



DANGEROUS GOODS PANEL (DGP)

TWENTY-FOURTH MEETING

Montréal, 28 October to 8 November 2013

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

5.2: Dangerous goods incident and accident data collection

DANGEROUS GOODS ACCIDENT AND INCIDENT REPORTING SYSTEM

(Presented by the Secretary)

SUMMARY

This working paper presents an outline of a system requirements document which the working group on the dangerous goods accident and incident reporting system is invited to use as a basis for its discussions.

Action by the DGP: The DGP is invited to use the draft requirements document in Appendix A to this working paper as a basis for its discussion on the development of a global accident and incident reporting system.

1. INTRODUCTION

1.1 The need for a global dangerous goods incident and accident reporting system was identified at the Dangerous Goods Panel (DGP) Working Group of the Whole on Lithium Batteries Meeting (Montreal, 6 to 10 February 2012) (DGP-WG/LB). The working group recommended that incidents involving lithium batteries be reported to ICAO for publishing on a publicly-accessible website. It was recognized that such information provided tools for identifying causal factors and potential gaps in regulations. The Air Navigation Commission (ANC), when reviewing the DGP/23 Report and the Report of the DGP-WG/LB, asked the Secretariat to consider developing a dangerous goods incident reporting system for all dangerous goods with standardized methods and procedures for gathering and coordinating data.

1.2 It was decided at the 2013 Meeting of the DGP Working Group of the Whole that a working group would be formed to begin developing this system. This working paper provides an outline for a system requirements document which the working group is invited to use as a basis for its discussions. The document is divided into five sections as shown in Appendix A. It is suggested the working group focus its initial attention on the first section of this document, the introduction, which includes the purpose and scope of the system. Clearly identifying the purpose and scope of the system

will be a critical step towards the development of a successful system. Draft text has been included in this section as a basis for discussion.

1.3 Appendix B to this working paper includes a working paper on a dangerous goods reporting system that was presented by Brazil to the 38th Session of the Assembly (Appendix B). The working group is invited to consider this paper during its discussions.

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APPENDIX

REQUIREMENTS DOCUMENT FOR GLOBAL DANGEROUS INCIDENT AND ACCIDENT REPORTING SYSTEM

1. INTRODUCTION

1.1 The need for a global dangerous goods incident and accident reporting system was identified at the Dangerous Goods Panel (DGP) Working Group of the Whole on Lithium Batteries Meeting (Montreal, 6 to 10 February 2012) (DGP-WG/LB). The working group recommended that incidents involving lithium batteries be reported to ICAO for publishing on a publicly-accessible website. It was recognized that such information provided tools for identifying causal factors and potential gaps in regulations. The Air Navigation Commission (ANC), when reviewing the DGP/23 Report and the Report of the DGP-WG/LB, asked the Secretariat to consider developing a dangerous goods incident reporting system for all dangerous goods with standardized methods and procedures for gathering and coordinating data.

1.2 Purpose

1.2.1 The purpose of the dangerous goods incident and accident reporting system is to identify hazards so that measures can be taken to increase awareness and eliminate them.

1.3 Scope

1.3.1 What needs to be reported

- a) dangerous goods accidents and incidents (Part 1;7 (recommendation), Part 7;4.4 (requirement));
- b) misdeclared and undeclared dangerous goods ((Part 1;7 (recommendation), Part 7;4.5 (requirement));
- c) dangerous goods occurrences (7;4.6);
- d) dangerous goods not permitted under passenger and crew provisions of 8;1.1.1 (Part 7;4;5);
- e) differentiation between whether the above occurs on the ground (where) or in flight.

1.3.2 When the above needs to be reported

- a) closed accident and incidents reports only?
- b) accident and incidents which are still under investigation?
- c) reports of every accident?
- d) summary report of incidents (e.g. monthly, quarterly, biannually, annually)?

- e) summary reports of misdeclared/undeclared dangerous goods (consideration of definitions of different levels (e.g. potential for severe impact on safety, potential for serious impact on safety, potential for minor impact on safety));
- f) summary reports of dangerous goods occurrences (consideration of definitions of different levels (e.g. potential for severe impact on safety, potential for serious impact on safety, potential for minor impact on safety));
- g) summary reports of summary reports of dangerous goods occurrences (consideration of definitions of different levels (e.g. potential for severe impact on safety, potential for serious impact on safety, potential for minor impact on safety));

1.3.3 **Who will use the system**

- a) DGP
- b) ICAO: Dangerous Goods Section (DGS), Accident Investigation Section(AIG), Integrated Safety Management Section (ISM), Continuous Monitoring and Oversight Section (CMO)
- c) CAAs

1.3.4 **Who reports**

- a) Do operators/shippers/freight forwarders etc. make simultaneous reports to ICAO when they report to appropriate State?
- b) Should only States report? If so which ones (State of the Operator?)

1.3.5 **How to report**

- a) Direct input?
- b) Validation by ICAO?
- c) Linking to existing State databases?
- d) Linking to ICAO Accident/Incident Data Reporting (ADREP)/European Co-ordination Centre for Aviation Incident Reporting System (ECCAIRS)?

1.3.6 **What information will be generated**

- a) Consideration of privacy policies within States needs to be taken into account — do we want State/operator/shipper names or overall global trends?
- b) Will names of States/operators/shippers be publically available? If not, will they be known to ICAO? Can ICAO provide names to individual States? States of Origin, transit, destination?

- c) Examples of reports to be generated
- 1) Global number of substance/article-related incidents/accidents (UN No., proper shipping name, class or division, sub-risk, PG)
 - 2) Global number of substance/article-related cases of misdeclared/undeclared dangerous goods(UN No., proper shipping name, class or division, sub-risk, packing group)
 - 3) Global number of misdeclared/undeclared-related incidents/accidents (UN No., proper shipping name, class or division, sub-risk, packing group)
 - 4) Number of substance/article-related incidents/accidents per State/region/operator/shipper (UN No., proper shipping name, class or division, sub-risk, packing group)
 - 5) Number of substance/article-related cases of misdeclared/undeclared dangerous goods per State/region/operator/shipper (UN No., proper shipping name, class or division, sub-risk, PG)

1.4 Definitions, Acronyms, and Abbreviations

From Part 1;3:

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 these Instructions, or which are classified according to these 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.

Note.— A dangerous goods accident or incident may also constitute an aircraft accident or incident as specified in Annex 13 — Aircraft Accident and Incident Investigation.

Should definition for occurrence be added? From Part 7;4.6:

Dangerous goods discovered to have been carried when not loaded, segregated, separated or secured in accordance with Part 7;2; or

Dangerous goods discovered to have been carried without information having been provided to the pilot-in-command in accordance with Part 7;4.1.

1.5 **References**

- a) *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284);
- b) *Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284SU);
- c) *Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods* (Doc 9481);
- d) ICAO Accident/Incident Data Reporting (ADREP);
- e) European Co-ordination Centre for Aviation Incident Reporting System (ECCAIRS).

2. **OVERALL DESCRIPTION**

2.1 **Product perspective**

2.1.1 Stand-alone system? Expansion of existing system (how do they relate, what kind of interfact)?

2.2 **Product features**

2.2.1 Overall summary of major features, significant functions. Details to be provided in paragraph 3.

2.3 **Users**

2.3.1 Identify various user types (consider frequency of use, functions used, technical expertise, security or privilege levels).

2.4 **Operating environment**

2.4.1 Hardware platform, operating system and versions, other software components.

2.5 **Design and implementation constraints**

2.5.1 Issues that may limit development (e.g. regulatory policies, confidentiality, hardware limitations, interfaces to other applications, specific technologies, connections to external databases, language requirements, security).

2.6 **User documentation**

2.6.1 List user manuals, on-line help, tutorials that will be available.

2.7 **Assumptions and dependencies**

2.7.1 Assumed factors as opposed to known facts.

3. **SYSTEM FEATURES**

4. **EXTERNAL INTERFACE REQUIREMENTS**

5. **OTHER REQUIREMENTS**

6. **APPENDICES**

6.1 Data flow diagrams, entity-relationship diagrams etc.

APPENDIX B

**WORKING PAPER PRESENTED TO THE 38TH SESSION OF THE ICAO ASSEMBLY ON A
DANGEROUS GOODS REPORTING SYSTEM**



International Civil Aviation Organization

WORKING PAPER**ASSEMBLY — 38TH SESSION****TECHNICAL COMMISSION****Agenda Item 29: Aviation Safety — Monitoring and Analysis****DANGEROUS GOODS REPORTING SYSTEM**

(Presented by Brazil on behalf of the 12¹ members of the Latin American Safety Oversight Cooperation System (SRVSOP), with support from the other 10 Member States of Latin American Civil Aviation Commission (LACAC))

EXECUTIVE SUMMARY

A global system for reporting dangerous goods occurrences is needed in order to facilitate and standardize the communication of occurrences between Member States and ICAO. This system would store reported data, which could be used by States as a safety tool for risk identification and safety management.

Action: The Assembly is invited to agree to call on ICAO to develop a global dangerous goods reporting system.

<i>Strategic Objectives:</i>	This working paper relates to the Safety Strategic Objective.
<i>Financial implications:</i>	Not applicable.
<i>References:</i>	Annex 18 — <i>The Safe Transport of Dangerous Goods by Air</i> Doc 9284, <i>Technical Instructions for the Safe Transport of Dangerous Goods by Air</i>

1. INTRODUCTION

1.1 The *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) Part 7, Chapter 4, presents requirements for operators regarding the reporting of accidents, incidents and other dangerous goods occurrences² such as undeclared and misdeclared dangerous goods.

¹ LACAC is composed of 22 members: **Argentina**, Aruba, Belize, **Bolivia**, **Brazil**, **Chile**, **Colombia**, Costa Rica, **Cuba**, **Ecuador**, El Salvador, Guatemala, Honduras, Jamaica, México, Nicaragua, **Panamá**, **Paraguay**, **Peru**, Dominican Republic, **Uruguay** and **Venezuela** (SRVSOP members are highlighted in **bold**).

² ***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 constitute a dangerous goods incident.

1.2 The *Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284SU), Part S-7, Chapter 4, on the other hand, contains provisions on accidents, incidents and other dangerous goods occurrences for States. Such provisions include reports of events between the States involved and also between States and ICAO.

1.3 Some of the ICAO Member States have well developed systems for reporting dangerous goods accidents and incidents, and thus are able to provide and exchange information on such occurrences in an agile and efficient manner, a fact that brings a great benefit for the safe transport of dangerous goods in their territory.

1.4 However, most States do not have such an effective reporting system, nor are they able to benefit from other States' safety lessons due to a lack of a common and standardized system for sharing information. This gap hinders the prevention of reoccurrence of certain safety events that could be avoidable through databased proactive measures.

1.5 Hazard identification is based on a combination of reactive, proactive and predictive methods of safety data collection. From a proactive standpoint, States should establish mechanisms to ensure the capture and storage of data on hazards and safety risks, including dangerous goods information. States should also establish mechanisms to develop information from stored data, and to actively exchange safety information with service providers and/or other States, as appropriate.

1.6 A centralized, global dangerous goods reporting system would pose great safety benefits for all Member States and would allow them to share critical safety information between them and with ICAO.

2. REPORTING REQUIREMENTS FOR OPERATORS

2.1 Doc 9284 and its Supplement establish notification requirements for operators. These requirements include dangerous goods accidents and incidents, as well as occurrences related to undeclared and misdeclared goods. Other occurrences that should be reported include those caused by non-compliance in loading, segregation, separation or accommodation, or the absence of necessary information about dangerous goods to the pilot-in-command. Appendix A contains a detailed reference on notification requirements established in Doc 9284 and its Supplement.

3. PROVISIONS CONCERNING DANGEROUS GOODS OCCURENCES FOR STATES

3.1 Part S-7, Chapter 4 of the Supplement to the Technical Instructions highlights the importance of research, reporting and analysis of incidents involving the transport of dangerous goods by air. The provisions of this chapter also include information about occurrence notifications between the States involved, format and content of notifications, investigation of incidents and accidents and also reports of incidents to other States and to ICAO.

3.2 These provisions are consistent with those related to safety management systems and State safety programme requirements established in the *Safety Management Manual (SMM)* (Doc 9859).

4. ACTIONS IN BRAZIL

4.1 Brazil has promoted several initiatives for awareness in the aviation industry and other organizations and companies that somehow have influence on the air transport of dangerous goods. Some of the actions undertaken include several dangerous goods courses and seminars with the participation of specialized government agencies, occurrence investigations, establishment and management of a database to record events, publication, regulations, and the coordination of the Project for Coordinated Surveillance of Dangerous Goods with ICAO regional office in Lima. Appendix B contains a detailed list of the actions promoted by the Brazilian Civil Aviation Agency (ANAC).

5. ACTIONS AT ICAO REGIONAL OFFICE IN LIMA

5.1 In November 2012, the Project for Coordinated Surveillance of Dangerous Goods was approved by the 25th Meeting of the General Board of the Regional Safety Oversight Cooperation System for Latin America (LATAMRSOO, known as SRVSOP), which is currently being driven and implemented by member countries of the SRVSOP.

5.2 Module 2 of this project is expected to start in January 2014 and includes the creation of an integrated dangerous goods occurrence reporting system capable of receiving, storing and generating statistical data and information sourced from occurrences with dangerous goods related to each of the State members of SRVSOP.

5.3 This integrated system will provide all Member States with a standardized instrument for immediate reporting of occurrences related to dangerous goods. However, despite the enormous foreseen safety benefits for the SRVSOP States, this system is not yet a global solution. More information on the SRVSOP can be obtained through its website: <http://www1.lima.icao.int/srvsop/>.

6. ACTION AT THE DANGEROUS GOODS PANEL (DGP)

6.1 The issue of occurrence notifications involving dangerous goods as well as the need to develop a global reporting system has been treated by members of the Dangerous Goods Panel (DGP) in panel meetings, as well as meetings of the DGP Working Group of the Whole (DGP/WG/WHL). Two working papers were presented at the DGP Working Group of the Whole Meeting in October 2012. Even though both documents were well accepted, not much progress has been achieved so far. Further details on DGP progress on the subject can be found in Appendix C.

7. NEED FOR A GLOBAL DANGEROUS GOODS OCCURRENCE REPORTING SYSTEM

7.1 The growth of the transport of dangerous goods by air combined with the constant development of technology make it necessary to create new tools that work in favour of safety.

7.2 Tests carried out in some States and recent events involving the transport of lithium batteries including their usage on aircraft provide warning about the risks of their presence on flights conducted around the world.

7.3 A centralized global reporting system would enable fast and reliable occurrence reporting and data sharing among States and between them and ICAO, and would also allow those States that do not have adequate resources to develop local reporting tools to have equal access to this critical

safety information and the same reporting capability as any other State. At the end, this proactive prevention method will allow for earlier hazard identification and risk management.

7.4 Appendix D includes an example of application.

7.5 The minimum steps required to develop and establish the global dangerous goods reporting system are listed in Appendix E.

8. CONCLUSION

8.1 The Assembly is invited to agree to call on ICAO to develop a global dangerous goods reporting system tool, based on the presented information, given the benefits that the creation of a centralized dangerous goods occurrence reporting system would bring to States and operators safety management capabilities.

APPENDIX A**NOTIFICATION REQUIREMENTS ESTABLISHED ON DOC 9284 AND ITS SUPPLEMENT**

Paragraph 4.4 of Part 7 of the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284), presents requirements for reporting of accidents and incidents involving dangerous goods by operators to their respective authorities.

Paragraph 4.5, on the other hand, presents requirements related to undeclared and misdeclared dangerous goods. Such occurrences must also be reported to the appropriate authorities.

Paragraph 4.6 addresses other types of occurrences involving dangerous goods that must also be reported by the operator to the State of the Operator and the State of Origin. Such occurrences are those caused by noncompliance in loading, segregation, separation or accommodation, or the absence of necessary information about dangerous goods to the pilot-in-command.

Paragraph 4.7 brings requirements about the types of information to be provided in cases of accidents and serious incidents involving the transport of dangerous goods as well as requirements for information to be provided to emergency response service.

Paragraph 4, Part S-7 of the Supplement to the Technical Instructions introduces provisions relating to dangerous goods occurrences. This chapter highlights the importance of research, reporting and analysis of incidents involving the transport of these items by air. The provisions of this chapter also include information about occurrences notifications between the States involved (Doc 9284, Part S-7, paragraph 4.2), format and contents of notifications (Doc 9284, Part S-7, paragraph 4.2), investigation of incidents and accidents (Doc 9284, Part S-7, paragraphs 4.3 and 4.6) and also reports of incidents to other States and to ICAO (Doc 9284, Part S-7, paragraphs 4.4 and 4.5).

APPENDIX B**ACTION PROMOTED BY ANAC**

Some of the actions undertaken by ANAC and that are in progress or under consideration are:

- Conducting of courses in air transport of dangerous goods with the participation of aviation industry employees, Ministry of Health, National Health Surveillance Agency, Brazilian Institute of the Environment, etc.;
- Conducting seminars in transport of biological and infectious substances involving aviation industry employees, Brazilian Designated Postal Operator, Ministry of Health, National Health Surveillance Agency, Brazilian Institute of the Environment, etc.;
- Conducting seminars on the transport of lithium batteries;
- Conducting of courses on the air transport of dangerous goods specific to employees of the Brazilian Designated Postal Operator, with a view to obtaining authorization for the transport of lithium batteries in the mail;
- Participation in events of safety with the theme of awareness on the transport of dangerous goods by air;
- Maintenance of a database of dangerous goods occurrences and investigation of all types of events reported;
- Creation and updating of regulations and instructions on the transport of dangerous goods by air;
- Publication of the Brazilian State variations, including a requirement for sending monthly reports for all operators operating in Brazilian territory (BR3) in order to optimize the monitoring of the transport of dangerous goods by air in national territory;
- Participation in the electronic AWB project (CT- e), system responsible for storing and treating electronically all data relating to the carriage of domestic cargo in the national territory;
- Coordination of the Project for Coordinated Surveillance of Dangerous Goods Transport together with the ICAO Regional Office in Lima.

APPENDIX C

ACTIONS AT THE DANGEROUS GOODS PANEL

The issue of occurrences involving dangerous goods has been treated by members of the Dangerous Goods Panel (DGP) in panel meetings as well as meetings of the DGP Working Group of the Whole (DGP/WG/WHL)

At the Working Group of the Whole Meeting held in October 2012, two working papers relating to occurrences with dangerous goods were presented. One sought to define the terms "dangerous goods event" and "dangerous goods discrepancy" understanding that there is a gap in the Technical Instructions for some types of minor occurrences that are not considered accidents or incidents involving dangerous goods and identifying the need for a term that summarizes all abnormal occurrences involving the transport of dangerous goods by air. The other paper, on the other hand, discussed the need to create a database for reporting dangerous goods occurrences.

Both working papers were well accepted. However, it was understood that the first paper needed further discussions on the subject to be approved. This discussion would be addressed by the creation of a working group suggested by the other working paper.

At the Working Group of the Whole Meeting held in April 2013, participants talked again about the creation of a dangerous goods occurrence reporting system. Members recognized that the working group to be created did not have much progress in the work that would be done by correspondence and recognized the difficulty of conducting a job of this size without meeting face to face.

It was also concluded that the needs of a global system were different from the needs of a national occurrence reporting system and that the functions and information of the system should be well defined, since there is sensitive data that States cannot share about their occurrences.

It was suggested that the Secretariat of the DGP get in touch with UNECE to verify if efforts could be combined with a view that organization has started the development of a dangerous goods occurrence report system. Members also suggested the formation of a new working group on the occasion of the meeting and it was decided to conduct this job by correspondence again. The issue would be addressed by the working group during the DGP/24 meeting.

APPENDIX D

EXAMPLE OF APPLICATION

A dangerous goods occurrence with a package loaded in State A with destination in State B, carried by a State B operator, occurred in a State C territory.

Taking into consideration that the event has been classified as a dangerous goods incident, according to Part 7;4.4 of the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284), the occurrence must be reported by the operator for the State of Operator (B) and the State in which the incident occurred (C).

Considering that the incident was a spill of corrosive substance in the cargo compartment of the aircraft and that it has been determined at the time of the occurrence that the cargo had not been loaded in accordance with Chapter 2 of Part 7 of the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284), this incident should have also been reported to the State of Origin (A), as established in 7;4.6 (a) of the Technical Instructions

Thus, there would be three different States that should have been notified about the occurrence by the operator.

Considering that a number of similar occurrences with the same State (A) as State of Origin has been observed, according to S-7; 4.5.1 of the Supplement to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284), the State in which the incident occurred must report the occurrence to the State of Origin and to ICAO, as this information may prevent the recurrence of similar incidents.

Assuming that the operator has notified the incident only to the State in which the event occurred (C), the fact that this State reports the occurrence in a centralized system used by all States and also by ICAO would make that the communication of the incident arrive fast and efficiently to all other States that should be aware of the fact and still to the ICAO. Thus, the operator could be questioned by the other States involved (A and B) on the lack of reporting in accordance with the requirements of the Technical Instructions

In addition, the report and the conclusions of the investigation of the incident could be made available online to all States involved in the occurrence and to other States that are interested but do not have experience with the subject in order to act in a case of similar occurrence in their territories.

APPENDIX E**STEPS REQUIRED TO DEVELOP THE GLOBAL DANGEROUS GOODS REPORTING SYSTEM**

The development of the system should involve at least the following steps:

- Inclusion of definitions of occurrence and discrepancy with dangerous goods in the Technical Instructions;
- Identification of the needs and scope of the system;
- Setting the language or languages to be used (at least the English);
- Identification of different types of classification for dangerous goods occurrences (e.g.: by type of occurrence - discrepancy, incident, accident; by type of volume - cargo, baggage, mail; etc.);
- Establishment of the types of occurrences that must be reported by States to ICAO;
- Establishment of the types of occurrences that must be reported by the State in which the event occurred to other states involved (State of Operator, State of Origin, etc.);
- Definition of the fields, information and data to be entered in the reports and the format of information and data of such reports;
- Definition of information that may or may not be shared among the States involved in the occurrences, among other States and between these and ICAO, considering confidentiality reasons;
- Establishment of the types of reports to be generated by the system.

— END —