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Transportation of dangerous goods training, assessment and competency

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Transportation of dangerous goods training, assessment and competency

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Contents

Introduction

This is the first edition of CAN/CGSB-192.3 Transportation of Dangerous Goods training, assessment and competency.

This standard is intended for incorporation by reference into the *Transportation of Dangerous Goods Regulations* (TDG Regulations), specifically Part 6 that pertains to training. Where there are differences between the requirements of the TDG Regulations and this standard, the TDG Regulations prevail, unless specified otherwise, to the extent of the difference.

This standard identifies :

- Employer responsibilities;
- Persons' competencies;
- General awareness and function specific training;
- Evaluations and assessment;
- Ongoing training and assessment;
- Recurrent training, evaluation and assessment; and
- Records.

The CGSB Committee on Transportation of Dangerous Goods Competency is comprised of members from industry, training organizations and government having responsibility to ensure that persons who handle, offer for transport or transport dangerous goods are competent. The Committee considers this standard, developed by consensus, to be practical, current with respect to industry practices, useful and acceptable to all interested parties.

Units of measure – Quantities and dimensions in this standard are given in SI units.

Transportation of dangerous goods training, assessment and competency

1 Scope

This National Standard of Canada sets out the requirements for training, assessment and competency of persons who handle, offer for transport or transport dangerous goods by road, rail, marine and air in Canada.

Competency to perform tasks pertaining to the transportation of dangerous goods (TDG) is developed through the acquisition of knowledge, skill, and ability. This standard recognizes that operations vary from organization to organization within and across industries based on tasks and modes of transport, but is widely applicable as it

- identifies and describes function-specific tasks across all modes of transport; and
- provides a benchmark to employers for training and the determination of competence that suits their operations and workforce requirements.

2 Normative references

The following normative documents contain provisions that, through references in this text, constitute provisions of this National Standard of Canada. The referenced documents may be obtained from the sources noted below.

NOTE The addresses and websites provided below were valid at the date of publication of this standard.

An undated reference is to the latest edition or revision of the reference or document in question, unless otherwise specified by the authority applying this standard. A dated reference is to the specified revision or edition of the reference or document in question.

2.1 International Civil Aviation Organization (ICAO)

Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284)

2.1.1 Source

The above may be obtained from the International Civil Aviation Organization (ICAO), 999 Robert-Bourassa Boulevard, Montréal (Québec) Canada H3C 5H7. Telephone: 514-954-8219. Fax: 514-954-6077. E-mail: icaohq@icao.int. Customer Service: sales@icao.int. Web site: https://www.icao.int/.

2.2 Transport Canada

Transportation of Dangerous Goods Act, 1992 (including amendments)

Transportation of Dangerous Goods Regulations (including amendments)

2.2.1 Source

The above may be obtained from the Publications page of Transport Canada Web site at https://www.tc.gc.ca/eng/publications-menu.htm.

3 Terms and definitions

For the purposes of this National Standard of Canada, the following terms and definitions apply. Where there is a conflict between a term or definition in this standard and that of the TDG Regulations, the term or definition in the TDG Regulations shall prevail. These definitions apply in the context of persons engaged in roles involving the performance of dangerous goods tasks.

3.1
assess (*évaluer*)
evaluate a person's knowledge, skill and ability required to perform a task.

3.2
assessment (*évaluation*)
evaluation of a person's, knowledge, skill and ability required to perform a task.

3.3
competency (*compétence*)
a singular element or combination of, knowledge, skill, and ability required to perform a task.

3.4
competent (*personne compétente*)
having the knowledge, skill and ability required to perform a task.

3.5
training (*formation*)
process of developing or maintaining a person's knowledge, skill and ability to perform a task.

3.6
evaluate (*évaluer*)
test a person's knowledge of the general awareness learning outcomes.

4 Acronyms and abbreviated terms

For the purposes of this National Standard of Canada, the following abbreviations and acronyms apply.

ERAP – Emergency Response Assistance Plan

ICAO TI - International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air

MOC – Means of Containment

TDG – Transportation of Dangerous Goods

TDGR - *Transportation of Dangerous Goods Regulations*

NOTOC – Notice to Captain

ULD – Unit Load Device

5 General requirements

5.1 General

Employers shall ensure that:

a) task descriptions and performance criteria are developed and maintained for the assessment of competencies (see 6.2);

b) persons who handle, offer for transport or transport dangerous goods are competent, or are in the presence and under the direct supervision of a competent person;

c) each person is trained, evaluated and assessed in accordance with this Standard;

d) each person performs their tasks according to their assigned task descriptions, performance criteria and the training provided to them;

e) when subcontracting dangerous goods tasks, including training, evaluation or assessments, subcontracted persons are competent; and

f) procedures, or agreements are in place to ensure that persons perform their tasks competently at third party facilities.

NOTE Task descriptions and performance criteria can be contained in job descriptions, job safety analysis, hazard assessment and safe work procedures.

5.2 Training requirements

Employers shall ensure that persons who handle, offer for transport or transport dangerous goods are provided with

a) general awareness training, and

b) function specific training that corresponds with their assigned tasks.

NOTE Acceptable forms of training can include, but are not limited to, self-study, on-line, classroom and on the job.

5.3 Evaluation and assessment requirements

Employers shall ensure that persons who handle, offer for transport or transport dangerous goods are:

a) evaluated to verify knowledge comprehension following general awareness training, and

b) assessed to confirm competency following function specific training (see Annex B).

5.4 Ongoing training and assessment

Employers shall ensure that the training and assessments are conducted as required and in response to:

a) applicable regulatory changes; or

b) changes in tasks.

5.5 Recurrent training, evaluation and assessment

5.5.1 In accordance with Section 6.1, employers shall ensure that persons be re-evaluated and if necessary, retrained on general awareness within:

a) 24 months of the previous training for transport by aircraft; and

b) 36 months of the previous training for transport by road vehicle, railway vehicle or vessel.

5.5.2 In accordance with Section 6.2, employers shall ensure that persons' be reassessed and if necessary, re-trained on function specific tasks and be deemed competent within:

a) 24 months of the previous assessment for transport by aircraft; and

b) 36 months of the previous assessment for transport by road vehicle, railway vehicle or vessel.

NOTE See Annex A for a flow chart describing employers' responsibilities for training, evaluation and assessment.

5.6 Records

Employers shall maintain records. Records shall include:

a) the person's name;

b) the task descriptions and performance criteria for the person;

c) the date and location of the evaluation, assessment and training;

d) a description, copy or reference to the assessment used to determine the person's competence;

e) the name of the person(s) conducting the evaluation, assessment and training; and

f) the outcomes of the evaluation and assessment.

6 Detailed requirements

6.1 General awareness training and evaluation

6.1.1 Employers shall ensure that:

a) persons receive a minimum of two hours of instructional time focused on general awareness training which aligns with the following learning outcomes as per Annex C:

- overview of TDG Act and Regulations, including roles and responsibilities;
- classification and identification of dangerous goods;
- dangerous goods safety marks;
- documentation;
- MOC and certification safety marks;
- emergency response and reporting;
- special cases, special provisions and equivalency certificates;

b) trainers are competent to instruct and have the knowledge, skills, and abilities in the subjects they deliver;

c) the person's identity has been confirmed, prior to or at the time of the training.

6.1.2 Employers shall ensure that the general awareness training evaluation:

a) includes no less than twenty-five questions that verify knowledge retention, with no less than one question for each of the topics listed in 6.1.1 a);

b) has a pass rate of 80 %;

c) allows up to three attempts in which subsequent attempts should not be identical but allow for critical questions to be repeated. If unsuccessful, the person shall be provided further general awareness training.

Note In some circumstances, alternative assessment methods may be necessary (see Annex B).

6.2 Function specific training and assessment

6.2.1 Function specific training

Employers shall ensure that:

a) the content of the training is current and relevant; and

b) the task lists in 6.2.1.1 and 6.2.1.2 shall be used to determine the training.

6.2.1.1 Task list for road, rail and marine

a) Employers shall ensure that every person who classifies dangerous goods is trained to:

1) evaluate substances or articles against classification criteria:

i) identify if it is dangerous goods;

ii) apply special provision(s);

iii) identify if it is forbidden for transport under any circumstances.

b) Employers shall ensure that every person who determines shipping requirements is trained to:

1) identify packing options:

i) consider exemptions – special cases;

ii) apply special provision(s);

iii) determine quantity limitations per means of containment on a passenger means of transport;

iv) consider international border and carrier variations;

2) identify if ERAP is required.

c) Employers shall ensure that every person who prepares a dangerous goods consignment is trained to:

1) document:

i) prepare and review dangerous goods shipping document;

2) apply MOC requirements:

i) select MOC;

3) use dangerous goods safety marks:

i) identify and apply safety marks;

4) use overpacks;

5) load large MOC (i.e. freight container, consolidation bin, ULD, with small and large MOC):

i) identify securement requirements and apply loading and securement requirements;

ii) identify segregation, separation and vehicle/compartment limitations.

d) Employers shall ensure that every person who transports dangerous goods is trained to:

1) load means of containment:

i) verify or apply safety marks, as applicable;

ii) load and secure dangerous goods in/on MOC;

2) manage dangerous goods during transport:

i) manage shipping document(s);

ii) ensure that safety marks remain on means of containment;

3) unload dangerous goods:

i) apply specific unloading considerations, as applicable;

ii) remove, replace or cover safety marks from the means of containment, as applicable.

e) Employers shall ensure that every person who responds to an emergency and activates an ERAP is trained to:

1) respond to emergency:

i) activate ERAP if applicable;

ii) mitigate/report emergency;

iii) report release or anticipated release and complete 30 day follow up report;

iv) report loss or theft;

v) report unlawful interference.

6.2.1.2 Task list for air

a) Employers shall ensure that every person who classifies dangerous goods is trained to:

1) evaluate substances or articles against classification criteria, as applicable:

i) identify if it is dangerous goods;

ii) apply special provision(s);

iii) identify if it is forbidden for transport under any circumstances.

b) Employers shall ensure that every person who determines shipping requirements is trained to:

1) identify packing options:

i) consider exemptions – limited quantities;

ii) consider exemptions – -de minimis and excepted quantities;

iii) consider exemptions special cases;

iv) consider special provision(s);

v) consider quantity limitations per package;

vi) consider State and operator variations;

2) identify if ERAP is required.

c) Employers shall ensure that every person who prepares dangerous goods consignment is trained to:

1) document:

i) prepare dangerous goods shipping document and other transport documents;

2) apply moc requirements:

i) select MOC;

3) use of dangerous goods safety marks:

i) identify and apply safety marks;

4) use of overpacks.

d) Employers shall ensure that every person who processes/accepts dangerous goods.

1) review documentation;

2) review packages:

i) verify safety marks;

ii) verify package type and condition;

iii) consider State and operator variations;

3) complete acceptance procedures.

e) Employers shall ensure that every person who manages dangerous goods – load planning is trained to:

1) load planning:

i) identify segregation, separation and aircraft/compartment limitations;

2) prepare ULD:

i) apply stowage requirements (e.g. segregation, separation, orientation);

ii) complete and apply ULD tags when applicable;

3) load aircraft:

i) apply stowage requirements (e.g. segregation, separation, orientation);

4) issue NOTOC:

i) prepare NOTOC;

ii) provide NOTOC to loading personnel, pilot-in-command and flight operations officer/flight dispatcher.

f) Employers shall ensure that every person who transports dangerous goods is trained to:

1) manage dangerous goods pre- and during flight:

i) interpret NOTOC;

ii) apply procedures in the event of an emergency;

2) unload aircraft:

i) apply specific unloading considerations.

g) Employers shall ensure that every person who activates an ERAP is trained to:

1) respond to emergency:

i) activate ERAP, if applicable.

h) Employers shall ensure that every person who responds to an emergency is trained to:

1) respond to emergency:

i) mitigate dangerous goods accident or incident;

ii) report dangerous goods accident or incident and complete 30 day follow up report;

iii) report Undeclared or Misdeclared Dangerous Goods;

iv) report Dangerous Goods Occurrence;

v) report loss or theft;

vi) report unlawful interference.

6.2.2 Function specific assessment

6.2.2.1 Employers shall assess the person's competency by:

a) using valid and reliable methods as per Annex B;

b) establishing assessment criteria to determine competence, including when the person is assessed by third-party training providers; and

c) verifying that the person can perform assigned tasks competently.

6.2.2.2 Employers shall assess a person's performance and knowledge in accordance with Annex D or E, as appropriate. This assessment shall be done according to that person's assigned task(s).

6.2.2.3 Employers shall ensure that assessors have the knowledge, skills and abilities in the subjects they assess.

NOTE 1 See Annex D, Table D.1 for more detailed information regarding the road, rail and marine modes.

NOTE 2 See Annex E, Table E.1 for more detailed information regarding the air mode.

Annex A

(*Informative*)

Employers' responsibilities for training and assessment

Employers should follow the steps as per the flow chart below.

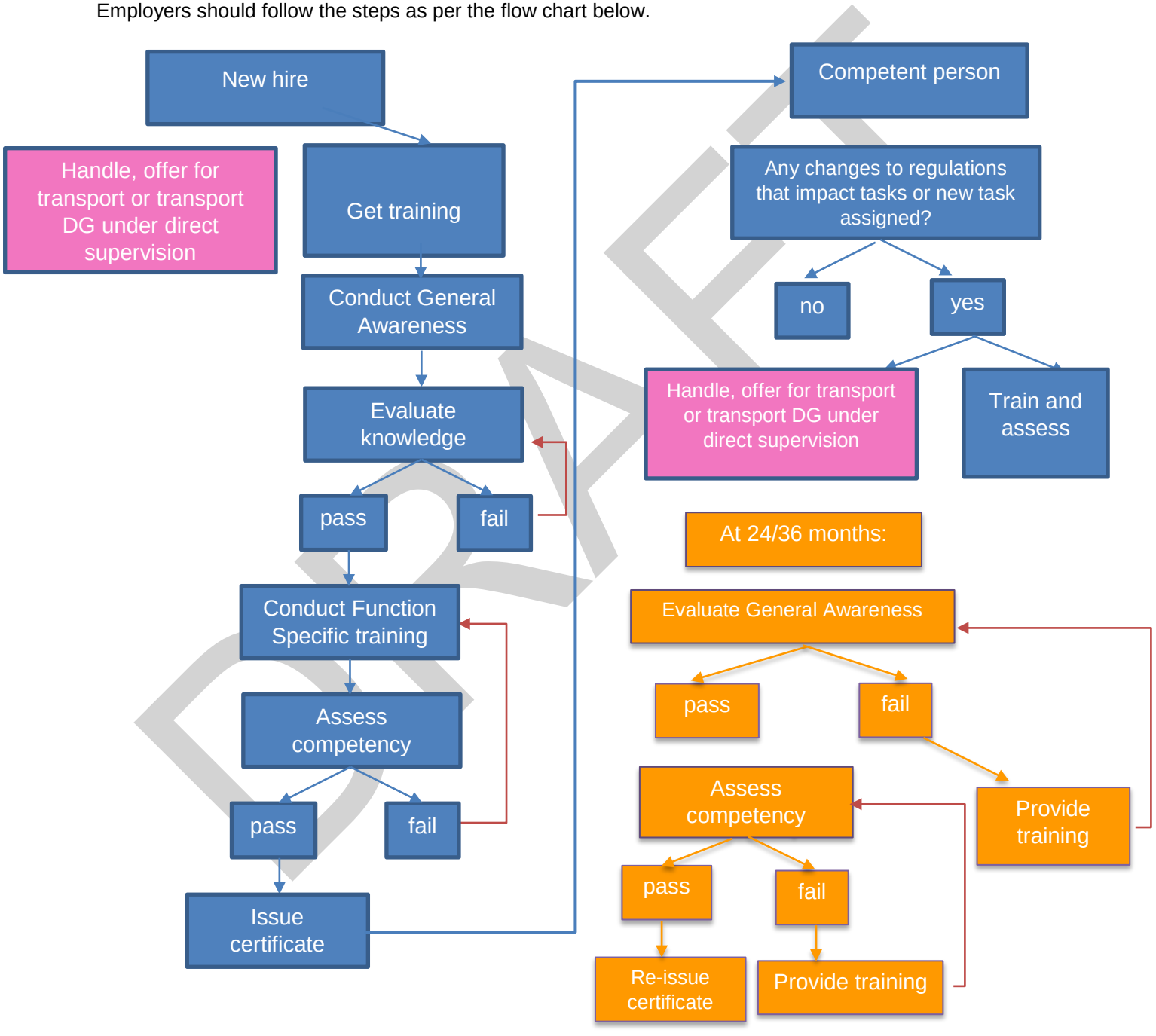

Figure A.1 – Flow chart describing employers' responsibilities for training and assessment

Annex B

(*normative*)

Types of assessment methods

Employers shall select at least one of the following assessment methods when assessing the competence of persons.

B.1 Written Examination: is an objective method used to assess knowledge. It shall verify that persons have the knowledge to think through solutions rather than simply recalling information from memory. It is also used for competency aspects that are difficult or impossible to assess on a typical worksite or do through observation. For example, how a person shall respond to an emergency situation or respond to a non-compliance situation.

B.2 Structured Interview: is a subjective method used to assess knowledge and performance. It shall be used in a manner to remove subjectivity by having multiple interviewers, structured interview content and response grading.

B.3 Demonstration: is the visual monitoring of persons as they complete tasks in the workplace environment. This assessment method can be objective when used in a structured way to assess performance. However, it is limited in its ability to confirm knowledge which is better assessed by written examinations or structured interviews.

B.4 Simulation: is the visual monitoring of persons as they complete tasks in a fabricated environment. This assessment method can be objective when used in a structured way to assess performance. However, it is limited in its ability to confirm knowledge which is better assessed by written examinations or structured interviews.

B.5 Collection of Evidence: is used to assess knowledge and performance by reviewing key performance indicators, observable work product or project outcomes. In this context, the assessor does not see the performance of the task itself but assesses competency based on the outcome of a person's efforts.

Annex C

(*normative*)

General awareness training and outcomes

The following table provides the person(s) General awareness training and outcomes from various topics regarding the transportation of dangerous goods.

Table C.1 – Learning outcomes

Learning Topics	Learning Outcomes					
A. Overview of TDG Act and Regulations, including roles and responsibilities	Explain the role of TDG Regulations in protecting public safety.	Identify the four regulated modes of transportation for dangerous goods.	Describe the responsibilities of persons who handle, offer for transport or transport dangerous goods.			
B. Classification and identification of dangerous goods	Identify the nine classes of dangerous goods.	Provide examples of dangerous goods.	Explain the meaning and use of the three packing groups.	Explain the relevance of the UN number and shipping name.	Identify the purpose of Schedules 1 and 3.	
C. MOC and Certification safety marks	Define small MOC , and large MOC.	Describe when a standardized MOC is required.				
D. Dangerous goods (DG) safety marks	Identify the safety marks for the nine classes of dangerous goods.	Identify the required safety marks on MOC.	Recognize the different types of dangerous goods safety marks.	Identify the required dangerous goods safety marks on a MOC.		

E. Documentation	Identify basic consignor responsibilities for documentation.	Identify basic carrier responsibilities for documentation.	Describe the information required on a shipping document for dangerous goods.			
F. Emergency response and reporting	Explain the reasonable emergency measures a person shall take to reduce or eliminate any danger to public safety that results or may reasonably be expected to result from a release of dangerous goods.	Identify who is responsible for the immediate reporting of a release of dangerous goods.	Explain the role of CANUTEC.	Identify who shall be notified in the event of release of dangerous goods.	Determine the circumstances requiring the completion of an emergency report, release report or 30-day follow-up.	Explain the purpose of an ERAP.
G. Special cases, special provisions and equivalency certificates	Identify common situations where some or all of the TDGR do not apply.					

Annex D

(*normative*)

Competency for the transportation of dangerous goods by road, rail and marine

D.1 Use Table D.1 of tasks and subtasks as criteria to consider when assessing the competencies of persons performing those tasks or subtasks. Choose those criteria that are applicable to the tasks the person is responsible for. You may need to create additional criteria where appropriate. For competency to be achieved, both performance and knowledge shall be assessed at a level appropriate to the person's tasks that they have been assigned.

D.2 Table D.1 provides performance related to the ability to demonstrate that the person can perform the tasks related to the criteria item in a manner that is compliant with the regulations (e.g., the person knows how to do the task competently).

D.3 Knowledge relates to understanding the applicable criteria, and explaining how that criteria applies to the tasks that the person performs to be in compliance with the regulations (e.g., follow the criteria so their work is in compliance).

Table D.1 – Competency for the transportation of dangerous goods, by road, rail and marine (as per the TDGR)

a) Classifying dangerous goods			
1) Evaluate substances or articles against classification criteria, as applicable.			
	Subtask	Points to assess performance	Knowledge
i)	Identify if it is dangerous goods. If it is dangerous goods, identify class/ division, packing group (if applicable), shipping name and UN number.	1. Verify that the substance or article is listed by name in Schedule 1: • if listed, verify that meets the criteria in Part 2 for inclusion in at least one of the 9 classes of dangerous goods; or • if not listed, verify that it meets the criteria in Part 2 for inclusion in at least one of the 9 classes of dangerous goods. 2. Choose the most appropriate way to determine that a substance/article is dangerous goods: • when relying on the manufacturer's classification, consignor shall review classification to confirm it is appropriate. • Use the classification o determined by Natural Resources Canada for explosives; o according to *Packaging and Transport of Nuclear Substances Regulations* for radioactive material; o determined by the Public Health Agency of Canada or the Canadian Food Inspection Agency for infectious substances (permissive). • Verify that the substance or article is listed by name in Schedules 1 and 3:	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Use and application of Part 2

		○ If found – use that shipping name and corresponding data (UN number, class and packing group/category) (section 2.3). ○ If not found, find generic shipping name with appropriate class, subsidiary class and packing group, use that shipping name and corresponding data (UN number, class and packing group). • For mixture/solution with one class and one packing group: ○ determine class and packing group; ○ refer to Schedule 1 and select the shipping name that most precisely describes the dangerous goods and that is most consistent with the class and the packing group (section 2.4). • For mixture/solution with more than one class or packing group: ○ determine class and packing group (section 2.5); ○ use precedence of classes section (section 2.8) to determine primary class, subsidiary class(es) and packing group; ○ refer to Schedule 1 and select the shipping name that most precisely describes the dangerous goods and that is most consistent with the class and the packing group.	
ii)	Apply special provision(s).	• Identify applicable special provision(s). • Assess applicable special provision(s). • Apply applicable special provision(s).	• Classification of dangerous goods (general knowledge) • Use and application of Schedules
iii)	Identify if it is forbidden for transport under any circumstances.	• Verify column 2 of Schedule 3 for the word "Forbidden". • Verify column 3 of Schedule 1 for the word "Forbidden". • Verify Schedule 2 for special provision(s).	• Classification of dangerous goods (general knowledge) • Use and application of Schedules

b) Determining shipping requirements			
1) Identify packing options.			
	Subtask	Points to assess performance	Knowledge
i)	Consider exemptions – special cases.	• For special cases, refer to Part 1. o Assess special case for specific modes of transport and dangerous goods/classes of dangerous goods. o Apply conditions related to special case.	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Application of the special case provision
ii)	Apply special provisions.	• Identify applicable special provision(s). • Assess applicable special provision(s). • Apply applicable special provision(s).	• Classification of dangerous goods (general knowledge) • Use and application of Schedules
iii)	Determine quantity limita-tions per MOC for passenger means of transport.	• Identify the quantity limit per MOC on a passenger carrying vessel, as applicable. • Identify the quantity limit per MOC on a passenger carrying road or rail vehicle, as applicable. • Identify the maximum net quantity per package by passenger aircraft, as applicable.	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Availability/frequency/practicality of using passenger vs cargo means of transport (e.g. the volume of dangerous goods per MOC)
iv)	Consider international border and carrier variations.	• Consider international shipping requirement variations. • Identify if countries have reciprocity agreements/provisions. • Apply additional requirements as per reciprocity agreements/provisions.	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Routing/itinerary of dangerous goods consignment • Application of reciprocity agreements/provisions

2) Identify if ERAP is required.			
	Subtask	Points to assess performance	Knowledge
i)	Consider ERAP requirement.	• Refer to section 7.1 and column 7 of Schedule 1. • Analyze if the consignment exceeds the ERAP limit. • If ERAP required: o Apply for ERAP;	• Classification of dangerous goods (general knowledge) • Understand the purpose of an ERAP (General Awareness) • Use and application of Schedules • Use of Part 7

		o Get permission from holder of ERAP to use their ERAP; o reconsider choice of MOC; or o separate the consignment. **See http://www.tc.gc.ca/eng/tdg/erap-menu-72.htm**	• Understand ERAP documentation requirements • Understand who can and how to activate an ERAP

c) Preparing dangerous goods			
1) To document.			
	Subtask	Points to assess performance	Knowledge
i)	Prepare and review dangerous goods shipping document.	• Specify when a shipping document is required. • Describe general requirements of a shipping document (e.g. info shall be legible, in indelible print and in English or French). • Identify information that shall be contained on a shipping document. • Complete a shipping document using the organizational method (e.g. by hand or computer). • Review the information on the document to ensure compliance. • Certify the information on the document. • Identify additional documentation required [for typical consignments by that consignor]. • Obtain the appropriate additional documents as necessary (e.g. print from computer system). • Specify the retention period for copies of documents. • Identify who shall retain copies of documents. • Retain shipping documents.	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Consignor responsibilities • Carrier responsibilities • Legibility and language criteria • Information on a shipping document • Additional Information on a shipping document • Consignor's certification • Keeping shipping document information

2) Apply MOC requirements.			
	Subtask	Points to assess performance	Knowledge
i)	Select MOC.	• Refer to Part 5 to select the appropriate standard (based on the class of dangerous goods, the mode of transport and the capacity of the MOC [small vs large]):	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Difference between small MOC and large MOC (capacity)

		o TP14850 for most small moc; o CAN/CGSB-43.146 (for IBC); o CAN/CGSB-43.151 (for explosives); o CAN/CGSB-43.123 (for aerosols and gas cartridges); o CSA B340 (for cylinders); o CSA B342 (for cylinders); o CAN/CGSB-43.125 (for infectious substances); o CSA B340 (for tubes); o CSA B342 (for tubes); o CSA B621 (highway and portable tanks); o CSA B622 (highway and portable tanks); o CSA B625 (highway and portable tanks); o CSA B626 (portable tanks); or o TP14877 (for rail); o *Packaging and Transport of Nuclear Substances Regulations* (for radioactive materials); o ICAO TI (for all dangerous goods transported by air); • Follow the requirements of the appropriate standard.	• Use and application of Part 5, including: o only MOC that is required or permitted may be used for the transportation of dangerous goods, o standardized MOC shall be in standard. • General principles of MOC, including: o MOC shall be designed, manufactured, qualified, loaded, unloaded, filled, secured, closed, and maintained so that, under normal conditions of transport, including handling and under all conditions of temperature, pressure and vibration that may be expected to occur, no condition or release of dangerous goods that could endanger public safety occurs or may reasonably be expected to occur. • Components of the certification safety marks • Use and application of the applicable standards and their requirements

3) Use of dangerous goods safety marks.			
	Subtask	Points to assess performance	Knowledge
i)	Identify and apply safety marks.	• Name marks, including: o shipping name, o UN number, o certification safety marks. • Name special/additional marks in case of biological substances, environmentally hazardous substances, inhalation hazard, elevated temperature, marine pollutant, fumigation sign, lithium batteries, limited quantities and excepted quantities. • Explain principles for marks, including: o legible and visible, o contrasting background, o durable, o size of marks, etc. • Explain principles for labels and placards, including: o size,	• Classification of dangerous goods (general) • Use and application of Schedules • Use of appendix to Part 4, illustration of dangerous goods safety marks • Visibility, legibility and colour of dangerous goods safety marks • Size and orientation of labels and placards • Use of dangerous goods safety marks (includes sections 4.1 to 4.3) • Consignor responsibilities • Carrier responsibilities • Ways to display UN number • Removing or changing the dangerous goods safety marks

		o durable, o colours, o text, o symbols, and o numbers. • Describe when and what safety marks are to be applied to MOC. • Explain who applies safety marks on MOC. • Explain basic principles for applying markings, including: o legible and visible, o contrasting background, o durable, etc. • explain basic principles for applying labels and placards, including: o square on point, o not overlapping, o not obscured, o contrasting background, o durable, o not folded and o location on MOC. • Complete information on radioactive material label, if applicable. • Apply safety marks.	If small means of containment: • Labels on small means of containment • Shipping name and technical name on a small MOC or on a tag • UN numbers on a small MOC or on a tag As applicable: • Safety marks on a consolidation bin • Class 7, radioactive material • Marine pollutant mark • Category B mark • Toxic – inhalation hazard • Lithium battery mark If large means of containment: • Placards on a large MOC • Subsidiary class placards on a MOC • UN numbers on a large MOC • Placards and UN numbers on a large MOC • Visibility of labels, placards and UN numbers on a large MOC • DANGER placard Exceptions to placarding large MOC, as applicable: • Placarding exemption for dangerous goods having a gross mass of 500 kg or Less • Class 1, explosives • Options for class 2, gases • Class 2, gases: placards for oxidizing gases • Class 2, gases: placards for UN1005, Anhydrous ammonia • Class 2, gases: placards for tube trailers • Placards and UN numbers on a compartmentalized large MOC • Elevated temperature sign • Fumigation sign

			• Marine pollutant mark • Toxic – inhalation hazard

4) Use of overpacks.			
	Subtask	Points to assess performance	Knowledge
i)	Use of overpacks.	• Ensure that the overpack contains packages of dangerous goods which are compatible. • Describe and secure packages within the overpack. • Assemble overpack. • Describe when safety marks are to be applied to overpack. • Mark the overpack with the word “OVERPACK” in 12 mm or taller letters. • Where an overpack has a capacity of 1.8 m^3, affix marks and labels to at least two opposite sides of overpack.	• Classification of dangerous goods (general) • Use and application of Schedules • Definition of overpack • Safety marks on an overpack • Refer to Table D.1 c) 3) i) for knowledge components for identifying and applying safety marks

5) Load large MOC (i.e. freight container, consolidation bin or ULD).			
	Subtask	Points to assess performance	Knowledge
i)	Identify securement requirements and apply loading and securement requirements.	• Inspect for damage or leakage. • Load and secure means of containment in/on a means of containment and secure means of containment in/on means of transport in such a way as to prevent, under normal conditions of transport, damage to the means of containment or to the means of transport that could lead to a release of the dangerous goods. • Load MOC containing dangerous goods which might react dangerously one with another away from each other which would allow interaction between them in the event of leakage. • Segregate MOC containing explosives as per the Table in section 5.7, if applicable. • Verify that the MOC does not have any dangerous goods adhered to it and it is free from corrosion, dents, gouges or other damage that may render them unsafe for transport.	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Application of general principles of Part 5, including: o only MOC that is required or permitted may be used for the transportation of dangerous goods; o standardized MOC shall be in standard. • Application of general principles of MOC, including: o MOC shall be designed, manufactured, qualified, loaded, unloaded, filled, secured, closed, and maintained so that, under normal conditions of transport, including handling and under all conditions of temperature, pressure and vibration that may be expected to occur, no condition or release of dangerous goods that could endanger public safety occurs or may reasonably be expected to occur. • Components of the certification safety marks (such as, container type, to which standard it was constructed and by

			whom, the date it was last requalified and by whom, the limits on how the container can be used) • Use and application of the given standard and its requirements • Application of safe handling and transportation practices for dangerous goods, including the characteristics of the dangerous goods • the proper use of any equipment used to handle (including loading) or transport the dangerous goods
ii)	Identify segregation, separation and vehicle/ compartment limitations.	• Identify MOC containing dangerous goods which might react dangerously one with another. • Identify separation limits in the case of radioactive materials. • Identify vehicle/compartment limits.	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Application of general principles of Part 5, including: o only MOC that is required or permitted may be used for the transportation of dangerous goods; o standardized moc shall be in standard. • Application of general principles of MOC, including: o MOC shall be designed, manufactured, qualified, loaded, unloaded, filled, secured, closed, and maintained so that, under normal conditions of transport, including handling and under all conditions of temperature, pressure and vibration that may be expected to occur, no condition or release of dangerous goods that could endanger public safety occurs or may reasonably be expected to occur. • Use and application of the applicable standards and their requirements • Use and application of section 5.7, Compatibility Groups (for explosives) and application of separation requirements of other regulations • Application of section 9.5, Maximum Net Explosives Quantity in a Road Vehicle

d) Transporting dangerous goods			
1) Load means of containment.			
	Subtask	Points to assess performance	Knowledge

i)	Verify or apply safety marks, as applicable.	• Verify that the safety marks are correct. • Describe when and what safety marks are to be applied to MOC. • Describe who applies safety marks on MOC. • Describe when safety marks shall be changed or removed. • Refer to Table D.1 c) 3) i) for basic principles on applying safety marks.	• Refer to Table D.1 c) 3) i) for knowledge components for identifying and applying safety marks
ii)	Load and secure dangerous goods in/on MOC.	• Inspect for damage or leakage. • Load and secure means of containment in/on a means of containment and secure means of containment in/on means of transport in such a way as to prevent, under normal conditions of transport, damage to the means of containment or to the means of transport that could lead to a release of the dangerous goods. • Load MOC containing dangerous goods which might react dangerously one with another away from each other which would allow interaction between them in the event of leakage. • Segregate moc containing explosives as per the Table in section 5.7, if applicable. • Verify that the MOC does not have any dangerous goods adhered to it and it is free from corrosion, dents, gouges or other damage that may render it unsafe for transport.	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Application of general principles of Part 5, including: o only MOC that is required or permitted may be used for the transportation of dangerous goods; o standardized MOC shall be in standard. • Application of general principles of moc, including: o MOC shall be designed, manufactured, qualified, loaded, unloaded, filled, secured, closed, and maintained so that, under normal conditions of transport, including handling and under all conditions of temperature, pressure and vibration that may be expected to occur, no condition or release of dangerous goods that could endanger public safety occurs or may reasonably be expected to occur. • Components of the certification safety marks (such as, container type, to which standard it was constructed and by whom, the date it was last requalified and by whom, the limits on how the container can be used) • Use and application of the given standard and its requirements • Use and application of section 5.7, Compatibility Groups (for explosives) • Purpose of segregation - incompatible dangerous goods when loaded together may result in undue hazards in the case of leakage, spillage, or any other accident.

2) Manage dangerous goods during transport.			
	Subtask	Points to assess performance	Knowledge

i)	Manage shipping document(s).	• Specify when a shipping document is required. • Obtain shipping document(s). • Verify shipping document(s) matches the consignment(s). • Identify when other documentation is required. • Identify where the shipping document is to be located.	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Consignor responsibilities • Carrier responsibilities • Legibility and language • Information on a shipping document • Additional information on a shipping document • Consignor's certification • Location of a shipping document during transport and storage • Keeping shipping document information
ii)	Ensure that safety marks remain on MOC.	• Verify that the safety marks remain on the MOC. • Describe when and what safety marks are to be applied to MOC. • Explain who applies safety marks on MOC. • Refer to Table D.1 c) 3) i) for principles of applying safety marks.	• Refer to Table D.1 c) 3) i) for knowledge components for identifying and applying safety marks

3) Unload dangerous goods.			
	Subtask	Points to assess performance	Knowledge
i)	Apply specific unloading considerations, as applicable.	• Inspect for damage or leakage. • Unload the means of containment from a means of transport in such a way as to prevent, under normal conditions of transport, damage to the means of containment or to the means of transport that could lead to a release of the dangerous goods. • Unload MOC containing dangerous goods which might react dangerously one with another away from each other which would allow interaction between them in the event of leakage. • Verify that the MOC does not have any dangerous goods adhered to it and it is free from corrosion, dents, gouges or other damage that may render it unsafe for transport.	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Application of general principles of Part 5, including: o only MOC that is required or permitted may be used for the transportation of dangerous goods; o standardized MOC shall be in standard. • Application of general principles of MOC, including: o MOC shall be designed, manufactured, qualified, loaded, unloaded, filled, secured, closed, and maintained so that, under normal conditions of transport, including handling and under all conditions of temperature, pressure and vibration that may be expected to occur, no condition or release of dangerous goods that could endanger public safety occurs or may reasonably be expected to occur. • Components of the certification safety marks (such as, container type, to which standard it was constructed and by

			whom, the date it was last requalified and by whom, the limits on how the container can be used) • Use and application of the given standard and its requirements • Purposes of segregation - incompatible dangerous goods when loaded together may result in undue hazards in the case of leakage, spillage, or any other accident.
ii)	Remove, replace or cover safety marks from the MOC, as applicable.	• Describe when safety marks shall be removed or covered. • Describe when and what safety marks need to be changed due to change of dangerous goods. • Refer to Table D.1 c) 3) i) for principles of applying safety marks.	• Refer to Table D.1 c) 3) i) for knowledge components for identifying and applying safety marks

e) Responding to an emergency and activation of an ERAP (can be triggered anywhere along DG supply chain)			
1) Respond to emergency.			
	Subtask	Points to assess performance	Knowledge
i)	Activate ERAP, if applicable.	• Explain when and how an ERAP shall be activated. • Locate ERAP information on shipping document. • Be able to contact ERAP provider using this information.	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Required information on the shipping document, TDG Part 3 • ERAP principles, if applicable
ii)	Mitigate/report emergency.	• Mitigate, if possible and safe to do so. • Report emergency, when required.	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Use and application of the Table to section 8.2 (including: definition of release and anticipated release, quantities in table, and what endangers, or could endanger, public safety) • The information to be included in an emergency report: • Who to contact for emergency reports - the local authority that is responsible for responding to emergencies at the geographic location • Safe handling and transportation practices for dangerous goods, including the characteristics of the dangerous goods • The reasonable emergency measures to take to reduce or eliminate any danger to public safety that results from a release of the dangerous goods

iii)	Report release or anticipated release and complete 30 day follow up report.	• Report release or anticipated release, when required. • Evaluate if the release meets the criteria in section 8.4. • Complete 30 day follow-up report, when required.	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Use and application of the criteria in section 8.4 to determine if report is required • The information to be included in an release or anticipated release report • Who to contact for release or anticipated release reports • Who to contact for 30 day follow-up reports
iv)	Report loss or theft.	• Evaluate if the lost or stolen dangerous goods meets the criteria in section 8.16. • Report loss or theft, when required. • Notify if the dangerous goods are found.	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • Which dangerous goods (and their quantities) these reports apply to • When to report • Who to contact in case of lost or stolen dangerous goods • What to report
v)	Report unlawful interference.	• Determine if the dangerous goods were unlawfully interfered with. • Report unlawful interference.	• Classification of dangerous goods (general knowledge) • Use and application of Schedules • what is meant by “unlawful interference” • who to contact for unlawful interference reports

ANNEX E

(*normative*)

Competency for the transportation of dangerous goods by air

E.1 Use Table E.1 of tasks and subtasks as criteria to consider when assessing the competencies of persons performing those tasks or subtasks. Choose those criteria that are applicable to the tasks the person is responsible for. You may need to create additional criteria where appropriate. For competency to be achieved, both performance and knowledge shall be assessed at a level appropriate to the person's tasks that they have been assigned.

E.2 Table E.1 provides performance related to the ability to demonstrate that the person can perform the tasks related to the criteria item in a manner that is compliant with the regulations (e.g., the person knows how to do the task competently).

E.3 Knowledge relates to understanding the applicable criteria and to explain how that criteria applies to the tasks the person performs to be in compliance with the regulations (e.g., follow the criteria so their work is in compliance).

NOTE 1 For the purposes of this document, the following words/terms are interchangeable:

a) "MOC" and "package";

b) "consignor" and "shipper";

c) "carrier" and "operator"; and

d) "shipping document", "dangerous goods transport document" and "shipper's declaration".

NOTE 2 For the purposes of this document, safety marks include hazard labels and handling labels.

NOTE 3 The information contained in Table E.1 is not presented in the order the tasks are completed. The order is irrelevant as long as the requirements are met.

Table E.1 Competency for the transportation of dangerous goods by air

a) Classifying dangerous goods			
1) Evaluate substances or articles against classification criteria, as applicable.			
	Subtask	Points to assess performance	Knowledge
i)	Identify if it is dangerous goods. If it is dangerous goods, identify class/division, packing group (if applicable), shipping name and UN number.	1. Verify that the substance or article is listed by name in Table 3-1 of the ICAO TI: • if listed, take the class/division, the subsidiary hazard(s) and packing group (when applicable) from this list; or • if not listed, verify that it meets the criteria in Part 2 of the TDGR for inclusion in at least one of the 9 classes of dangerous goods. 2. Choose the most appropriate way to determine that a substance/article is dangerous goods: • When relying on the manufacturer's classification, consignor shall review classification to confirm it is appropriate. • Use the classification o determined by Natural Resources Canada for explosives; o according to *Packaging and Transport of Nuclear Substances Regulations* for radioactive material; o determined by the Public Health Agency of Canada or the Canadian Food Inspection Agency for infectious substances (permissive). a. Verify that the substance or article is listed by name in Table 3-1 of the ICAO TI: o If found – use that shipping name and corresponding data (UN number, class/division and packing group/category).	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Use and application of Part 2 and Part 12 of the TDGR

		○ If not found, find generic shipping name with appropriate class/division, subsidiary class and packing group, use that shipping name and corresponding data (UN number, class and packing group). • For a mixture/solution composed of one substance identified by name in Table 3-1 of the ICAO TI, assign the UN number and shipping name for that substance, unless ○ the mixture/solution is identified by name in Table 3-1 of the ICAO TI; ○ the name and description of the substance named only applies to the pure substance; ○ the class/division, subsidiary hazard(s) physical state or packing group of the solution/mixture is different from the substance name in Table 3-1 of the ICAO TI; or ○ the hazard characteristics and properties of the mixture/solution necessitates different emergency response measures than from those required by the substance in Table 3-1 of the ICAO TI. • For a mixture/solution composed of one substance identified by name in Table 3-1 of the ICAO TI, assign the UN number and shipping name for that substance. • For a mixture/solution with more than one class/division or packing group: ○ determine class/division and packing group; ○ use precedence of hazard characteristics section (Part 2;4.1 of the ICAO TI to determine primary class/division, subsidiary class(es)/division(s) and packing group; ○ refer to Table 3-1 of the ICAO TI and select the shipping name that most precisely describes the dangerous goods and that is most consistent with the class/division and the packing group.	
ii)	Apply special provision(s).	• Identify applicable special provisions. • Assess applicable special provisions. • Apply applicable special provisions.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI

iii)	Identify if it is forbidden for transport under any circumstances.	• Verify columns 2 and 3 of Table 3-1 of the ICAO TI for the word "Forbidden". • Verify Table 3-2 of the ICAO TI for special provisions.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI

b) Determining shipping requirements			
1) Identify packing options.			
	Subtask	Points to assess performance	Knowledge
i)	Consider exemptions - limited quantities.	• Refer to Part 3;4 of the ICAO TI. • Assess if the dangerous goods can be shipped under conditions of the exception (i.e. only applies to certain classes/divisions). • Assess and apply conditions related to exception: o Refer to column 10 of Table 3-1 of the ICAO TI for the "Y" packing instruction for the maximum permitted quantity of dangerous goods per inner packaging and apply MOC requirements (refer to Table E.1 c) 2)). o Refer to column 11 of Table 3-1 of the ICAO TI for the maximum net quantity of dangerous goods per package. o Apply dangerous goods safety marks (refer to Table E.1 b) 3) i)). o Prepare documentation (refer to Table E.1 c) 1) i)).	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Use of packing instruction(s) • General provisions for packaging • Application of provisions in Part 3;4 of the ICAO TI • Application of safety marks (refer to Table E.1 b) 3) i)) • Preparation of documentation (refer to Table E.1 c) 1) i)
ii)	Consider exemptions - *de minimis* and excepted quantities.	• Refer to Part 3;5 of the ICAO TI. • Assess if the dangerous goods can be shipped under conditions of the exception (i.e. only applies to certain classes/divisions). • Assess and apply conditions related to exception o Refer to column 9 of Table 3-1 of the ICAO TI for the "E" code. o Convert E code by using Table 3-3 of the ICAO TI. o Identify the maximum permitted quantity of dangerous goods per inner and outer packaging by using Table 3-3 of the ICAO TI.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • General provisions for packaging • Application of provisions in Part 3;5 of the ICAO TI

		o Select packaging according to Part 3;5.2 of the ICAO TI. o Perform tests for packages according to Part 3;5.3 of the ICAO TI. o Display marks as per Part 3;5.4 of the ICAO TI.	
iii)	Consider exemptions – special cases and exemptions.	• Refer to Part 1 of the TDGR. • Assess special case for specific modes of transport and dangerous goods /classes of dangerous goods. • Apply conditions related to special case. • Refer to Part 12 of the TDGR. • Assess exemptions for specific dangerous goods /classes of dangerous goods. • Apply conditions related to exemption.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Location of special cases/exemptions • Application of the special case/exemption provision
iv)	Consider special provisions.	• Identify applicable special provisions. • Assess applicable special provisions. • Apply applicable special provisions.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI
v)	Consider quantity limitations per package.	• Identify the maximum net quantity per package by passenger aircraft, as applicable. • Identify the maximum net quantity per package by cargo aircraft only, as applicable.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI
vi)	Consider State and operator variations.	• Identify the final destination and transiting States. • Verify State and operator variations. • Comply with State and operator variations.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Routing/itinerary of dangerous goods consignment • Verification of State variations (Attachment 3, Chapter 1) of the ICAO TI • Verification of Operator variations (Attachment 3, Chapter 2) of the ICAO TI • Application of State and operator variations

2) Identify if ERAP is required.			
	Subtask	Points to assess performance	Knowledge
i)	Consider ERAP requirement.	• Refer to section 7.1 and column 7 of Schedule 1 of the TDGR. • Analyze if the consignment exceeds the ERAP limit. • If ERAP required: o Apply for ERAP;	• Classification of dangerous goods (general knowledge) • Understand the purpose of an ERAP (General Awareness) • Use and application of Schedules of the TDGR • Use of Part 7 of the TDGR

		o Get permission from holder of ERAP to use their ERAP; o Reconsider choice of MOC; or o Separate the consignment. See http://www.tc.gc.ca/eng/tdg/erap-menu-72.htm	• Understand ERAP documentation requirements • Understand who can and how to activate an ERAP

c) Preparing a dangerous goods consignment			
1) To Document.			
	Subtask	Points to assess performance	Knowledge
i)	Prepare dangerous goods shipping document and other transport documents.	• Specify when a shipping document is required. • Describe general requirements of a shipping document (e.g. info shall be legible, in indelible print and in English or French). • Identify information that shall be contained on a shipping document. • Complete a shipping document using the organizational method (e.g. by hand or computer). • Review the information on the document to ensure compliance. • Certify the information on the shipping document. • Identify additional documentation required. • Obtain the appropriate additional documents as necessary (e.g. print from computer system). • Specify the retention period for documents. • Identify who shall retain documents. • Retain documents.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Consignor responsibilities • Carrier responsibilities • Legibility and language criteria • Information on a shipping document • Additional Information on a shipping document • Consignor's certification • Keeping shipping document information • Air waybill, equivalency certificates, approvals and exemption

2) Apply MOC requirements.			
	Subtask	Points to assess performance	Knowledge
i)	Select MOC	For Class 2, gases: • Select the appropriate standard:	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Use and application of Part 5 of TDGR including:

		o CAN/CGSB-43.123 (for aerosols and gas cartridges); o CSA B340 (for cylinders); o CSA B342 (for cylinders); • Follow the requirements of the appropriate standard. For other classes/divisions: • Refer to column 10 (or 12 if cargo aircraft only) of Table 3-1 of the ICAO TI for the packing instruction number. • Refer to column 11 (or 13 if cargo aircraft only) of Table 3-1 of the ICAO TI for the maximum net quantity of dangerous goods per package. • Refer to the packing instruction number. • Consider constraints of packing instructions. • Select appropriate packaging materials (such as absorbent, cushioning, etc.). • Assemble package.	o only MOC that is required or permitted may be used for the transportation of dangerous goods o standardized MOC shall be in standard • General principles of moc, including: o MOC shall be designed, manufactured, qualified, loaded, unloaded, filled, secured, closed, and maintained so that, under normal conditions of transport, including handling and under all conditions of temperature, pressure and vibration that may be expected to occur, no condition or release of dangerous goods that could endanger public safety occurs or may reasonably be expected to occur. • Components of the certification safety marks • Use and application of the applicable standards and their requirements, if applicable • Use and application of the applicable packing instruction

3) Use of dangerous goods safety marks.			
	Subtask	Points to assess performance	Knowledge
i)	Identify and apply safety marks.	• Name marks, including: o shipping name, o UN number, o certification safety marks. • Name special/additional marks/labels in case of biological substances, environmentally hazardous substances, magnetized material, cargo aircraft only, package orientation, cryogenic liquid, keep away from heat, lithium batteries, limited quantities and excepted quantities. • Explain principles for marks, including: o legible and visible, o contrasting background, o durable, o size of marks, etc. • Explain principles for labels and placards, including: o size, o durable,	• Classification of dangerous goods (general) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Use of Figures in Parts 5;2 and 5;3 (illustrations of marks and labels) of the ICAO TI • Visibility, legibility and colour of marks and labels • Size and orientation of marks, labels and placards • Consignor responsibilities • Carrier responsibilities • Removing the dangerous goods safety marks

		○ colours, ○ text, ○ symbols, and ○ numbers. • Describe when and what safety marks are to be applied to MOC. • Explain who applies safety marks on MOC. • Explain basic principles for applying markings, including: ○ legible and visible, ○ contrasting background, ○ durable, etc. • Explain basic principles for applying labels and placards, including: ○ square on point, ○ not overlapping, ○ not obscured, ○ contrasting background, ○ durable, ○ not folded, and ○ location on MOC. • Complete information on radioactive material label, if applicable. • Apply safety marks.	

4) Use of overpacks.			
	Subtask	Points to assess performance	Knowledge
i)	Prepare an overpack.	• Ensure that the overpack contains packages of dangerous goods which are compatible. • Secure packages within the overpack. • Describe when safety marks are to be applied to overpack. • Mark the overpack with the word “OVERPACK” in 12 mm letters (minimum).	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Use of Figures in Parts 5;2 and 5;3 (illustrations of marks and labels) of the ICAO TI • Definition of overpack • Securement of packages within the overpack • Use of applicable packing instruction • Application of segregation Table 7-1 of the ICAO TI

d) Processing and accepting dangerous goods			
1) Review documentation.			
	Subtask	Points to assess performance	Knowledge
i)	Review documentation.	• Specify when a shipping document is required. • Describe general requirements of a shipping document (e.g. info shall be legible, in indelible print and in English or French). • Identify information that shall be contained on a shipping document. • Review the information on the shipping document to ensure compliance. • Review additional documentation required (e.g. air waybill, equivalency certificate, exemption, approval). • Specify the retention period for documents. • Verify State/operator variations.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Consignor responsibilities • Carrier responsibilities • Legibility and language criteria • Information on a shipping document • Additional Information on a shipping document • Consignor's certification • Keeping shipping document information • Retention of documents or information • Air waybill, equivalency certificates, approvals and exemption

2) Review packages.			
	Subtask	Points to assess performance	Knowledge

i)	Verify safety marks.	• Name marks, including:
		  o shipping name,
		  o UN number,
		  o certification safety marks.
		• Name special/additional safety marks in case of biological substances, environmentally hazardous substances, magnetized material, cargo aircraft only, package orientation, cryogenic liquid, keep away from heat, lithium batteries, limited quantities and excepted quantities.
		• Explain principles for marks, including:
		  o legible and visible,
		  o contrasting background,
		  o durable,
		  o size of marks, etc.
			• Classification of dangerous goods (general)
			• Use and application of Tables 3-1 and 3-2 of the ICAO TI
			• Use of Figures in Parts 5;2 and 5;3 (illustrations of marks and labels) of the ICAO TI
			• Visibility, legibility and colour of marks and labels
			• Size and orientation of marks, labels and placards
			• Consignor responsibilities
			• Carrier responsibilities

		• Explain principles for labels and placards, including: o size, o durable, o colours, o text, o symbols, and o numbers • Describe when and what safety marks are to be applied to MOC. • Explain who applies safety marks on MOC. • Explain basic principles for applying marks, including: o legible and visible, o contrasting background, o durable, etc. • Explain basic principles for applying labels and placards, including: o square on point, o not overlapping, o not obscured, o contrasting background, o durable, o not folded, and o location on MOC. • Verify information on radioactive material label, if applicable.	
ii)	Verify package type and condition.	For Class 2, gases: • select the appropriate standard: o CAN/CGSB-43.123 (for aerosols and gas cartridges); o CSA B340 (for cylinders); o CSA B342 (for cylinders); • Follow the requirements of the appropriate standard. For other classes/divisions: • Refer to column 10 (or 12 if cargo aircraft only) of Table 3-1 of the ICAO TI for the packing instruction number. • Refer to column 11 (or 13 if cargo aircraft only) of Table 3-1 of the ICAO TI for the maximum net quantity of dangerous goods per package.	• Use and application of Part 5 of the TDGR, including: o only MOC that is required or permitted may be used for the transportation of dangerous goods; o standardized MOC shall be in standard. • General principles of MOC, including: o MOC shall be designed, manufactured, qualified, loaded, unloaded, filled, secured, closed, and maintained so that, under normal conditions of transport, including handling and under all conditions of temperature, pressure and vibration that may be expected to occur, no condition or release of dangerous goods that could endanger public safety occurs or may reasonably be expected to occur. • Components of the certification safety marks

		• Refer to the packing instruction number. • Consider constraints of packing instructions.	• Use and application of the applicable standards and their requirements, if applicable • Use and application of the applicable packing instruction
iii)	Consider State and operator variations.	• Identify the final destination and transiting States. • Verify State and operator variations. • Comply with State and operator variations.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Routing/itinerary of dangerous goods consignment • Verification of State variations (Attachment 3, Chapter 1) of the ICAO TI • Verification of Operator variations (Attachment 3, Chapter 2) of the ICAO TI • Application of State and operator variations

3) Complete acceptance procedures.			
	Subtask	Points to assess performance	Knowledge
i)	Complete acceptance procedures.	• Complete acceptance checklist. • Provide consignment information for load planning. • Retain documents as required.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Use of acceptance checklist • Purpose of acceptance checklist • Keeping shipping document information as per section 3.11 of the TDGR • Retention of documents or information (e.g. checklists and air waybills)

e) Managing dangerous goods - load planning			
1) Load planning.			
	Subtask	Points to assess performance	Knowledge
i)	Identify segregation, separation and aircraft/ compartment limitations.	• Identify MOC containing dangerous goods which might react dangerously one with another. • Identify separation limits in the case of radioactive materials. • Identify compartment limits.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Application of general principles of Part 5 of the TDGR, including: o only MOC that is required or permitted may be used for the transportation of dangerous goods;

			o standardized MOC shall be in standard. • Application of general principles of MOC, including: o MOC shall be designed, manufactured, qualified, loaded, unloaded, filled, secured, closed, and maintained so that, under normal conditions of transport, including handling and under all conditions of temperature, pressure and vibration that may be expected to occur, no condition or release of dangerous goods that could endanger public safety occurs or may reasonably be expected to occur. • Use and application of Table 7-1 of the ICAO TI for segregation between packages • Use and application of Table 7-2 of the ICAO TI for separation of explosive substances and articles • Use and application of Tables 7-3 and 7-4 of the ICAO TI for separation distance for packages of radioactive material
2) Prepare ULD.			
	Subtask	Points to assess performance	Knowledge
i)	Apply stowage requirements (e.g. segregation, separation, orientation securing and protecting from damage.	• Inspect for damage or leakage. • Load and secure means of containment in/on a means of containment according to the load plan in such a way as to prevent, under normal conditions of transport, damage to the means of containment that could lead to a release of the dangerous goods.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Application of general principles of Part 5 of the TDGR, including: o only MOC that is required or permitted may be used for the transportation of dangerous goods; o standardized MOC shall be in standard. • Application of general principles of MOC, including: o MOC shall be designed, manufactured, qualified, loaded, unloaded, filled, secured, closed, and maintained so that, under normal conditions of transport, including handling and under all conditions of temperature, pressure and vibration that may be expected to occur, no condition or release of dangerous goods that could endanger public safety occurs or may reasonably be expected to occur. • Components of the certification safety marks (such as, container type, to which standard it was constructed and

			by whom, the date it was last requalified and by whom, the limits on how the container can be used) • Application of safe handling and transportation practices for dangerous goods, including the characteristics of the dangerous goods • Proper use of any equipment used to handle (including loading) or transport the dangerous goods • Purpose of segregation - incompatible dangerous goods when loaded together may result in undue hazards in the case of leakage, spillage, or any other accident.
ii)	Complete and apply ULD tags when applicable.	• Explain when ULD tags are required. • Describe characteristics of ULD tags.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI
3) Load aircraft.			
	Subtask	Points to assess performance	Knowledge
i)	Apply stowage requirements (e.g. segregation, separation, orientation securing and protecting from damage.	• Inspect for damage or leakage. • Load and secure means of containment in the aircraft according to load plan in such a way as to prevent, under normal conditions of transport, damage to the means of containment or to the aircraft that could lead to a release of the dangerous goods. • Confirm on NOTOC that there is no evidence of any damage or leakage.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Application of general principles of Part 5 of the TDGR, including: o only MOC that is required or permitted may be used for the transportation of dangerous goods; o standardized MOC shall be in standard. • Application of general principles of MOC, including: o MOC shall be designed, manufactured, qualified, loaded, unloaded, filled, secured, closed, and maintained so that, under normal conditions of transport, including handling and under all conditions of temperature, pressure and vibration that may be expected to occur, no condition or release of dangerous goods that could endanger public safety occurs or may reasonably be expected to occur. • Components of the certification safety marks (such as, container type, to which standard it was constructed and by whom, the date it was last requalified and by whom, the limits on how the container can be used)

			• Purpose of segregation - incompatible dangerous goods when loaded together may result in undue hazards in the case of leakage, spillage, or any other accident.

4) Issue NOTOC.			
	Subtask	Points to assess performance	Knowledge
i)	Prepare NOTOC.	• Specify when a NOTOC is required. • Describe general requirements of a NOTOC. • Identify information that shall be contained on NOTOC. • Specify the retention period for NOTOC. • Identify who shall retain NOTOC. • Retain NOTOC.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Information on a shipping document • Information on a NOTOC • NOTOC retention requirement • NOTOC shall be on dedicated form as per section 12.3 of the TDGR
ii)	Provide NOTOC to loading personnel, pilot-in-command and flight operations officer/flight dispatcher.	• Specify when a NOTOC is required. • Describe general requirements of a NOTOC. • Identify information that shall be contained on NOTOC. • Specify the retention period for NOTOC. • Identify who shall receive and retain NOTOC. • Retain NOTOC.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Information on a shipping document • Information on a NOTOC • NOTOC retention requirement • NOTOC shall be on dedicated form as per section 12.3 of the TDGR

1) Manage dangerous goods pre- and during flight.			
	Subtask	Points to assess performance	Knowledge
i)	Interpret NOTOC.	• Describe general requirements of a NOTOC. • Identify information contained on NOTOC. • Describe the use of a NOTOC.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Information on a NOTOC
ii)	Apply procedures in the event of an emergency.	• Inform flight operations officer/flight dispatcher/air traffic control in the event of an emergency. • Inform emergency services of the dangerous goods on board in the event of an emergency.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Use and application of Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods • Use and application of internal procedures

2) Unloading aircraft.			
	Subtask	Points to assess performance	Knowledge
i)	Apply specific unloading considerations.	• Inspect for damage or leakage. • Unload the means of containment from the aircraft in such a way as to prevent, under normal conditions of transport, damage to the means of containment or to the aircraft that could lead to a release of the dangerous goods. • Unload MOC containing dangerous goods which might react dangerously one with another away from each other which would allow interaction between them in the event of leakage.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Application of general principles of Part 5 of the TDGR, including: o only MOC that is required or permitted may be used for the transportation of dangerous goods; o standardized MOC shall be in standard. • Application of general principles of MOC, including: o MOC shall be designed, manufactured, qualified, loaded, unloaded, filled, secured, closed, and maintained so that, under normal conditions of transport, including handling and under all conditions of temperature, pressure and vibration that may be expected to occur, no condition or release of dangerous goods that could endanger public safety occurs or may reasonably be expected to occur. • Components of the certification safety marks (such as, container type, to which standard it was constructed and by whom, the date it was last requalified and by whom, the limits on how the container can be used) • Use and application of the given standard and its requirements • Purposes of segregation - incompatible dangerous goods when loaded together may result in undue hazards in the case of leakage, spillage, or any other accident.

h) Activating an ERAP			
1) Respond to emergency.			
	Subtask	Points to assess performance	Knowledge
i)	Activate ERAP, if applicable.	• Explain when and how an ERAP shall be activated.	• Classification of dangerous goods (general knowledge)

		• Locate ERAP information on shipping document. • Be able to contact ERAP provider using this information.	• Use and application of Schedules of TDGR and Tables 3-1 and 3-2 of the ICAO TI • Required information on the shipping document regarding ERAP, as per subsection 3.6(1) of TDGR • ERAP principles, if applicable

i) Responding to an emergency			
1) Respond to emergency.			
	Subtask	Points to assess performance	Knowledge
i)	Mitigate dangerous goods accident or incident.	• Mitigate, if possible and safe to do so.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • The safe handling and transportation practices for dangerous goods, including the characteristics of the dangerous goods • The reasonable emergency measures to take to reduce or eliminate any danger to public safety that results from a dangerous goods accident or incident
ii)	Report dangerous goods accident or incident and Complete 30 day follow up report.	• Report dangerous goods accident or incident, when required. • Complete 30 day follow-up report.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Use and application of relevant sections in Part 8 of the TDGR • The information to be included in dangerous goods accident or incident report • Who to report dangerous goods accidents or incidents • The information to be included in the 30 day follow-up report • Who to contact for 30 day follow-up report
iii)	Report Undeclared or Misdeclared Dangerous Goods.	• Report undeclared or misdeclared dangerous goods, when required.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Use and application of relevant sections in Part 8 of the TDGR • The information to be included in an undeclared or misdeclared dangerous goods report • Who to report undeclared or misdeclared dangerous goods
iv)	Report Dangerous Goods Occurrence.	• Report dangerous goods occurrence, when required.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Use and application of relevant sections in Part 8 of the TDGR • The information to be included in a dangerous goods occurrence report

			• Who to report a dangerous goods occurrence
v)	Report loss or theft.	• Evaluate if the lost or stolen dangerous goods meets the criteria in section 8.16 of the TDGR. • Report loss or theft, when required. • Notify if the dangerous goods are found.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • Which dangerous goods (and their quantities) these reports apply to • When and what to report • Who to contact in case of lost or stolen dangerous goods
vi)	Report unlawful interference.	• Determine if the dangerous goods were unlawfully interfered with. • Report unlawful interference.	• Classification of dangerous goods (general knowledge) • Use and application of Tables 3-1 and 3-2 of the ICAO TI • what is meant by “unlawful interference” • who to contact for unlawful interference reports

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