International Civil Aviation Organization

DGP-WG/14-WP/1
17/10/14

WORKING PAPER

DANGEROUS GOODS PANEL (DGP)
MEETING OF THE WORKING GROUP OF THE WHOLE

Rio de Janeiro, Brazil, 20 to 24 October 2014

Agenda Item 6: Resolution, where possible, of the non-recurrent work items identified by Air Navigation Commission or the Dangerous Goods Panel:
6.3: Development of competency-based training provisions for dangerous goods

COMPETENCY-BASED TRAINING FOR DANGEROUS GOODS PERSONNEL

(Presented by T. Muller)

SUMMARY

This working paper proposes the addition of new guidance material on competency-based training as an attachment to the Technical Instructions and invites the working group to review proposed amendments to Part 1;4 of the Technical Instruction which aim to align the training provisions with basic competency-based training principles. The proposed amendments to Part 1;4 include revisions to Tables 1-4 and 1-5 for the sake of alignment with the competency-based frameworks for dangerous goods personnel.

Action by the DGP-WG: Action by the DGP-WG is in paragraph 3.

1. INTRODUCTION

1.1 Competency-based training is training that is designed to allow trainees to demonstrate their ability to perform their job. The end product of competency-based training is competent personnel, and competent personnel promote a safe air transport system.

1.2 Competency-based training offers several benefits compared to traditional training, such as:

a) Competency-based training supports safety management systems (SMS). Within the SMS environment, dangerous goods personnel need to know their roles and responsibilities and must have the requisite competencies to perform their job functions.

b) Competency-based training facilitates development of effective dangerous goods training and reduces risks by designing training that is specific to the trainee's function and not just theoretical knowledge about dangerous goods.

c) Competency-based training supports “commensurate with responsibilities” principles. A person may perform several functions and that person’s training must focus on how to perform them competently.

Detailed information can be found in the proposed guidance material provided in Appendix A to this working paper.

2. COMPETENCY FRAMEWORKS

2.1 Dangerous goods personnel

2.2 The DGP Working Group on Training has developed one competency framework for all dangerous goods personnel. With the help of flowcharts, all the responsibilities of personnel involved in the transport of dangerous goods were identified.

2.3 The complete framework for personnel involved in transporting dangerous goods and flowcharts can be found in the attachment to the guidance material in Appendix A of this working paper.

2.4 Throughout the years, the training provisions in Part 1;4 of the Technical Instructions have evolved from training which is “commensurate with responsibilities” principles to being more category / job specific. Tables 1-4 and 1-5 currently focus on knowledge rather than functions. This means that the air transport system may have trained knowledgeable persons that may not know how to perform their jobs effectively. The DGP Working Group on Training therefore proposes that amendments to Part 1;4 be considered to clearly differentiate between knowledge from functions. Draft amendments to Table 1-4 are provided in Appendix C to this working paper as a basis for discussion. Based on comments receivedA new proposal, based on comments received, will be presented to DGP-WG/15.

2.5 State employees

2.6 The competency framework for State employees was the first framework developed by the working group and was kept separate from the framework for personnel involved in transporting dangerous goods. It was modified using the same methods as the framework for personnel involved in transporting dangerous goods. The State employee framework is provided in Appendix B to this working paper.

3. ACTION BY THE DGP-WG

3.1 The DGP-WG is invited to:

a) consider incorporating the guidance material on competency-based training for dangerous goods personnel provided in Appendix A to this working paper as a new attachment to the Technical Instructions; and

b) provide comments on the amendments to Part 1;4 provided in Appendix C to this working paper.

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APPENDIX A

PROPOSED GUIDANCE MATERIAL ON COMPETENCY BASED TRAINING FOR DANGEORUS GOODS PERSONNEL

COMPETENCY-BASED TRAINING FOR DANGEROUS GOODS PERSONNEL

The purpose of this guidance material is not to describe generic features of competency-based training but to explain how it applies to dangerous goods training. The Procedures for Air Navigation Services — Training *(PANS-TRG, Doc 9868) contains more detailed features of competency based training.*

1. INTRODUCTION

1.1 ICAO has recognized that the implementation of a competency-based approach for safety-critical functions is essential to ensure that enough qualified and competent personnel support the air transport system. This document provides guidance to Contracting States in implementing competency-based training and assessment for personnel involved in the transport of dangerous goods by air.

1.2 Competency-based training (CBT)

1.2.1 Conventional dangerous goods training is typically designed around the job title and is subject-matter driven (e.g. Table 1-4 in the 2013-2014 Edition of the Technical Instructions lists the subject matter relating to dangerous goods transport which various categories of personnel should be familiar). CBT is designed to ensure that trainees can perform the job and is function driven.

1.2.2 Competencies describe what a competent person's performance on the job should be. The *Procedures for Air Navigation Services — Training* (PANS-TRG, Doc 9868) defines competency as "a combination of skills, knowledge and attitudes required to perform a task to the prescribed standard". For more detailed information on generic features of competency based training, see Doc 9868.

1.2.3 A critical feature of CBT is the inclusion of a continuous evaluation process to ensure training is efficient and effective in order to provide the skills, knowledge and attitudes required to perform a task.

1.3 Competency-based provisions in ICAO

1.3.1 Competency-based approaches have been used to prepare professionals for a variety of domains besides aviation (e.g. medical education, the oil and gas industry, pharmaceutical industry, social work, teacher education).

1.3.2 In 2006, ICAO introduced the multi-crew pilot licence (MPL) in Annex 1 — *Personnel Licensing*. This was the first competency-based provision introduced in ICAO documents. It resulted from the work of the Flight Crew Licensing and Training Panel (FCLTP) whose goal was to develop provisions that would not put conventional pilot training methods out of compliance but would allow an alternative training path that made use of contemporary instructional methods. The FCLTP developed the first edition of the PANS-TRG to provide detailed procedures to assist States and the industry in implementing the MPL.

1.3.3 Since then, ICAO introduced several competency frameworks in its provisions related to the following functions:

a) framework for aircraft maintenance personnel (PANS-TRG, Doc 9868);

b) flight procedure designers (*The Quality Assurance Manual for Flight Procedure Design* (Doc 9906), Volume 2);

c) flight validation pilots (Doc 9906, Volume 6); and

d) designated medical examiners (*Manual of Civil Aviation Medicine* (Doc 8984)).

Work is also underway for the development of competency frameworks for air traffic controllers and air traffic safety electronics personnel (ATSEPs).

2. BENEFITS OF CBT TO THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR

2.1 Supports safety management systems (SMS)

2.1.1 Annexes 6, 18 and 19 require dangerous goods to be included in the operator's SMS. Other entities in the dangerous goods transport chain should be encouraged to implement a similar system. Relevant extracts from these Annexes are provided in Appendix C.

2.1.2 Implementing SMS requires that all personnel understand the safety philosophy and embrace a disciplined and standardized approach for SMS. Dangerous goods personnel need to know their roles and responsibilities within the safety management framework and have the requisite competencies to perform their job functions in the SMS environment. Therefore, the depth of training each person receives should be appropriate to the functions the person performs and will range from a familiarization level to expert-level for dangerous goods safety professionals. To ensure that dangerous goods personnel have the knowledge, skills and abilities to support SMS, training activities should follow the competency based model.

2.1.3 The "Swiss-Cheese" Model of accident causation (see paragraph 2.3 of the *Safety Management Manual (SMM)* (Doc 9859)) proposes that complex aviation systems are extremely well defended by layers of defences making single-point failures rarely consequential. The model illustrates that accidents involve successive breaches of multiple system defences and that all accidents include a combination of both active conditions (actions or inactions that have an immediate adverse effect) and latent conditions (conditions that exist in the aviation system well before a damaging outcome is experienced). Doc 9859 identifies training as one of the three main groups of defences in aviation and deficiencies in training as a latent condition. The importance of clearly-defined competency based training is essential for the design and delivery of training programmes aimed at developing qualified personnel better able to eliminate or mitigate risks related to the safe transport of dangerous goods by air.

2.2 Facilitates development of effective dangerous goods training and reduces risks

2.2.1 The application of CBT will benefit the safe transport of dangerous goods, which may reduce occurrences that could introduce risk to the aviation system. For example:

a) Currently the training requirement in the Technical Instructions is based on evidence that personnel have completed the dangerous goods course and successfully passed the test. This, however, does not guarantee that personnel can apply what was learned in the course while performing their functions. A CBT approach designs training that is specific to their functions and not just theoretical knowledge about dangerous goods.

b) According to the Technical Instructions, the acceptance of dangerous goods for air transport requires an operator to verify that the dangerous goods are properly prepared for transport. This verification is accomplished through a checklist process. This is to prevent dangerous goods not properly prepared from being transported on the aircraft. However, if training has not adequately prepared personnel to complete this process, risks to the aircraft and its occupants may be introduced if an improperly prepared shipment is accepted and transported. In addition without adequate ability to complete the acceptance process, the shipment may be rejected even though it is properly prepared. This can cause increased costs to the shipper and the operator and delay the shipment.

c) Preparing dangerous goods shipments includes identifying, classifying, packaging, marking, labelling and documentation for the transport of dangerous goods. These functions are considered critical and key to the correct transport of dangerous goods. In CBT, shipper's knowledge, skills and abilities should result in demonstrating their proficiency to meet these functions. It is critical that dangerous goods shipments are prepared in compliance to the Technical Instructions prior to offering the shipment for transport to an operator. This would reduce the number of improperly prepared shipments thus reducing cost and the introduction of risk in to the aviation system.

3. DRIVING PRINCIPLES (COMMENSURATE WITH RESPONSIBILITIES)

3.1 The "function" approach

3.1.1 The Technical Instructions state that personnel must be trained in the requirements commensurate with their responsibilities. Responsibilities are not necessarily category/job specific as designated in the Technical Instructions Tables 1-4 and 1-5. For example, in smaller operations, a person may perform many functions such as accepting dangerous goods and loading/securing dangerous goods on board an aircraft. This person's training must reflect that reality/situation. Also, entities such as ground handling companies and freight forwarders may perform functions that are specific to a shipper or an operator. These entities must train commensurate with their responsibilities and functions they perform regardless of their job title. Concentrating on functions and responsibilities rather than a job title or description will ensure that a person has the skills and abilities to perform the function in compliance with the Technical Instructions.

3.1.2 Table 1-4 and 1-5 in the Technical Instructions refer only to the aspect of knowledge that personnel should have to perform their specific job, but do not cover the "how to" part of their job. The focus of competency based training is to ensure that personnel can perform their job. By focusing on functions rather than jobs, a clearer link to the Technical Instruction training tables is established which facilitates the transition to competency based training. CBT implementation would:

a) A focus on training and assessment outcomes and eliminate job categories/titles;

b) Organization of training principles and assessment programmes focussing on competencies and abilities;

c) Focusing on achieving competence and de-emphasizing hours would result in the increased effectiveness of the training;

d) A focus on the trainee and provide flexibility.

4. ROLES AND RESPONSIBILITIES IN CBT

4.1 Employer

4.1.1 Employers benefit from CBT by having a more effective work force. Employers need to work with the training managers to develop the specifications of what they need as a result of the training programme. Employer specifications should at least address:

a) the required competencies;

b) the operational context;

c) the national regulatory environment; and

d) the target training audience.

4.1.2 The Technical Instructions require that dangerous goods programmes for operator personnel are subject to review and approval by the appropriate national authority (regulator). In addition some States also subject other dangerous goods programmes, such as those for shippers, to review and approval by the appropriate national authority (regulator). In all these instances, prior to proceeding with the development of CBT, employers should liaise directly with the regulator to ensure that their requirements are taken into account.

4.1.3 Once personnel have successfully completed the CBT programme, employers should measure how they perform on the job against the applicable competencies. This monitoring involves data collection and analysis which if they are an operator supports their SMS.

4.1.4 Employers ensure that training is designed and developed to establish clear links among the competencies to be achieved, learning objectives, assessment methods, and course materials.

4.2 Instructor

4.2.1 In CBT, the instructor must demonstrate competencies as a facilitator. The instructor facilitates the trainee's progression towards the achievement of competencies. They also collect

information about the effectiveness of the training materials which supports continuous improvement. See instructor competencies in PANS-TRG.

4.3 Trainee

4.3.1 In CBT, trainees are active participants in their learning process and the achievement of competencies as opposed to passive recipients of knowledge. The CBT programme provides them with a clear idea of their learning path towards competency through the training programme and beyond. The CBT will directly contribute to improving their performance on the job, to include trainees safety performance.

4.4 Regulator

4.4.1 There are important differences between the ways the regulator would oversee a traditional training programme versus a CBT programme. In a traditional training programme, the authority assesses the course components and final test against the elements described in the Technical Instructions Part 1, Chapter 4, including Table 1-4, 1-5 or 1-6, as applicable, to verify that the requirements for a given function are addressed. The fact that all components of the course are there (or appear to be there) does not necessarily mean that training is effective.

4.4.2 Where CBT has been implemented, regulators should oversee the training programme to ensure that it actually produces personnel that can perform on the job in a specific operational setting and in compliance with the national regulatory framework.

5. DEVELOPING CBT FOR DANGEROUS GOODS

5.1 Methods used to develop the ICAO competency framework

5.1.1 A competency framework for dangerous goods personnel and complementary flow charts are provided in Appendices A and B. The competency framework consists of competency units, competency elements and performance criteria which are defined in the PANS-TRG as:

a) ***Competency unit.*** A discrete function consisting of a number of competency elements.

b) ***Competency element.*** An action that constitutes a task that has a triggering event and a terminating event that clearly defines its limits, and an observable outcome.

c) ***Performance criteria.*** Simple, evaluative statements on the required outcome of the competency element and a description of the criteria used to judge whether the required level of performance has been achieved.

5.1.2 All responsibilities of personnel involved in transport of dangerous goods by air are described by the following six functions which correspond to the competency units:

a) Classifying dangerous goods;

b) Preparing a dangerous goods shipment;

c) Processing/accepting cargo;

d) Managing cargo pre-loading;

e) Accepting passenger and crew baggage; and

f) Loading/unloading of cargo/baggage

The flowcharts in Appendix B illustrate the typical processes of performing these functions.

Note 1.— Reporting of dangerous incidents, accidents and other occurrences have not be included as a function as it may be required at any point after dangerous goods have been prepared for transport during the dangerous goods cycle.

Note 2.— While it is recognized that security screening is not a dangerous-goods specific function, it is expected that security screening staff have some knowledge of dangerous goods to assist in the detection and removal of dangerous goods not permitted in the transport system.

5.1.2 Employers need to determine the competencies that personnel involved in dangerous goods need to have to perform their job.

5.1.3 The Technical Instructions state that personnel must be trained in the requirements commensurate with their responsibilities. Responsibilities are linked to functions/competency units. For example, in smaller operations, a single person may perform several functions such as accepting dangerous goods and loading/securing dangerous goods on board an aircraft. This person's training must reflect that reality/situation.

5.2 Methods to develop employer/personnel specific competency-based training

5.2.1 The following steps must be taken before a training programme can be designed.

5.2.2 An employer must conduct a training needs analysis to determine what they need as a result of training and what their resources are to achieve this result. This critical step will ensure that training fits the employer's purpose and is effective.

5.2.3 The employer must select the appropriate competencies associated with the functions that its personnel perform from the ICAO competency framework. In doing so, employers must consider their own operational and organizational environments. For example, one operator may accept dangerous goods shipments as cargo while another may not; a shipper may be dealing with a single class of dangerous goods, while another deals with many. In addition, an employer must consider domestic and international regulatory requirements that apply to their operations.

5.2.4 The employer must then determine the level of knowledge and/or skills necessary to perform each of the customized competencies. For example, the person accepting dangerous goods will not require the same level of knowledge and/or skills related to classification as someone who is classifying dangerous goods.

5.2.5 The employer documents the result of the above work as its own customized competency framework. Training can then be designed based on this competency framework.

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Attachment A

COMPETENCY FRAMEWORK FOR PERSONNEL INVOLVED IN TRANSPORTING DANGEROUS GOODS

ABBREVIATIONS USED

Abbreviation	*Meaning*
CU	Competency unit
CE	Competency element
PC	Performance criteria

COMPETENCY FRAMEWORK

CU 1 – Classifying dangerous goods

- CE 1.1 Evaluate substances or articles against classification criteria, as applicable
  - PC 1.1.1 Determine if it is dangerous goods
  - PC 1.1.2 Determine if it is forbidden under any circumstances
- CE 1.2 Determine dangerous goods description
  - PC 1.2.1 Determine class or division
  - PC 1.2.2 Determine packing group, if applicable
  - PC 1.2.3 Determine proper shipping name and UN number
  - PC 1.2.4. Determine if it is forbidden unless approval or exemption is granted
- CE 1.3 Review special provisions
  - PC 1.3.1 Assess if special provision(s) is applicable
  - PC 1.3.2 Apply special provision(s)

CU 2 Preparing dangerous goods shipment

- CE 2.1 Assess packing options including quantity limitations
  - PC 2.1.1 Consider limitations (de minimus quantities, excepted quantities, limited quantities, passenger aircraft, cargo aircraft only, special provisions)
  - PC 2.1.2 Consider State and operator variations
  - PC 2.1.3 Determine if all-packed-in-one can be used
  - PC 2.1.4 Select how dangerous goods will be shipped based on limitations and variations
- CE 2.2 Apply packing requirements
  - PC 2.2.1 Consider constraints of packing instructions
  - PC 2.2.2 Select packaging materials (absorbent, cushioning, etc.)
  - PC 2.2.3 Assemble package
- CE 2.3 Apply marks and labels
  - PC 2.3.1 Determine applicable marks
  - PC 2.3.2 Apply marks
  - PC 2.3.3 Determine applicable labels
  - PC 2.3.4 Apply labels
- CE 2.4 Determine if overpack can be used
  - PC 2.4.1 Apply marks if necessary
  - PC 2.4.2 Apply labels if necessary

CE 2.5 Prepare documentation
- PC 2.5.1 Complete the dangerous goods transport document
- PC 2.5.2 Complete other transport documents (e.g. AWB)
- PC 2.5.3 Include other required documentation (e.g. approvals/exemptions, etc.), as applicable
- PC 2.5.4 Retain copies of documents as required

CU 3 Processing/accepting cargo

CE 3.1 Review documentation
- PC 3.1.1 Verify air waybill
- PC 3.1.2 Verify dangerous goods transport document
- PC 3.1.3 Verify other documents as applicable (exemptions, approvals, etc.)
- PC 3.1.4 Verify State/operator variations

CE 3.2 Review package(s)
- PC 3.2.1 Verify marking
- PC 3.2.2 Verify label
- PC 3.2.3 Verify package type
- PC 3.2.4 Verify package conditions
- PC 3.2.5 Verify State/operator variations

CE 3.3 Complete acceptance procedures
- PC 3.3.1 Complete acceptance checklist, if applicable
- PC 3.3.2 Provide shipment information for load planning
- PC 3.3.3 Retain documents as required

CE 3.4 Process/accept cargo other than dangerous goods
- PC 3.4.1 Check documentation for indications of undeclared dangerous goods
- PC 3.4.2 Check packages for indications of undeclared dangerous goods

CU 4 Managing cargo pre-loading

CE 4.1 Plan loading
- PC 4.1.1 Determine stowage requirements
- PC 4.1.2 Determine segregation, separation, aircraft/compartment limitations

CE 4.2 Prepare load for aircraft
- PC 4.2.1 Check packages for indications of undeclared dangerous goods
- PC 4.2.2 Check for damage and/or leakage
- PC 4.2.3 Apply stowage requirements (e.g. segregation, separation, orientation)
- PC 4.2.4 Apply ULD tags when applicable
- PC 4.2.5 Transport cargo to aircraft

CE 4.3 Issue NOTOC
- PC 4.3.1 Enter required information
- PC 4.3.2 Verify conformance with load plan
- PC 4.3.3 Transmit to loading personnel

CU 5 Accepting passenger and crew baggage

CE 5.1 Process baggage
- PC 5.1.1 Identify forbidden dangerous good
- PC 5.1.2 Apply approval requirements

CE 5.2 Accept baggage
- PC 5.2.1 Apply operator requirements
- PC 5.2.2 Advise pilot in command

CU 6 Loading/unloading of cargo/baggage

CE 6.1 Load aircraft

- PC 6.1.1 Transport cargo/baggage to aircraft
- PC 6.1.2 Check packages for indications of undeclared dangerous goods
- PC 6.1.3 Check for damage and/or leakage
- PC 6.1.4 Apply stowage requirements (e.g. segregation, separation, orientation)
- PC 6.1.5 Verify that NOTOC reflects against aircraft load
- PC 6.1.6 Verify passenger baggage requirements if applicable
- PC 6.1.7 Inform pilot-in-command and flight operations officer/flight dispatcher

CE 6.2 Manage dangerous goods during flight

- PC 6.2.1 Detect presence of dangerous goods not permitted in baggage
- PC 6.2.2 Apply procedures in the event of an emergency
- PC 6.2.3 Inform flight operations officer/flight dispatcher/air traffic control in the event of an emergency

CE 6.3 Unload aircraft

- PC 6.3.1 Apply specific unloading considerations as applicable
- PC 6.3.2 Check packages for indications of undeclared dangerous goods
- PC 6.3.3 Check for damage and/or leakage
- PC 6.3.4 Transport cargo/baggage to facility/terminal

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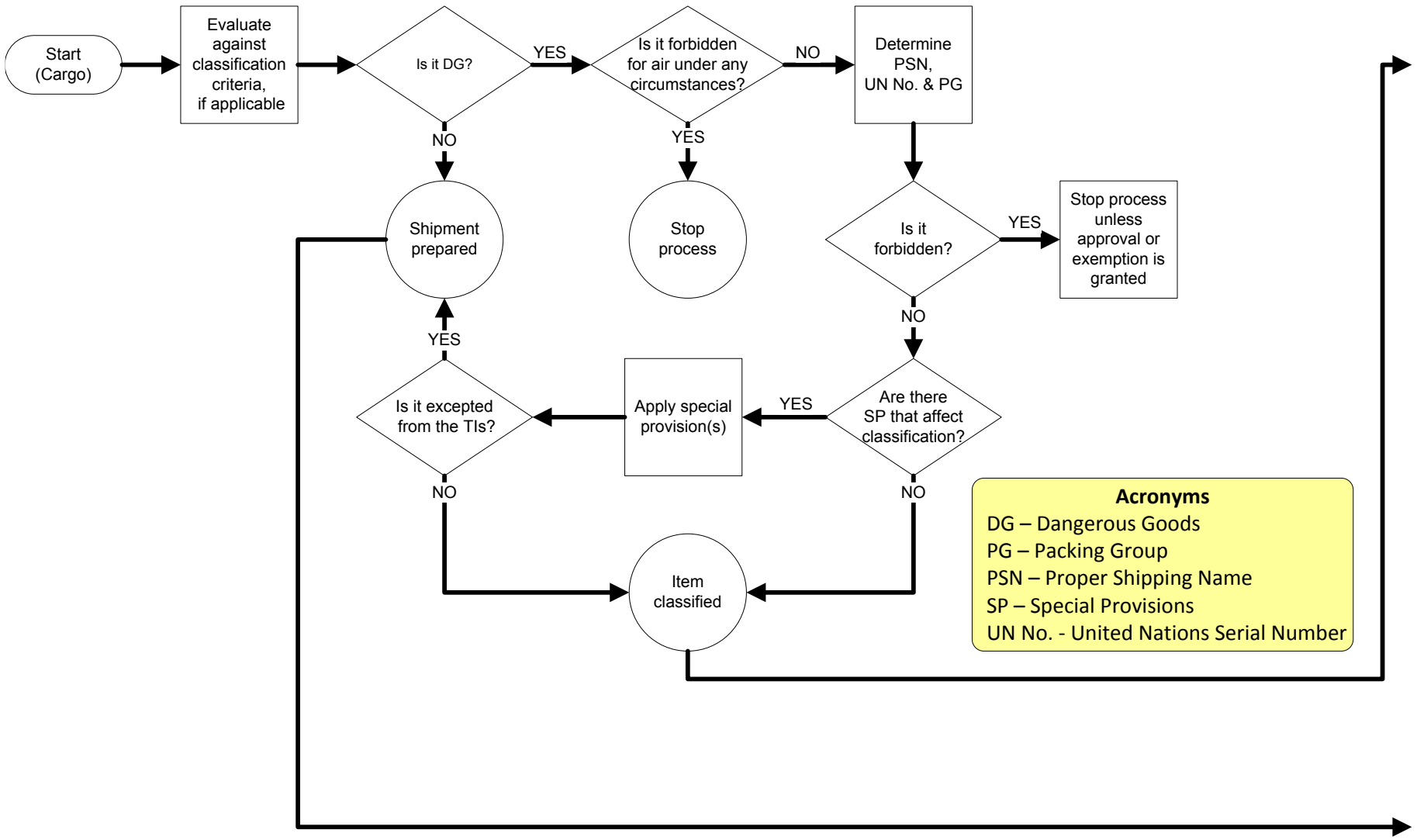
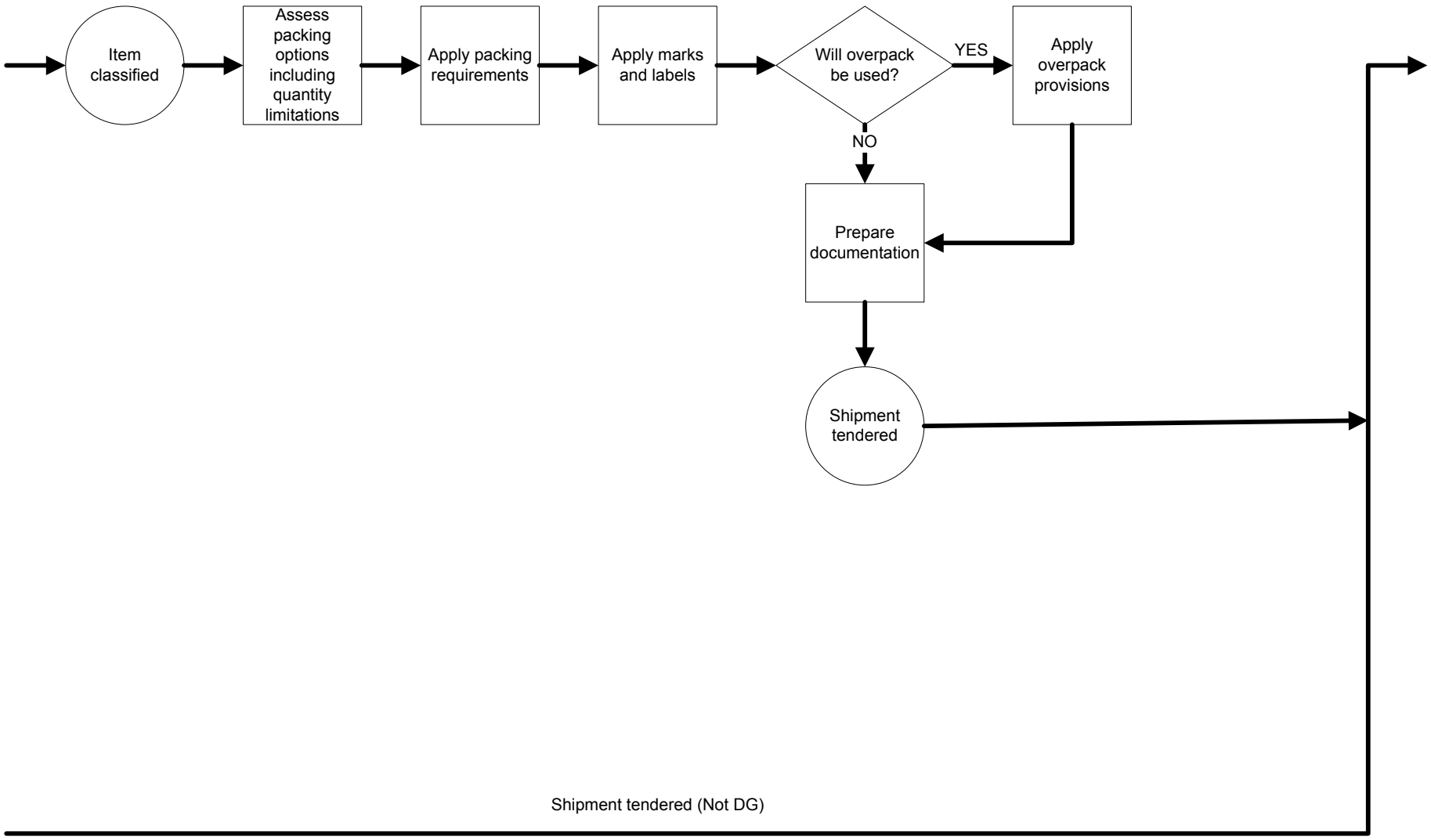
Attachment B

FUNCTIONS PERFORMED BY DANGEROUS GOODS PERSONNEL — FLOWCHARTS

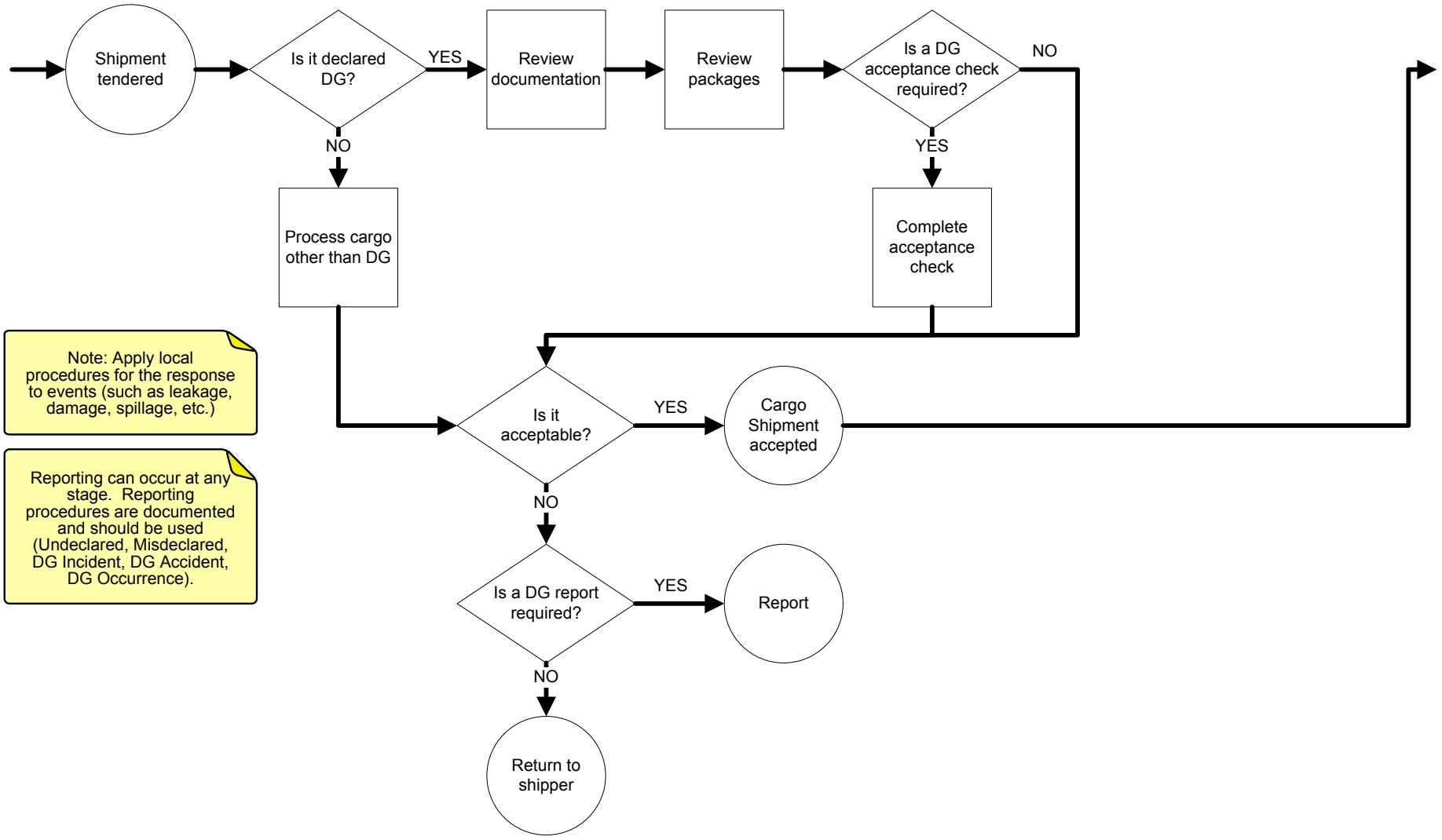
Competency Unit 1
Classifying Dangerous Goods



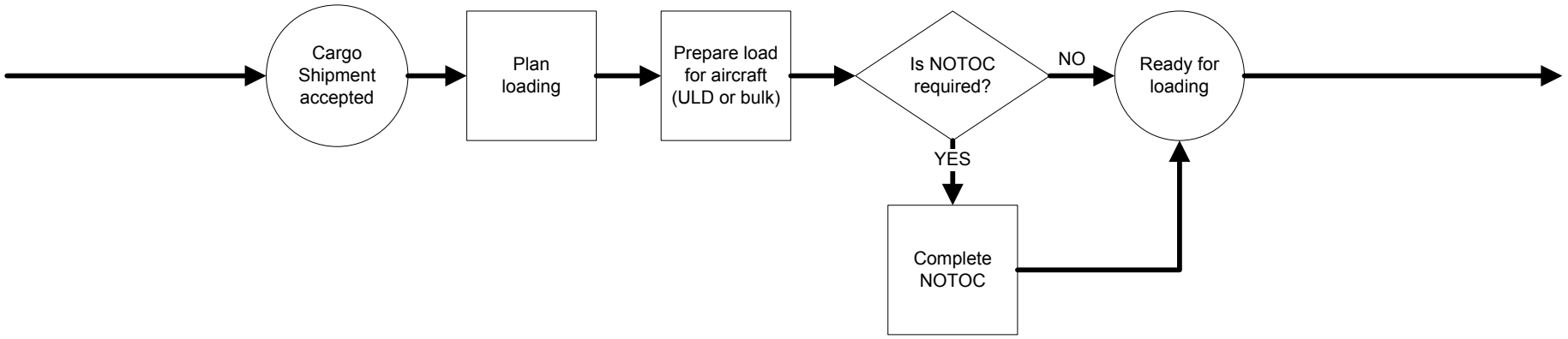
Competency Unit 2
Preparing Dangerous Goods Shipment



Competency Unit 3
Processing /Accepting Cargo



Competency Unit 4
Managing Cargo Pre-Loading



Note: Apply local procedures for the response to events (such as leakage, damage, spillage, etc.)

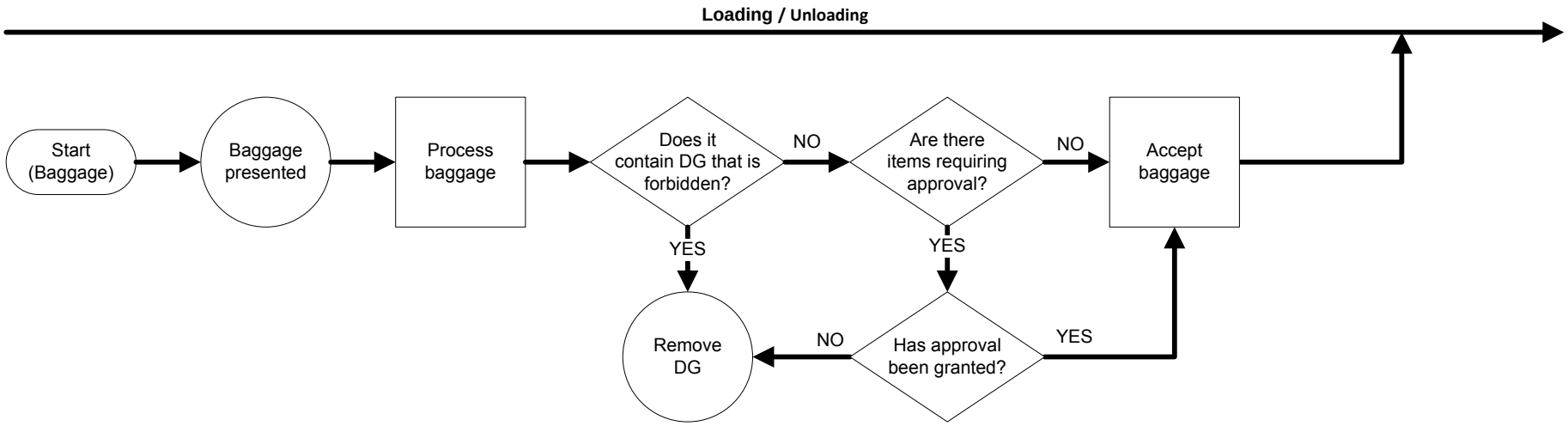
Reporting can occur at any stage. Reporting procedures are documented and should be used (Undeclared, Misdeclared, DG Incident, DG Accident, DG Occurrence).

Acronyms

NOTOC – Notification to Captain

ULD – Unit Load Device

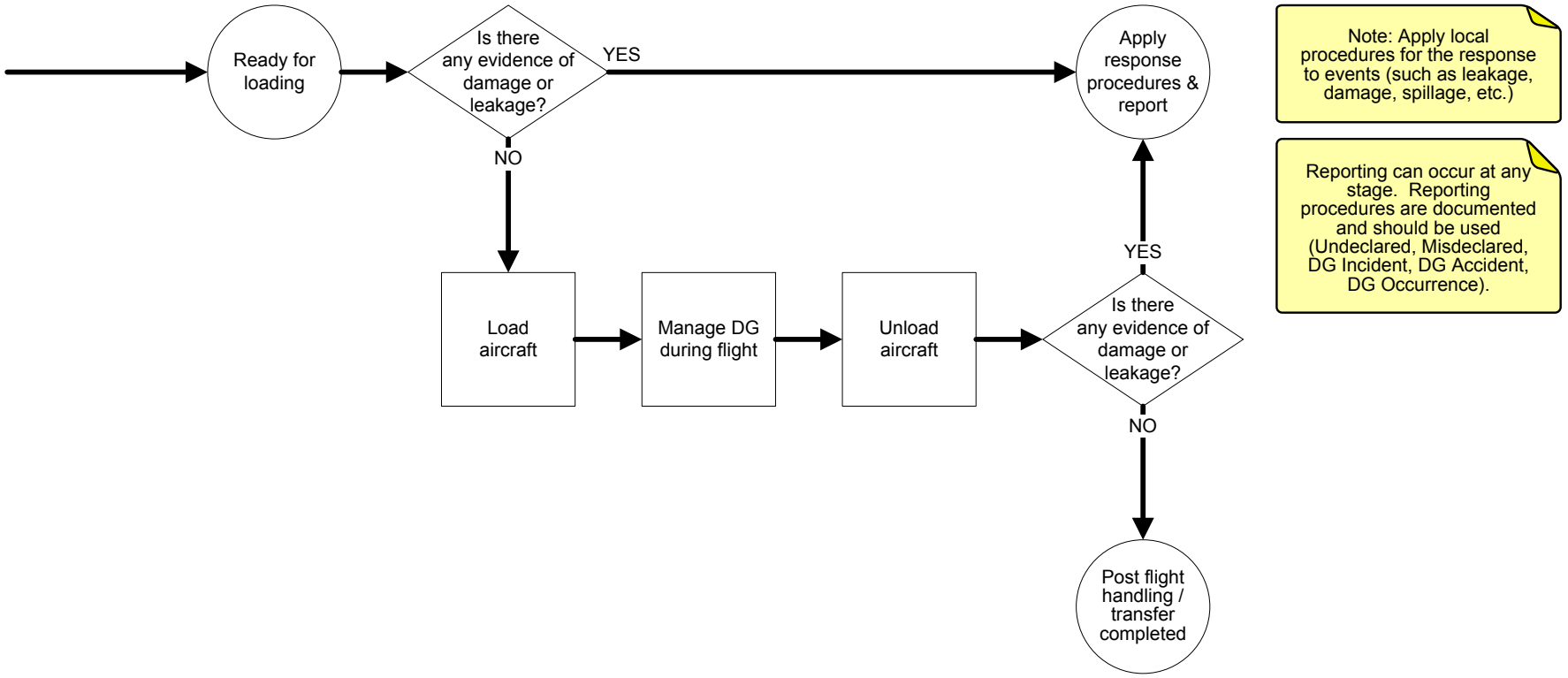
Competency Unit 5
Accepting Passenger and Crew Baggage



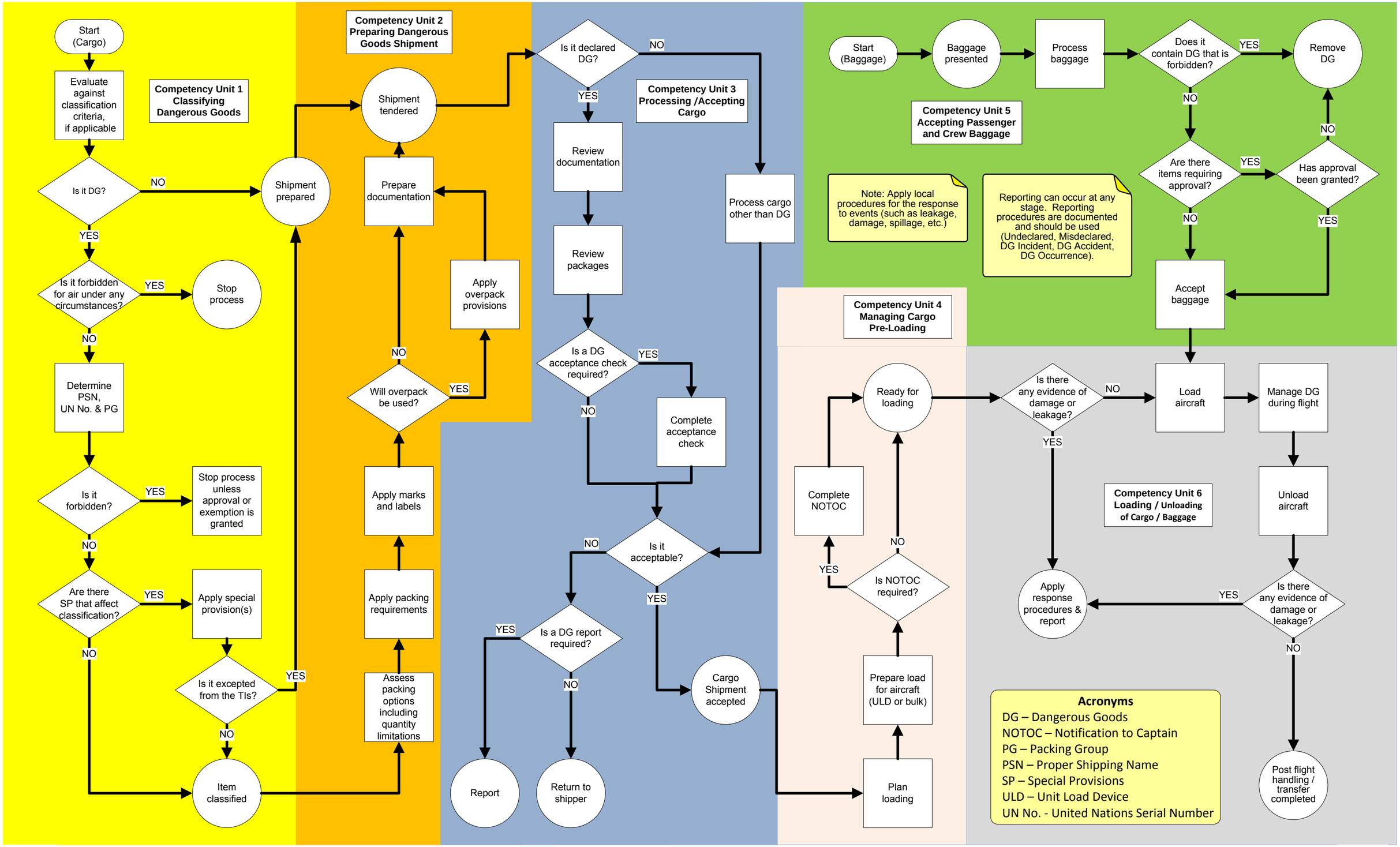
Note: Apply local procedures for the response to events (such as leakage, damage, spillage, etc.)

Reporting can occur at any stage. Reporting procedures are documented and should be used (Undeclared, Misdeclared, DG Incident, DG Accident, DG Occurrence).

Competency Unit 6
Loading / Unloading of Cargo / Baggage



ALL COMPETENCY UNITS FOR PERSONNEL INVOLVED IN TRANSPORTING DANGEROUS GOODS



APPENDIX B

COMPETENCY FRAMEWORK FOR STATE EMPLOYEES

ABBREVIATIONS USED

Abbreviation	*Meaning*
CU	Competency unit
CE	Competency element
PC	Performance criteria

COMPETENCY FRAMEWORK

CU 1 Support the development and implementation of a State dangerous goods programme

- CE 1.1 Develop regulations
  - PC 1.1.1 Apply procedures to develop national regulations on the air transport of dangerous goods
  - PC 1.1.2 Monitor relevant changes to ICAO provisions that may impact national dangerous goods air transport regulations
  - PC 1.1.3 Develop guidance on how to comply with national regulations
- CE 1.2 Develop policies
  - PC 1.2.1 Develop policies to approve an operator's manuals specific to dangerous goods
  - PC 1.2.2 Develop policies to approve an operator's training program specific to dangerous goods
  - PC 1.2.3 Develop policies to conduct oversight of entities performing any functions prescribed in national regulations for the air transport of dangerous goods
  - PC 1.2.4 Develop surveillance work plan
- CE 1.3 Develop tools to support the implementation of national regulations
  - PC 1.3.1 Develop guidance material for entities performing any functions prescribed in national regulations for the air transport of dangerous goods
  - PC 1.3.2 Develop training for entities performing any functions prescribed in national regulations for the air transport of dangerous goods
  - PC 1.3.3 Develop public awareness materials

CU 2 Approve an operator
- CE 2.1 Approve operations manual
  - PC 2.1.1 Verify the operations manual against the national regulations, policies and procedures for transport by air of dangerous goods
  - PC 2.1.2 Recommend amendments to the operations manual as necessary
- CE 2.2 Approve training programmes
  - PC 2.1.1 Verify the training programme against the national regulations, policies and procedures for transport by air of dangerous goods
  - PC 2.1.2 Verify that the training programme addresses all dangerous goods functions identified in the operations manual
  - PC 2.1.3 Recommend amendments to the training programme as necessary
- CE 2.3 Closing approval process
  - PC 2.3.1 Verify that amendments in operations manual and training programme are completed
  - PC 2.3.2 Issue the approval

CU3 Conduct oversight of dangerous goods operations
- CE 3.1 Prepare for inspection
  - PC 3.1.1 Analyze information on dangerous goods-related activities
  - PC 3.1.2 Plan inspection activities
- CE 3.2 Conduct inspection
  - PC 3.2.1 Advise dangerous goods entity of scope and intent of inspection
  - PC 3.2.2 Verify compliance with national regulations, policies and procedures for transport by air of dangerous goods
- CE 3.3 Communicate inspection results
  - PC 3.3.1 Advise dangerous goods entity of inspection results
  - PC 3.3.2 Document inspection results

CU 4 Evaluate dangerous goods accidents, incidents, and cases of suspected non-compliance
- CE 4.1 Conduct investigation
  - PC 4.1.1 Gather evidence
  - PC 4.1.2 Verify compliance with national regulations for dangerous goods transport by air
- CE 4.2 Take corrective/appropriate action
  - PC 4.2.1 Document specific areas of non-comliance
  - PC 4.2.2 Apply national compliance policy

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APPENDIX C

PROPOSED AMENDMENTS TO THE TRAINING PROVISIONS IN THE TECHNICAL INSTRUCTIONS

Part 1

GENERAL

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Chapter 4

TRAINING

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Replace Table 1-4 with the following:

Table 1-4. Subject matter for which personnel performing specific function should be familiar with

(CU = Competency Unit CE = Competency element)

Dangerous goods subject matter	Dangerous goods functions																			
	CU 1 Classifying dangerous goods			CU 2 Preparing dangerous goods shipment					CU 3 Processing/ accepting cargo				CU 4 Managing cargo pre-loading			CU 5 Accepting passenger and crew baggage		CU 6 Loading/unloading of cargo/baggage		
	CE 1.1	CE 1.2	CE 1.3	CE 2.1	CE 2.2	CE 2.3	CE 2.4	CE 2.5	CE 3.1	CE 3.2	CE 3.3	CE 3.4	CE 4.1	CE 4.2	CE 4.3	CE 5.1	CE 5.2	CE 6.1	CE 6.2	CE 6.3
General philosophy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Limitations	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
General requirements for shippers	X	X	X	X	X	X	X	X	X	X	X									
Classification	X	X	X								X									
List of dangerous goods	X	X	X	X	X	X	X	X	X	X	X				X				X	
Packing requirements				X	X		X			X	X	X								
Labelling and marking						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dangerous goods transport document and other relevant documentation								X	X	X	X	X	X		X			X	X	X
Acceptance procedures									X	X	X									
Recognition of undeclared dangerous goods	X	X			X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Storage and loading procedures											X		X	X	X			X	X	X
Pilots' notification													X	X	X				X	
Provisions for passengers and crew									X				X	X		X	X	X	X	X
Emergency procedures								X	X		X			X		X	X	X	X	X

— END —

Competency elements

1.1 — Evaluate substances or articles against classification criteria, as applicable
1.2 — Determine dangerous goods description
1.3 — Review special provisions
2.1 — Assess packing options including quantity limitations
2.2 — Apply packing requirements
2.3 — Apply marks and labels
2.4 — Determine if overpack can be used
2.5 — Prepare documentation
3.1 — Review documentation
3.2 — Review package(s)
3.3 — Complete acceptance procedures
3.4 — Process/accept cargo other than dangerous goods
4.1 — Plan loading
4.2 — Prepare load for aircraft
4.3 — Issue NOTOC
5.1 — Process baggage
5.2 — Accept baggage
6.1 — Load aircraft
6.2 — Manage dangerous goods during flight
6.3 — Unload aircraft