



WORKING PAPER

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

Beijing, China, 25 October to 3 November 2006

Agenda Item 5: Resolution, where possible, of the non-recurrent work items identified by the Air Navigation Commission or the panel
5.6: Competency based training

**COMPETENCY FRAMEWORK PROPOSAL FOR INSPECTORS OF
DANGEROUS GOODS BY AIR**

(Presented by the Secretary)

SUMMARY

This paper presents a draft competency framework for inspectors of dangerous goods which can be used for further discussion of competency-based training.

Action by the DGP-WG is in paragraph 3.

1. INTRODUCTION

1.1 During its twentieth meeting in November 2005, the Dangerous Goods Panel (DGP) discussed the outcomes of safety oversight audits as they relate to the implementation of Annex 18. It was concluded that potential performance gaps exist within the various transporting of dangerous goods functions. A lack of competency standards was identified as one of the leading causes for potential gaps in performance. Safety oversight audit findings indicate that more than 50 per cent of civil aviation authorities did not have a designated official with sufficient knowledge and authority to grant exemptions to the transport of dangerous goods by air.

1.2 As stated in paragraph 9.6.1 of the ICAO *Manual of Procedures for Operations Inspection, Certification and Continued Surveillance* (Doc 8335): "It is essential that inspections be conducted to a common standard. Inspections, therefore, should be carried out in accordance with established methods and criteria so as to eliminate discrepancies due to variations in procedure and the experience of individual inspectors." To address this standard, it was proposed that a competency-based approach be taken to determine the expected performance of inspectors of dangerous goods. Given that inspectors belong to civil aviation authorities or delegated approving organizations, sound inspection practices constitute one of the focuses of safety oversight audits. Although transportation of dangerous

goods involves the input of a variety of personnel, it is the responsibility of inspectors to ensure all functions meet a minimum standard of safety and security.

1.3 While it is recognized that individual States have specific issues related to the approval process, a generic competency framework would set minimum criteria for the implementation of inspections. The inspection process includes a review and approval of training programmes as specified in Part 1;4.1.2 of the Technical Instructions. It is suggested that the objective for this inspection step is to ensure that DG personnel are trained to carry out their job in a competent manner.

1.4 Recognizing that competent and qualified inspectors constitute one input into the system, the process of deriving a competency framework for inspectors could be used as a model for developing future frameworks to other DG personnel within the system, including but not limited to the following areas identified by Table 1-4 of the Technical Instructions:

- a) shippers and packers;
- b) freight forwarders;
- c) operators and ground handling agents; and
- d) security screeners.

2. PROPOSAL FOR INSPECTORS OF DANGEROUS GOODS COMPETENCY FRAMEWORK

2.1 A competency-based framework is a hierarchical structure outlining the expected tasks duties and responsibilities for a given job. This framework consists of competency units, competency elements and performance criteria. Competency units are distinct areas of responsibility in a given job. Each competency unit consist of competency elements. Competency elements have clear start and ending points and an observable outcome. Performance criteria are simple evaluative statements on the required outcome of the competency element and a description of the criteria used to evaluate if required levels of performance are achieved.

2.2 The development of a competency-based framework uses a systematic approach whereby competency standards are defined based on expected job performance. As the framework systematically inventories the tasks an inspector is expected to perform as well as their associated standard of performance, training derived from the framework focuses on what trainees need to know and do to perform on the job. Furthermore, this approach allows the development of assessments during which trainees are called to demonstrate their ability to perform authentic inspectors' tasks. Ultimately, a competency-based framework should guide performance based assessment. A performance based assessment ensures that inspectors of dangerous goods have acquired the necessary skills, knowledge and attitudes and can apply them on the job.

2.3 Instructional systems design (ISD) tools, especially job and task analysis, are particularly useful in identifying competency units, competency elements and performance criteria. Job and task analysis were used in the development of competency frameworks for flight crew and flight procedure designers. The ICAO course development methodology, a competency-based approach to training, assessment and an example of an ISD methodology is described in the attachment to Chapter 2 of the *Procedures for Air Navigation Services — Training* (Doc 9868).

2.4 On 23 June, 2006 correspondence was sent to several members of the DGP. Consequently, information including job descriptions and procedures for training inspectors of dangerous goods by air was provided. Online articles, resource information, and training materials related to inspectors of dangerous goods were also collected and reviewed. The draft version of the competency framework resulting from this initial analysis can be found in the appendix to this paper.

3. ACTION BY THE DGP-WG

3.1 The DGP-WG is invited to:

- a) review the draft competency framework for inspectors of dangerous goods proposed in the appendix to this paper; and
- b) establish a working group to:
 - 1) further develop the inspector's competency framework;
 - 2) prioritize the dangerous goods function for which a competency frameworks should be developed; and
 - 3) establish a work plan.

APPENDIX

COMPETENCY FRAMEWORK FOR INSPECTORS OF OPERATORS
WHO TRANSPORT DANGEROUS GOODS BY AIR

X Competency Unit
X.X Competency Element

1	Approve* new operators to carry dangerous goods by air.	
1.1	Conduct initial review.	
1.2	Conduct document review	
1.3	Conduct an onsite inspection	
1.4	Issue certification/approval.	
2	Conduct regular inspection of approved operators.	
2.1	Evaluate consignment of all packages being imported and exported throughout the facility.	
2.2	Evaluate training process of all personnel involved	
2.3	Conduct a risk assessment where personal injury could occur.	
2.4	Inspect procedures for security desk check-in inspections	
2.5	Evaluate incident or accident reporting procedures.	
3	Conduct an ad hoc assessment on dangerous goods shipping & handling procedures of approved operators.	
3.1	Conduct an ad hoc assessment on dangerous goods handling standards of local air operators at outstations	
3.2	Conduct an ad hoc assessment on dangerous goods shipping & handling procedures of cargo stations.	
3.3	Conduct an ad hoc assessment of passenger check-in stations	
3.4	Conduct an ad hoc assessment of security desk check-in stations	
4	Conduct a focused inspection of approved operators identified as having multiple deficiencies or symptoms for potential risk/injury	
4.1	Determine focus of inspection	
4.2	Establish protocol/checklists for focused inspection	
4.3	Brief the certified operator on the focused inspection process	
4.4	Carry out focused inspection by ensure that checklists for all areas of the audit are fully completed	
4.5	Document non-compliance found during inspection using appropriate documentation	
4.6	Debrief certified operator on results of focused inspection	
4.7	Establish a surveillance plan	

— END —

* The word “approve” includes the process of formal certification where applicable.