



WORKING PAPER

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

Montréal, 15 to 19 October 2012

Agenda Item 6: Resolution, where possible, of the non-recurrent work items identified by the Air Navigation Commission or the panel

COMPETENCY FRAMEWORK FOR OPERATORS

(Presented by T. Muller)

SUMMARY

This paper presents the interim results of the working group on Training on developing a competency framework for personnel of operators involved in the transport of dangerous goods.

Action by the DGP-WG is in paragraph 3.

1. INTRODUCTION

1.1 As a follow-up to the development of performance standards and requirements for competency-based training of State employees, shippers and freight forwarders, the DGP agreed to develop specific performance standards and requirements for employees of operators which are authorized to carry dangerous goods by air.

1.2 The working group on Training that was established by the DGP was requested to develop a proposal.

2. THE WORKING GROUP ON TRAINING

2.1 The training working group consisted of:

Nicole Sabourin-Barrette	ICAO Secretariat
Katherine Rooney	ICAO Secretariat
Lynn McGuigan	ICAO Secretariat
Geoff Leach	DGP member nominated by the United Kingdom
Brendan Sullivan	IATA
Seok Won Park	DGP member nominated by Korea
Sung Il Kang	Advisor Korea
Paul King	United Arab Emirates
Janet McLaughlin	DGP member nominated by the US
Thomas Kenny	Advisor US
Micheline Paquette	DGP member nominated by Canada
Donna MacLean	Advisor Canada
Bruno Carrara	DGP member nominated by Brazil
João Rafael de Andrade Colonese	Advisor Brazil
Joseph Le Tonquèze	DGP member nominated by France
Teun Muller	DGP member nominated by the Netherlands
Adrian Tusek	DGP member nominated by Australia
Stephanie Glover	Canada Post
Randy Miskanic	USPIS
Ebbe Andersen	UPU Denmark
Akhilesh Mathur	UPU Switzerland

2.2 The working group on training initiated its work in August 2012 using current ICAO documentation and common practices in some of the participating States. An initial document was drafted with a competency framework for operators.

2.2.3 The training working group met in Montreal from 13 to 16 August to review the initial draft document in detail and amend it as appropriate. During this meeting conference calls were held with Adrian Tusek, DGP member nominated by Australia, in order to get his specific input and views on the principles applied in the document.

2.3 During the development process, the ICAO secretariat kept monitoring the consistency with the principles established in the *Procedures for Air Navigation Services – Training* (PANS-TRG, Doc 9868). As done for the other competency based frameworks, the training group left out “generic competencies” of personnel at this stage of development since the issue of what way and to what extent to include these in the competency frameworks is still under discussion.

2.3.1 Due to time constraints, the working group was not able to finalize the framework when they convened in August.

2.3.2 Interim results of the working group on developing a competency framework for personnel of operators involved in the transport of Dangerous goods are presented in the appendix to this working paper.

2.3.3 These interim results are for your consideration. Your comments are appreciated and will be incorporated in the final version of the document. It is expected that a final document will be presented at the next meeting of the DGP Working Group of the Whole.

3. **ACTION BY THE DGP-WG**

3.1 The DGP-WG is invited to:

- a) note the progress made by the working group on training; and
- b) review the attached document “Competency-based Framework for Operators” as presented in the appendix to this working paper and provide comments, as appropriate.

APPENDIX

COMPETENCY-BASED FRAMEWORK FOR OPERATORS

1. INTRODUCTION

1.1 The objective of ICAO in publishing this document is to provide guidance to Contracting States to implement the oversight of competency-based dangerous goods training and assessment for staff of operators. This guidance has been prepared by the Dangerous Goods Panel (DGP). It includes a basic competency framework for the uniform implementation of training required for operators to ensure compliance with their responsibilities with respect to Annex 18 — *The Safe Transport of Dangerous Goods by Air* and the detailed specifications in the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284). Requirements for the establishment of training programmes of operators are contained in the Technical Instructions, Part 1, Chapter 4.

[Text on the relationship between Annex 6 and Annex 18 will be developed.]

1.2 In order to harmonize performance standards of operators, there is a need to develop a generic competency framework for their employees involved in the acceptance and transport of dangerous good by air. In turn, this will have a positive impact on the specific employee's function and the ability of the individual to perform the job successfully to the required standards.

2. RELATIONSHIP BETWEEN THE TRAINING CURRICULA CONTAINED IN THE TECHNICAL INSTRUCTIONS AND THIS DOCUMENT

In the *Procedures for Air Navigation Services — Training* (PANS-TRG, Doc 9868), competency is defined as a combination of skills, knowledge and attitudes required to perform a task to the prescribed standard. Tables 1-4 and 1-5 of the Technical Instructions provide a list of knowledge items that are fundamental in developing a training programme necessary to achieve the required competencies.

3. TERMINOLOGY

For the purpose of this document, the following terminology applies:

Air operator certificate (AOC). A certificate authorizing an operator to carry out specified commercial air transport operations.

Appropriate national authority. Any authority designated, or otherwise recognized, by a State to perform specific functions related to provisions contained in the Technical Instructions.

Cargo aircraft. Any aircraft, other than a passenger aircraft, which is carrying goods or property.

Competency. A combination of skills, knowledge and attitudes required to perform a task to the prescribed standard.

Competency-based training and assessment. Training and assessment that are characterized by a performance orientation, emphasis on standards of performance and their measurement, and the development of training to the specified performance standards.

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.

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

Consignment. One or more packages of dangerous goods accepted by an operator from one shipper at one time and at one address, receipted for in one lot and moving to one consignee at one destination address.

Dangerous goods. Articles or substances which are capable of posing a risk to health, safety, property or the environment and which are shown in the list of dangerous goods in the Technical Instructions, or which are classified according to the Technical Instructions.

Dangerous goods accident. An occurrence associated with and related to the transport of dangerous goods by air which results in fatal or serious injury to a person or major property or environmental damage.

Dangerous goods incident. An occurrence, other than a dangerous goods accident, associated with and related to the transport of dangerous goods by air, not necessarily occurring on board an aircraft, which results in injury to a person, property or environmental damage, fire, breakage, spillage, leakage of fluid or radiation or other evidence that the integrity of the packaging has not been maintained. Any occurrence relating to the transport of dangerous goods which seriously jeopardizes the aircraft or its occupants is also deemed to be a dangerous goods incident.

[Dangerous goods event. For the purpose of this document, a dangerous goods event is a dangerous goods incident, dangerous goods accident, the discovery of an accepted postal item that contains dangerous not permitted in the mail, or the discovery of a postal item that contains permissible dangerous goods which are improperly packaged, marked or labelled.]

Operator. A person, organization or enterprise engaged in or offering to engage in an aircraft operation.

Operator variation. A notification to ICAO of the adoption by an operator of more restrictive requirements than the Technical Instructions.

Overpack. An enclosure used by a single shipper to contain one or more packages and to form one handling unit for convenience of handling and stowage.

Note.— A unit load device is not included in this definition.

Package. The complete product of the packing operation, consisting of the packaging and its contents prepared for transport.

Packaging. One or more receptacles and any other components or materials necessary for the receptacles to perform their containment and other safety functions.

Note.— For radioactive material, see 2;7.1.3.

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.

Shipper. For the purpose of this document, a person, organization or enterprise undertaking any of the shipper's responsibilities of Part 5 of the Technical Instructions.

State variation. A notification to ICAO of the adoption by a State of more restrictive requirements than the Technical Instructions.

Technical Instructions. The *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284), approved and issued periodically in accordance with the procedure established by the ICAO Council.

Unit load device. Any type of freight container, aircraft container, aircraft pallet with a net or aircraft pallet with a net over an igloo.

Note 1.— An overpack is not included in this definition.

Note 2.— A freight container for radioactive material is not included in this definition (see 2;7.1.3).

4. SCOPE OF THE COMPETENCY FRAMEWORK

The scope of the competency framework concerns the responsibilities of operators in accordance with the Convention on International Civil Aviation:

- The State is responsible for implementing an oversight system to determine compliance with Annex 18; and
- The application of the basic principles for a competency-based approach determines the performance level for staff of operators in carrying out their safety critical function to meet their responsibilities as defined by Annex 18.

[The details of the competency framework are based on common practices as applied by States on training, operational procedures, safety oversight.] [Text needs to be clarified]

5. STRUCTURE OF THE DOCUMENT

The basic structure of the competency framework consists of three levels:

- a) competency units;
- b) competency elements; and
- c) performance criteria.

Further detailing at these three levels is derived from the relevant operator's responsibilities at operational and management levels, and the analysis of related tasks as implemented by States. Responsibilities or tasks, which operators actually perform, will determine which competency elements apply.

Taking into account the above, the competency framework for operators is based on competency units related to specific activities of operators:

- a) competencies applicable to all designated postal operators:
 - competencies and personal attributes; and
 - general awareness, knowledge and skills;
- b) competency units related to specific functions of operators:
 - evaluate the offered shipment
 - perform acceptance check
 - handle dangerous goods
 - inspect packages and ULDs prior to loading and after unloading
 - provide information
 - prevent unauthorized dangerous goods cargo from being transported

5. CORE COMPETENCES APPLICABLE TO ALL OPERATORS

The following paragraphs are intended to identify the competency elements and related performance criteria related to the specific activities conducted by operators involved in the transport of dangerous goods at an operational level. Core competencies have not yet been identified for operators in this document. This will be done once the work of the Next Generation of Aviation Professionals Task Force progresses its work and provides a standardized basis from which to work.

6. COMPETENCIES RELATED TO SPECIFIC ACTIVITIES OF AN OPERATOR

[The carriage by an operator of dangerous goods [in cargo] will be subject to approval by the appropriate national authorities.] Some tasks related to the transport of dangerous goods may be assigned to an entity acting on behalf of the operator. However, it remains the operator's responsibility to ensure that all of the relevant air transport requirements are complied with, such as training.

The transport of dangerous goods is recognized as an integral part of a State's overall safety oversight program. Operators shall take the necessary measures to achieve compliance with Annex 18 and the detailed provisions contained in the Technical Instructions. Before a consignment of dangerous goods can be accepted, stored, loaded or unloaded, all relevant persons involved in these processes must have received training to enable them to carry out their responsibilities.

Note.— For staff of operators who prepare company materials [COMAT] that are, or contain dangerous goods for transport, refer to the competency framework for shippers.

A training programme must be established and maintained which should incorporate the general provisions for competency-based training and assessment described in Chapter 2 of the PANS-TRG, Doc 9868. The programme will enable the Operator to:

- determine the training needs for each employee;
- develop and/or verify dangerous goods training programme;
- ensure initial and recurrent training is provided on time;
- maintain training records; and
- develop and deliver on-the-job training.

The following paragraphs are intended to identify competencies related to the specific activities conducted by operators.

**COMPETENCY UNITS, COMPETENCY ELEMENTS AND PERFORMANCE CRITERIA
RELATED TO SPECIFIC ACTIVITIES OF STAFF OF OPERATORS**

1. Competency unit: Evaluate the offered shipment

<i>Competency element</i>	<i>Performance criteria</i>
Verify correct identification of the shipment	<ul style="list-style-type: none"> — apply procedures to aid recognition of undeclared dangerous goods — determine if the offered shipment contains dangerous goods — if the shipment contains dangerous goods, verify if these articles or substances are properly identified
Assess restrictions	<ul style="list-style-type: none"> — verify if the article or substance is forbidden for transport — verify if the article or substance is permitted on passenger aircraft and cargo aircraft or cargo aircraft only — verify, when applicable, if all required exemptions or approvals are obtained — verify availability of passenger aircraft or cargo aircraft — verify any additional restrictions imposed by State and/or operator variations — consider applicable exceptions

2. Competency unit: Perform acceptance check

<i>Competency element</i>	<i>Performance criteria</i>
Verify provided documentation	<ul style="list-style-type: none"> — check if dangerous goods transport document is complete, correct and in accordance with the consignment — if applicable, verify presence of package design certificate and/or any other certificate for Class 7 — verify presence of any additional documents required
Verify packaging	<ul style="list-style-type: none"> — verify selected packaging is permitted — check if package is free from damage or leakage — when an overpack is used, check if all requirements are complied with — when different dangerous goods are packed together, verify that they do not require segregation according to Table 7-1
Verify applicable marking and labeling requirements	<ul style="list-style-type: none"> — verify when applicable if package bears an appropriate UN specification marking — check if all required markings are properly applied — check if all required hazard labels are properly applied — check if all required handling labels are properly applied — verify that the application of any additional labeling or marking does not cause confusion or obstruct the required dangerous goods labeling and marking

3. Competency unit: Handle dangerous goods

<i>Competency element</i>	<i>Performance criteria</i>
Apply provisions for the storage and loading of dangerous goods [Missing performance criteria for storage?]	<ul style="list-style-type: none"> — apply restrictions on flight deck and passenger aircraft — segregate incompatible dangerous goods (Tables 7-1 and 7-2) — handle and load packages containing liquid dangerous goods in the correct orientation — load and secure dangerous goods and prevent them from damage — remove damaged packages of dangerous goods from the aircraft or ULD — identify ULDs containing dangerous goods — replace lost, detached or illegible labels — apply procedures to minimize theft or misuse of dangerous goods that may endanger persons, property or environment — apply the loading procedures to ensure the requirements of Part 7 are met
Apply specific procedures applicable to the carriage of radioactive material	<ul style="list-style-type: none"> — comply with the limits of exposure [Is this really a transport item to be covered in this competency framework?] — apply minimum separation distances to the passenger cabin and flight deck of cargo aircraft — apply minimum separation distances to animals and undeveloped film — apply the appropriate stowage procedures for radioactive material — store and load radioactive material to avoid accumulation of radiation — segregate fissile material, (Part 7;2.9)

4. Competency unit: Inspect packages and ULDs prior to loading and after unloading

<i>Competency element</i>	<i>Performance criteria</i>
Inspect packages, overpacks and ULDs [Need to distinguish between decontamination procedures in this performance criteria and decontamination procedures for RAM in the next element]	<ul style="list-style-type: none"> — inspect, for evidence of leaking or damage of a package or over-pack containing dangerous goods, immediately prior to loading onto an aircraft or into a unit load device — ensure that a leaking or a damaged package, over-pack or ULD containing dangerous goods is not loaded onto an aircraft — inspect the package or overpack upon unloading from the aircraft or ULD
Apply decontamination procedures if evidence of damage or leakage was found	<ul style="list-style-type: none"> — check periodically aircraft and equipment, regularly used for the transport of radioactive material, to determine whether the allowable radiation limits have been exceeded — identify the nature and source of contamination and take appropriate action when baggage or cargo not identified as containing dangerous goods and dangerous goods may be the cause of the contamination — ensure that any hazardous contamination is removed from the aircraft — instruct the persons responsible for the carriage of packages containing infectious substances on the specific actions to be taken when they have become aware of damage or leakage from such a package — identify the nature and source of contamination and take appropriate action when baggage or cargo not identified as containing dangerous goods and dangerous goods may be the cause of the contamination

5. Competency unit: Provide information

<i>Competency element</i>	<i>Performance criteria</i>
Provide information to pilot in command	<ul style="list-style-type: none"> — provide information to the pilot in command on dangerous goods carried on the aircraft (e.g. NOTOC) — include a confirmation, by the person responsible for loading, that there was no evidence of damage or leaking.
Provide information in case of dangerous goods accident or incident [To be clarified]	<ul style="list-style-type: none"> — inform appropriate air traffic services of the dangerous goods carried on board in case of in-flight emergency. — inform the emergency services as required of the dangerous goods — inform the appropriate authorities as required of the dangerous goods
Respond to incident or accident [To be clarified]	<ul style="list-style-type: none"> — identify incident or accident — apply appropriate handling procedures — apply approved reporting procedures
Provide information to passengers and crew	<ul style="list-style-type: none"> — provide information on the dangerous goods that are forbidden in passenger baggage at ticket purchase — ensure that at the airport notices are prominently displayed at the ticket counter, check-in counter and the aircraft boarding areas

6. Competency unit: Prevent unauthorized dangerous goods cargo from being transported
[TITLE TO BE CLARIFIED]

<i>Competency element</i>	<i>Performance criteria</i>
Provide information to aid recognition of undeclared DG cargo	<ul style="list-style-type: none"> — make available specific information on recognizing undeclared DG in general cargo and in passenger's baggage to: <ul style="list-style-type: none"> — cargo reservation and sales staff; — cargo acceptance staff; — passenger reservations and sales staff; and — passenger check-in staff.
Check general cargo on undeclared dangerous goods	<ul style="list-style-type: none"> — identify and check general cargo offered for transport by air for undeclared dangerous goods — seek confirmation from the shipper of general cargo about the contents of any item of cargo where there are suspicions that it may contain dangerous goods — train staff of operators in identifying and detecting undeclared dangerous goods being offered for transport as general cargo
Identify dangerous goods carried by passengers and crew.	<ul style="list-style-type: none"> — identify dangerous goods forbidden in passenger baggage — apply ??? procedures <p>[To be clarified]</p>