning different roles and responsibilities		★	★
		0.3.1	Clarify the individual and collective role of the supply chain stakeholders		
		0.3.2	Understand the passengers responsibilities		
		0.3.3	Recognized the role and impact of State & operators variations		
	0.4	Understanding the criticality of classification & packaging		★	★
		0.4.1	Differentiate between hazard vs risk		
		0.4.2	Identify the general information about classes, divisions		
		0.4.3	Understand general principles of Packing Groups		
		0.4.4	Consider multiple hazards		
	0.5	Interpreting the hazard communication		★	★
		0.5.1	Recognize the different marking basic requirements		
		0.5.2	Recognize the variety of labeling and their meaning		
		0.5.3	Identify the required documentation for DG shipments and their role in the process.		
	0.6	Familiarizing with basic Emergency Response		★	★
		0.6.1	Create awareness about general emergency procedures		
		0.6.2	Recognize country specific emergency procedures including exemptions and approvals		
		0.6.3	Apply the employer emergency response requirements		

Function: Personnel preparing dangerous goods consignments for transport (Personnel classifying dangerous goods for transport is provided simultaneously)				Classifying dangerous goods	Preparing dangerous goods shipment
1	Classifying dangerous goods			★★★	★★
	1.1	Evaluate substance or article against 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	Select appropriate packaging materials (absorbent, cushioning, etc.)		
		2.2.3	Assemble package		
		2.2.4	Comply with the packaging test report when UN specification packaging is required		
	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 dangerous goods transport document		
		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 as required		
3	Processing/accepting cargo				★
	3.1	Review documentation			★
		3.1.1	Verify dangerous goods transport document		
		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 package 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		N/A
		3.3.3	Retain documents as required		N/A
	3.4	Process/accept cargo other than dangerous goods			N/A
		3.4.1	Check documentation for indications of undeclared dangerous goods		
		3.4.2	Check packages for indications of undeclared dangerous goods		
7	Collecting safety data			★	★★
	7.1	Report dangerous goods accidents		★	★★
	7.2	Report dangerous goods incidents		★	★★
	7.3	Report undeclared/mis-declared dangerous goods		N/A	N/A
	7.4	Report dangerous goods occurrences		★	★★

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H.2.2.9.2 Function: PERSONNEL RESPONSIBLE FOR PROCESSING OR ACCEPTING GOODS PRESENTED AS GENERAL CARGO

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. The Table H.2.2 has been used to determine the competencies needed. They may need additional knowledge and be capable of performing at a more advanced skill level depending on the actual responsibilities assigned. The following are tasks aimed at preventing undeclared dangerous goods from being accepted into air transport and loaded on aircraft that such personnel would typically perform and for which training and assessment would therefore be required.

Function: Personnel responsible for precessing or accepting goods presented as general cargo				Processing/ accepting cargo
0	Understanding the basics of dangerous goods			★
	0.1	Recognizing dangerous goods		★
		0.1.1	Understand the definition	
		0.1.2	Recognize the legal framework (global, local, training legal requirements)	
		0.1.3	Identify the application scope	
	0.2	Identifying the general limitations		★
		0.2.1	Develop a sense of potential hidden dangerous goods	
		0.2.2	Recognize the difference between hidden vs undeclared dangerous goods	
		0.2.3	Familiarized with passenger provisions vs cargo provisions in various situation (examples)	
	0.3	Positioning different roles and responsibilities		★
		0.3.1	Clarify the individual and collective role of the supply chain stakeholders	
		0.3.2	Understand the passengers responsibilities	
		0.3.3	Recognized the role and impact of State & operators variations	
	0.4	Understanding the criticality of classification & packaging		★
		0.4.1	Differentiate between hazard vs risk	
		0.4.2	Identify the general information about classes, divisions	
		0.4.3	Understand general principles of Packing Groups	
		0.4.4	Consider multiple hazards	
	0.5	Interpreting the hazard communication		★
		0.5.1	Recognize the different marking basic requirements	
		0.5.2	Recognize the variety of labeling and their meaning	
		0.5.3	Identify the required documentation for DG shipments and their role in the process.	
	0.6	Familiarizing with basic Emergency Response		★
		0.6.1	Create awareness about general emergency procedures	
		0.6.2	Recognize country specific emergency procedures including exemptions and approvals	
		0.6.3	Apply the employer emergency response requirements	
3	Processing/accepting cargo			★★★
	3.4	Process/accept cargo other than dangerous goods		★★★
		3.4.1	Check documentation for indications of undeclared dangerous goods	
		3.4.2	Check packages for indications of undeclared dangerous goods	
7	Collecting safety data			★★
	7.1	Report dangerous goods accidents		N/A
	7.2	Report dangerous goods incidents		★★
	7.3	Report undeclared/mis-declared dangerous goods		★★
	7.4	Report dangerous goods occurrences		N/A

H.2.2.9.3 Function: PERSONNEL RESPONSIBLE FOR PROCESSING OR ACCEPTING DANGEROUS GOODS CONSIGNMENTS

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 fit 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 Table H.2.2 has been used to determine the competencies needed. The extract below is showing only the tasks, activities and PC relevant to this function.

Personnel performing this function may need additional knowledge and be capable of performing at a more advanced skill level depending on the actual responsibilities assigned. The benchmark responsibilities have training and assessment requirements as follows:

Function: Personnel responsible for precessing or accepting dangerous goods consignments				Processing/ accepting cargo
0	Understanding the basics of dangerous goods			
	0.1	Recognizing dangerous goods		★
		0.1.1	Understand the definition	
		0.1.2	Recognize the legal framework (global, local, training legal requirements)	
		0.1.3	Identify the application scope	
	0.2	Identifying the general limitations		★
		0.2.1	Develop a sense of potential hidden dangerous goods	
		0.2.2	Recognize the difference between hidden vs undeclared dangerous goods	
		0.2.3	Familiarized with passenger provisions vs cargo provisions in various situation (examples)	
	0.3	Positioning different roles and responsibilities		★
		0.3.1	Clarify the individual and collective role of the supply chain stakeholders	
		0.3.2	Understand the passengers responsibilities	
		0.3.3	Recognized the role and impact of State & operators variations	
	0.4	Understanding the criticality of classification & packaging		★
		0.4.1	Differentiate between hazard vs risk	
		0.4.2	Identify the general information about classes, divisions	
		0.4.3	Understand general principles of Packing Groups	
		0.4.4	Consider multiple hazards	
	0.5	Interpreting the hazard communication		★
		0.5.1	Recognize the different marking basic requirements	
		0.5.2	Recognize the variety of labeling and their meaning	
		0.5.3	Identify the required documentation for DG shipments and their role in the process.	
	0.6	Familiarizing with basic Emergency Response		★
		0.6.1	Create awareness about general emergency procedures	
		0.6.2	Recognize country specific emergency procedures including exemptions and approvals	
		0.6.3	Apply the employer emergency response requirements	

Function: Personnel responsible for precessing or accepting dangerous goods consignments				Processing/ accepting cargo
3	Processing/accepting cargo			
	3.1	Review documentation		★★★
		3.1.1	Verify dangerous goods transport document	
		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 package 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	
	3.4	Process/accept cargo other than dangerous goods		N/A
		3.4.1	Check documentation for indications of undeclared dangerous goods	
		3.4.2	Check packages for indications of undeclared dangerous goods	
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		★★

H.2.2.9.4 Function: PERSONNEL RESPONSIBLE FOR HANDLING CARGO IN A WAREHOUSE, LOADING AND UNLOADING UNIT LOAD DEVICES AND LOADING AND UNLOADING AIRCRAFT CARGO COMPARTMENTS

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:

Function: Personnel responsible for handling cargo in a warehouse, loading and unloading ULD and loading and unloading aircraft cargo compartments.				Managing cargo preloading
0	Understanding the basics of dangerous goods			★
	0.1	Recognizing dangerous goods		★
		0.1.1	Understand the definition	
		0.1.2	Recognize the legal framework (global, local, training legal requirements)	
		0.1.3	Identify the application scope	

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Function: Personnel responsible for handling cargo in a warehouse, loading and unloading ULD and loading and unloading aircraft cargo compartments.				Managing cargo pre-loading
	0.2	Identifying the general limitations		★
		0.2.1	Develop a sense of potential hidden dangerous goods	
		0.2.2	Recognize the difference between hidden vs undeclared dangerous goods	
		0.2.3	Familiarized with passenger provisions vs cargo provisions in various situation (examples)	
	0.3	Positioning different roles and responsibilities		★
		0.3.1	Clarify the individual and collective role of the supply chain stakeholders	
		0.3.2	Understand the passengers responsibilities	
		0.3.3	Recognized the role and impact of State & operators variations	
	0.4	Understanding the criticality of classification & packaging		★
		0.4.1	Differentiate between hazard vs risk	
		0.4.2	Identify the general information about classes, divisions	
		0.4.3	Understand general principles of Packing Groups	
		0.4.4	Consider multiple hazards	
	0.5	Interpreting the hazard communication		★
		0.5.1	Recognize the different marking basic requirements	
		0.5.2	Recognize the variety of labeling and their meaning	
		0.5.3	Identify the required documentation for DG shipments and their role in the process.	
	0.6	Familiarizing with basic Emergency Response		★
		0.6.1	Create awareness about general emergency procedures	
		0.6.2	Recognize country specific emergency procedures including exemptions and approvals	
		0.6.3	Apply the employer emergency response requirements	
4	Managing cargo pre-loading			★★★
	4.1	Plan loading		
		4.1.1	Determine stowage requirements	
		4.1.2	Determine segregation, separation, aircraft/compartment limitations	
	4.2	Prepare load for aircraft		★★★
		4.2.1	Check packages for indications of undeclared dangerous goods	
		4.2.2	Check for damage and/or leakage	
		4.2.3	Apply stowage requirements (e.g. segregation, separation, orientation)	

Function: Personnel responsible for handling cargo in a warehouse, loading and unloading ULD and loading and unloading aircraft cargo compartments.				Managing cargo pre-loading
		4.2.4	Apply ULD tags when applicable	
		4.2.5	Transport cargo to aircraft	
	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	
6	Transporting cargo/baggage			
	6.1	Load aircraft		★★★
		6.1.1	Transport cargo/baggage to aircraft	
		6.1.2	Check packages for indications of undeclared dangerous goods	
		6.1.3	Check for damage and/or leakage	
		6.1.4	Apply stowage requirements (e.g. segregation, separation, orientation, securing and protecting from damage)	
		6.1.5	Verify that NOTOC reflects against aircraft load	
		6.1.6	Verify passenger baggage requirements	
		6.1.7	Inform pilot-in-command and flight operations officer/flight dispatcher	
	6.2	Manage dangerous goods pre and during flight		N/A
		6.2.1	Detect presence of dangerous goods not permitted in baggage	N/A
		6.2.2	Interpret NOTOC	N/A
		6.2.3	Apply procedures in the event of an emergency	N/A
		6.2.4	Inform flight operations officer/flight dispatcher/air traffic control in the event of an emergency	N/A
		6.2.5	Inform emergency services of the dangerous goods on board in the event of an emergency	N/A
	6.3	Unload aircraft		★★★
		6.3.1	Apply specific unloading considerations	
		6.3.2	Check packages for indications of 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		★★

H.2.2.9.5 Function: PERSONNEL RESPONSIBLE FOR ACCEPTING PASSENGER AND CREW BAGGAGE, MANAGING AIRCRAFT BOARDING AREAS AND OTHER TASKS INVOLVING DIRECT PASSENGER CONTACT AT AN AIRPORT

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:

Function: Personnel responsible for accepting passenger and crew baggage, managing aircraft boarding areas and other tasks involving direct passenger contact at an airport.				**Accepting passenger and crew baggage**
0	Understanding the basics of dangerous goods			★
	0.1	Recognizing dangerous goods		★
		0.1.1	Understand the definition	
		0.1.2	Recognize the legal framework (global, local, training legal requirements)	
		0.1.3	Identify the application scope	
	0.2	Identifying the general limitations		★
		0.2.1	Develop a sense of potential hidden dangerous goods	
		0.2.2	Recognize the difference between hidden vs undeclared dangerous goods	
		0.2.3	Familiarized with passenger provisions vs cargo provisions in various situation (examples)	
	0.3	Positioning different roles and responsibilities		★
		0.3.1	Clarify the individual and collective role of the supply chain stakeholders	
		0.3.2	Understand the passengers responsibilities	
		0.3.3	Recognized the role and impact of State & operators variations	
	0.4	Understanding the criticality of classification & packaging		★
		0.4.1	Differentiate between hazard vs risk	
		0.4.2	Identify the general information about classes, divisions	
		0.4.3	Understand general principles of Packing Groups	
		0.4.4	Consider multiple hazards	
	0.5	Interpreting the hazard communication		★
		0.5.1	Recognize the different marking basic requirements	
		0.5.2	Recognize the variety of labeling and their meaning	
		0.5.3	Identify the required documentation for DG shipments and their role in the process.	
	0.6	Familiarizing with basic Emergency Response		★
		0.6.1	Create awareness about general emergency procedures	
		0.6.2	Recognize country specific emergency procedures including exemptions and approvals	
		0.6.3	Apply the employer 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	
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		

H.2.2.9.6 Function: PERSONNEL RESPONSIBLE FOR THE PLANNING OF AIRCRAFT LOADING

The following are tasks that personnel responsible for planning of aircraft loading (passengers, baggage, mail and cargo) would typically perform and for which training and assessment would therefore be required:

Function: Personnel responsible for handling cargo in a warehouse, loading and unloading ULD and loading and unloading aircraft cargo compartments.				**Managing cargo preloading**
0	Understanding the basics of dangerous goods			★
	0.1	Recognizing dangerous goods		★
		0.1.1	Understand the definition	
		0.1.2	Recognize the legal framework (global, local, training legal requirements)	
		0.1.3	Identify the application scope	
	0.2	Identifying the general limitations		★
		0.2.1	Develop a sense of potential hidden dangerous goods	
		0.2.2	Recognize the difference between hidden vs undeclared dangerous goods	
		0.2.3	Familiarized with passenger provisions vs cargo provisions in various situation (examples)	
	0.3	Positioning different roles and responsibilities		★
		0.3.1	Clarify the individual and collective role of the supply chain stakeholders	
		0.3.2	Understand the passengers responsibilities	
		0.3.3	Recognized the role and impact of State & operators variations	

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Function: Personnel responsible for handling cargo in a warehouse, loading and unloading ULD and loading and unloading aircraft cargo compartments.				Managing cargo pre-loading
	0.4	Understanding the criticality of classification & packaging		★
		0.4.1	Differentiate between hazard vs risk	
		0.4.2	Identify the general information about classes, divisions	
		0.4.3	Understand general principles of Packing Groups	
		0.4.4	Consider multiple hazards	
	0.5	Interpreting the hazard communication		★
		0.5.1	Recognize the different marking basic requirements	
		0.5.2	Recognize the variety of labeling and their meaning	
		0.5.3	Identify the required documentation for DG shipments and their role in the process.	
	0.6	Familiarizing with basic Emergency Response		★
		0.6.1	Create awareness about general emergency procedures	
		0.6.2	Recognize country specific emergency procedures including exemptions and approvals	
		0.6.3	Apply the employer emergency response requirements	
4	Managing cargo pre-loading			★★★
	4.1	Plan loading		★★★
		4.1.1	Determine stowage requirements	
		4.1.2	Determine segregation, separation, aircraft/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	

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H.2.2.9.7 Function: FLIGHT CREW

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

Function: Flight Crew personnel				Managing cargo pre-loading
0	Understanding the basics of dangerous goods			★
	0.1	Recognizing dangerous goods		★
		0.1.1	Understand the definition	
		0.1.2	Recognize the legal framework (global, local, training legal requirements)	
		0.1.3	Identify the application scope	
	0.2	Identifying the general limitations		★
		0.2.1	Develop a sense of potential hidden dangerous goods	
		0.2.2	Recognize the difference between hidden vs undeclared dangerous goods	
		0.2.3	Familiarized with passenger provisions vs cargo provisions in various situation (examples)	
	0.3	Positioning different roles and responsibilities		★
		0.3.1	Clarify the individual and collective role of the supply chain stakeholders	
		0.3.2	Understand the passengers responsibilities	
		0.3.3	Recognized the role and impact of State & operators variations	
	0.4	Understanding the criticality of classification & packaging		★
		0.4.1	Differentiate between hazard vs risk	
		0.4.2	Identify the general information about classes, divisions	
		0.4.3	Understand general principles of Packing Groups	
		0.4.4	Consider multiple hazards	
	0.5	Interpreting the hazard communication		★
		0.5.1	Recognize the different marking basic requirements	
		0.5.2	Recognize the variety of labeling and their meaning	
		0.5.3	Identify the required documentation for DG shipments and their role in the process.	
	0.6	Familiarizing with basic Emergency Response		★
		0.6.1	Create awareness about general emergency procedures	
		0.6.2	Recognize country specific emergency procedures including exemptions and approvals	
		0.6.3	Apply the employer emergency response requirements	
6	Transporting cargo/baggage			
	6.2	Manage dangerous goods pre and during flight		★★★
		6.2.1	Detect presence of 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 the event of an emergency	
		6.2.5	Inform emergency services of the dangerous goods on board 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		★★

H.2.2.9.8 Function: FLIGHT OPERATIONS OFFICERS AND FLIGHT DISPATCHERS

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

Function: Personnel responsible for flight operations and flight dispatchers				Managing cargo preloading
0	Understanding the basics of dangerous goods			★
	0.1	Recognizing dangerous goods		★
		0.1.1	Understand the definition	
		0.1.2	Recognize the legal framework (global, local, training legal requirements)	
		0.1.3	Identify the application scope	
	0.2	Identifying the general limitations		★
		0.2.1	Develop a sense of potential hidden dangerous goods	
		0.2.2	Recognize the difference between hidden vs undeclared dangerous goods	
		0.2.3	Familiarized with passenger provisions vs cargo provisions in various situation (examples)	
	0.3	Positioning different roles and responsibilities		★
		0.3.1	Clarify the individual and collective role of the supply chain stakeholders	
		0.3.2	Understand the passengers responsibilities	
		0.3.3	Recognized the role and impact of State & operators variations	
	0.4	Understanding the criticality of classification & packaging		★
		0.4.1	Differentiate between hazard vs risk	
		0.4.2	Identify the general information about classes, divisions	
		0.4.3	Understand general principles of Packing Groups	
		0.4.4	Consider multiple hazards	
	0.5	Interpreting the hazard communication		★
		0.5.1	Recognize the different marking basic requirements	
		0.5.2	Recognize the variety of labeling and their meaning	
		0.5.3	Identify the required documentation for DG shipments and their role in the process.	
	0.6	Familiarizing with basic Emergency Response		★
		0.6.1	Create awareness about general emergency procedures	
		0.6.2	Recognize country specific emergency procedures including exemptions and approvals	
		0.6.3	Apply the employer emergency response requirements	
6	Transporting cargo/baggage			
	6.2	Manage dangerous goods pre and during flight		★★★
		6.2.1	Detect presence of 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 the event of an emergency	
		6.2.5	Inform emergency services of the dangerous goods on board in the event of an emergency	

H.2.2.9.9 Function: CABIN CREW

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

Function: Cabin Crew				Transporting cargo/ baggage
0	Understanding the basics of dangerous goods			★
	0.1	Recognizing dangerous goods		★
		0.1.1	Understand the definition	
		0.1.2	Recognize the legal framework (global, local, training legal requirements)	
		0.1.3	Identify the application scope	
	0.2	Identifying the general limitations		★
		0.2.1	Develop a sense of potential hidden dangerous goods	
		0.2.2	Recognize the difference between hidden vs undeclared dangerous goods	
		0.2.3	Familiarized with passenger provisions vs cargo provisions in various situation (examples)	
	0.3	Positioning different roles and responsibilities		★
		0.3.1	Clarify the individual and collective role of the supply chain stakeholders	
		0.3.2	Understand the passengers responsibilities	
		0.3.3	Recognized the role and impact of State & operators variations	
	0.4	Understanding the criticality of classification & packaging		★
		0.4.1	Differentiate between hazard vs risk	
		0.4.2	Identify the general information about classes, divisions	
		0.4.3	Understand general principles of Packing Groups	
		0.4.4	Consider multiple hazards	
	0.5	Interpreting the hazard communication		★
		0.5.1	Recognize the different marking basic requirements	
		0.5.2	Recognize the variety of labeling and their meaning	

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Function: Cabin Crew				Transporting cargo/ baggage
		0.5.3	Identify the required documentation for DG shipments and their role in the process.	
	0.6	Familiarizing with basic Emergency Response		★
		0.6.1	Create awareness about general emergency procedures	
		0.6.2	Recognize country specific emergency procedures including exemptions and approvals	
		0.6.3	Apply the employer 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	Detect presence of 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		N/A
	7.2	Report dangerous goods incidents		★
	7.3	Report undeclared/mis-declared dangerous goods		★
	7.4	Report dangerous goods occurrences		N/A

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H.2.2.9.10 Function: PERSONNEL RESPONSIBLE FOR THE SCREENING OF PASSENGERS AND CREW AND THEIR BAGGAGE, CARGO AND MAIL

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:

Function: Personnel responsible for security screening (Passengers ans crew, baggage, cargo and mail)				Accepting passenger and crew baggage	Collecting safety data
0	Understanding the basics of dangerous goods			★	
	0.1	Recognizing dangerous goods		★	
		0.1.1	Understand the definition		
		0.1.2	Recognize the legal framework (global, local, training legal requirements)		
		0.1.3	Identify the application scope		
	0.2	Identifying the general limitations		★	
		0.2.1	Develop a sense of potential hidden dangerous goods		
		0.2.2	Recognize the difference between hidden vs undeclared dangerous goods		
		0.2.3	Familiarized with passenger provisions vs cargo provisions in various situation (examples)		
	0.3	Positioning different roles and responsibilities		★	
		0.3.1	Clarify the individual and collective role of the supply chain stakeholders		
		0.3.2	Understand the passengers responsibilities		
		0.3.3	Recognized the role and impact of State & operators variations		
	0.4	Understanding the criticality of classification & packaging		★	
		0.4.1	Differentiate between hazard vs risk		
		0.4.2	Identify the general information about classes, divisions		
		0.4.3	Understand general principles of Packing Groups		
		0.4.4	Consider multiple hazards		
	0.5	Interpreting the hazard communication		★	
		0.5.1	Recognize the different marking basic requirements		
		0.5.2	Recognize the variety of labeling and their meaning		
		0.5.3	Identify the required documentation for DG shipments and their role in the process.		
	0.6	Familiarizing with basic Emergency Response		★	
		0.6.1	Create awareness about general emergency procedures		
		0.6.2	Recognize country specific emergency procedures including exemptions and approvals		
		0.6.3	Apply the employer emergency response requirements		
3	Processing/accepting cargo			★★★	
	3.4	Process/accept cargo other than dangerous goods			
		3.4.1	Check documentation for indications of undeclared dangerous goods		
		3.4.2	Check packages for indications of 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		

Function: Personnel responsible for security screening (Passengers ans crew, baggage, cargo and mail)			Accepting passenger and crew baggage	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		