



## **DANGEROUS GOODS PANEL (DGP) WORKING GROUP MEETING (DGP-WG/22)**

**Montréal, 21 to 25 November 2022**

**Agenda Item 5: Clarifying State oversight responsibilities in Annex 18 (Ref: Job Card DGP.005.04)**

### **REPORT OF THE DGP WORKING GROUP ON ANNEX 18: CLARIFYING STATES' RESPONSIBILITIES IN ANNEX 18**

(Presented by the DGP Working Group on Annex 18)

#### **SUMMARY**

This information paper provides a summary of the progress made on ANC Job Card DGP.005.03: Clarifying State oversight responsibilities in Annex 18. It invites the DGP to review the draft restructured Annex 18 presented in Appendix A to this information and provide feedback by responding to the questions listed in Appendix C to this paper.

## **1. INTRODUCTION**

1.1 The DGP Working Group on Clarifying States' Responsibilities in Annex 18 (DGP-WG/Annex 18) was established to progress the work on ANC Job Card DGP.005 — Clarifying State oversight responsibilities in Annex 18. The job card was developed after deficiencies were identified through work on aligning Annex 18 dangerous goods reporting and oversight requirements in Annex 18 with Annex 19 (ANC Job Card DGP.002.01). That work revealed a lack of clarity and sufficient detail in Annex 18 to effectively outline States' responsibilities with respect to the safe transport of dangerous goods by air and the interrelationship of oversight responsibilities between dangerous goods and other aviation activities. It was also identified that although notes to clarify that the scope of an operator's safety management system included the carriage of dangerous goods, nothing was introduced to clarify States' safety management responsibilities. It was concluded that establishing a relationship between State oversight of the safe transport of dangerous goods by air with the State safety management responsibilities and critical elements of a system that enables a State to discharge its responsibilities for safety oversight contained in Annex 19 would provide clarity.

## 2. PROGRESSION OF WORK

2.1 Progress of the working group was reported to the twenty-eighth meeting of the DGP (DGP/28, see paragraph 5.2 of the DGP/28 Report). DGP-WG/Annex 18 has held three face-to-face meetings since that time. The first was hosted by the United Arab Emirates from 7 to 11 March 2022 at the Emirates Aviation College in Dubai, the second by International Air Transport Association (IATA) from 25 to 29 July 2022 in Singapore and the third from 14 to 18 November 2022 at ICAO Headquarters in Montreal. This work has cumulated into the draft new structure provided in Appendix A. Specific details of the working group's progress are provided in Appendix B.

2.2 The material in Appendix A is still preliminary. It presented as a clean version for ease of review. A redline/strikeout version will be presented when the amendments are more mature. The following timeline to finalize amendments for consideration at DGP/29 was developed by the working group:



## 3. REQUEST FOR FEEDBACK

3.1 DGP-WG/22 is invited to review the draft restructured Annex 18 presented in Appendix A to this information and to provide feedback by responding to the questions listed in Appendix C to this paper. Feedback should be provided through the secretary by 17 February 2023 for onward submission to DGP-WG/Annex 18.

## APPENDIX A

### WORKING DOCUMENT FOR THE DEVELOPMENT OF A REVISED AND RESTRUCTURED ANNEX 18

## FOREWORD

Annex 18 establishes the international principles that contribute to the safety of dangerous goods in air transport by providing criteria for standardized operating practices that facilitate the transport of dangerous goods internationally.

### Historical background

The Standards and Recommended Practices (SARPs) in this Annex were developed by the Air Navigation Commission (ANC) in response to Recommendation 7/1 of the ICAO Accident Investigation and Prevention Divisional Meeting (1974) and a need expressed by Contracting States for an internationally agreed set of provisions governing the safe transport of dangerous goods by air. The need had been highlighted following a fatal aircraft accident and several serious incidents involving dangerous goods. The Air Navigation Commission established the Dangerous Goods Panel (DGP) to assist in the development of the SARPs and the detailed instructions contained in the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) necessary for the standardized implementation of the Annex and the safe and orderly transport of dangerous goods by air.

The provisions of The Technical Instructions are based on the Recommendations of the United Nations Committee of Experts on the Transport of Dangerous Goods so as to achieve a baseline level of safety and compatibility with the regulations covering the transport of dangerous goods by other modes of transport.

In 2016, the Dangerous Goods Panel agreed to establish a working group to restructure Annex 18. Subsequently, the ANC approved a job card tasking the DGP to complete a comparison of Annex 18 with other Annexes (and associated guidance material) with the view to identify any ambiguities, inconsistencies, unnecessary duplication and gaps; the ultimate goal being to re-align and strengthen relationships with the other Annexes. The restructure focused on clarifying States' dangerous goods responsibilities within the State safety programme (SSP).

### Guidance

The *Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284SU) provides additional information to the Technical Instructions and guidance to the States in performing their functions as a national civil aviation authority or as a competent authority as required by Annex 18. The Supplement also provides guidance with respect to the assessment and subsequent issuance of State approvals and exemptions for the transport of dangerous goods by air specified under certain provisions detailed within the Technical Instructions.

### **Revisions to this Annex**

Annex 18 contains the SARPs for the transport of dangerous goods by air. The SARPS within this Annex are written broadly and without technical detail, in order that amendment to them is required only infrequently. The Technical Instructions are an amplification of these SARPs which provide the technical details required to achieve compliance with the requirements and recommendations of the Annex. Unlike Annex 18, the Technical Instructions are updated biennially to align with the UN Recommendations on the Transport of Dangerous Goods (Model Regulations). Proposals to update Annex 18 are presented to the DGP for discussion and scrutiny. If agreed by the Panel, these updates are then presented to the Air Navigation Commission for further review and discussion. It is part of the ANC's remit of responsibility to approve any amendments to this Annex.

### **Definitions**

The addition of definitions into the Annex must take into consideration the definitions contained within the other Annexes and also within the Technical Instructions. The definitions listed within Annex 18 explain specific words or technical concepts for which a common level of understanding is required to achieve the intended safety outcome for each SARP within this Annex. These definitions are not intended to duplicate definitions within other Annexes, however where differences occur specific to the transport of dangerous goods by air, these definitions may provide a different meaning for application only in the context of Annex 18 and the Technical Instructions. Any additional definitions used in the operational requirements for the transport of dangerous goods by air are largely contained within the Technical Instructions.

### **Relationship with other Annexes and the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284)**

The provisions of Annex 18 govern the international transport of dangerous goods by air within a State's safety programme. The broad provisions of Annex 18 are amplified by the detailed specifications of the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284). In order that a comprehensive document may be available to States for implementation of the dangerous goods provisions prescribed by this Annex, an Attachment hereto describes the interrelationships between Annex 18 and other Annexes bearing on the subject of the safe transport of dangerous goods by air.

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# INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES

## CHAPTER 1. DEFINITIONS

When the following terms are used in this Annex, they have the following meanings:

**Approval.** An authorization granted by an appropriate national authority for:

- a) the transport of dangerous goods forbidden on passenger and/or cargo aircraft where the Technical Instructions state that such goods may be carried with an approval; or
- b) other purposes as provided for in the Technical Instructions.

*Note.— In the absence of a specific reference in the Technical Instructions allowing the granting of an approval, an exemption may be sought.*

**Cargo.** Any property carried on an aircraft other than mail and accompanied or mishandled baggage.

*Note.— This definition differs from the definition of “cargo” given in Annex 9 — Facilitation.*

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

**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.

**Crew member.** A person assigned by an operator to duty on an aircraft during a flight duty period.

**Dangerous goods.** Articles or substances which are capable of posing a hazard 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 those Instructions.

**Dangerous goods accident.** An occurrence associated with and related to the transport of dangerous goods by air, not necessarily occurring on board an aircraft, which results in fatal or serious injury to a person or major property or environmental damage.

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

**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 where:

- a) a person is injured;
- b) there is property or environmental damage;

- c) there is fire, breakage, spillage, leakage of contents or radiation or there is other evidence that the integrity of the packaging has not been maintained; or
- d) any occurrence relating to the transport of dangerous goods which seriously jeopardizes the aircraft or its occupants.

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

**Designated postal operator.** Any governmental or non-governmental entity officially designated by a Universal Postal Union (UPU) member country to operate postal services and to fulfil the related obligations arising from the acts of the UPU Convention on its territory.

**Exception.** A provision in this Annex which excludes a specific item of dangerous goods from the requirements normally applicable to that item.

**Exemption.** An authorization, other than an approval, granted by an appropriate national authority providing relief from the provisions of the Technical Instructions.

**Extraterritorial Office of Exchange (ETOE).** A facility belonging to a designated postal operator outside its national territory on the territory of another State.

**Flight crew member.** A licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period.

[**Freight forwarder.** A person [organization or enterprise] who offers the service of arranging the transport of cargo by air.]

[**Ground handling service provider.** A person [organization or enterprise] who performs, on behalf of an operator, the service of accepting, handling, loading, unloading, transferring, or otherwise processing cargo, passengers or baggage.]

[**Misdeclared dangerous goods.** Dangerous goods offered for transport by air that are identified to not be in accordance with the information provided on the dangerous goods transport document or other documentation, when applicable.]

*Note.*— *Dangerous goods identified by the operator during the acceptance check as not being fully in compliance with the applicable provisions of the Technical Instructions are not included in this definition.*

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

**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 Part 2, paragraph 7.1.3 of the Technical Instructions.*

***Passenger aircraft.*** An aircraft that carries any person other than a crew member, an operator's employee in an official capacity, an authorized representative of an appropriate national authority or a person accompanying a consignment or other cargo.

***Pilot-in-command.*** The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.

***Safety management system (SMS).*** A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

***Serious injury.*** An injury which is sustained by a person in an accident and which:

- a) requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received; or
- b) results in a fracture of any bone (except simple fractures of fingers, toes or nose); or
- c) involves lacerations which cause severe haemorrhage, nerve, muscle or tendon damage; or
- d) involves injury to any internal organ; or
- e) involves second- or third-degree burns, or any burns affecting more than 5 per cent of the body surface; or
- f) involves verified exposure to infectious substances or injurious radiation.

***State of Destination.*** The State in the territory of which the consignment is finally to be unloaded from an aircraft.

***State of Origin.*** The State in the territory of which the consignment is first to be loaded on an aircraft.

***State of the Operator.*** The State in which the operator's principal place of business is located or, if there is no such place of business, the operator's permanent residence.

***Supply chain.*** Includes any entity that:

- a) offers, handles or transports; or
- b) causes to offer, handle or transport;

dangerous goods in cargo or mail.

***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.

***[Undeclared dangerous goods.*** Dangerous goods offered for transport by air where there is no dangerous goods transport document or other documentation, when permitted, describing the contents as containing dangerous goods or the package is not marked to identify the contents as containing dangerous goods, as required by the Technical Instructions.]

**UN number.** The four-digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals to identify an article or substance or a particular group of articles or substances.

**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.*

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## CHAPTER 2. GENERAL PRINCIPLES

### 2.1 Objectives

2.1.1 Each Contracting State shall have as its primary objective the protection of health, safety, property and the environment in matters related to the transport of dangerous goods by air.

2.1.2 Each Contracting State shall establish an organization that develops and implements regulations, practices and procedures that provide for the safe transport of dangerous good by air.

### 2.2 Applicability

2.2.1 Each Contracting State shall apply the Standards and shall endeavour to apply the Recommended Practices contained in this Annex to international civil aviation.

2.2.2 **Recommendation.**— *In the interests of safety and of minimizing interruptions to the international transport of dangerous goods, Contracting States should apply the Standards and the Recommended Practices contained in this Annex to domestic civil aircraft operations.*

### 2.3 Detailed instructions

#### 2.3.1 Dangerous Goods Technical Instructions

2.3.1.1 Each Contracting State shall take the necessary measures to achieve compliance with the detailed provisions contained in the Technical Instructions. Each Contracting State shall also take the necessary measures to achieve compliance with any amendment to the Technical Instructions which may be published during the specified period of applicability of an edition of the Technical Instructions.

2.3.1.2 **Recommendation.**— *Although an amendment to the Technical Instructions with an immediate applicability for reasons of safety may not yet have been implemented in a Contracting State, such State should, nevertheless, facilitate the movement of dangerous goods in its territory which are consigned from another Contracting State in accordance with that amendment, providing the goods comply in total with the revised requirements. [STILL TO BE DEVELOPED]*  
Location to be determined.

#### 2.3.2 Multimodal transport

**Recommendation.**— *States should make provisions to enable dangerous goods intended for air transport and prepared in accordance with the ICAO Technical Instructions to be accepted for surface transport to or from aerodromes.*

## **2.4 Limitation on the transport of dangerous goods by air**

### **2.4.1 Dangerous goods permitted for transport by air**

2.4.1.1 The State shall not permit the transport of dangerous goods as cargo or mail by air except as established in this Annex and the detailed provisions of the Technical Instructions.

2.4.1.2 The State shall not permit the carriage of dangerous goods by passengers or crew members unless specifically permitted in accordance with the provisions for dangerous goods carried by passengers and crew provided in the Technical Instructions.

### **2.4.2 Dangerous goods forbidden for transport by air unless approved or exempted**

The State shall not permit the transport of dangerous goods identified in the Technical Instructions as being forbidden for transport in normal circumstances unless exempted by the States concerned under the provisions of 2.4.2.1 or unless the provisions of the Technical Instructions indicate they may be transported under an approval granted by the States concerned in accordance with 2.4.2.2.

#### **2.4.2.2 Approvals**

Where specifically provided for in the Technical Instructions, the States concerned may grant an approval provided that in such instances an overall level of safety in transport which is equivalent to the level of safety provided for in the Technical Instructions is achieved.

*Note.— For the purpose of approvals, “States concerned” are the States of Origin and the Operator, unless otherwise specified in the Technical Instructions.*

#### **2.4.2.1 Exemptions**

2.4.2.1.1 In instances:

- a) of extreme urgency; or
- b) when other forms of transport are inappropriate; or
- c) when full compliance with the prescribed requirements is contrary to the public interest,

the States concerned may grant an exemption from the provisions of the Technical Instructions provided that in such instances every effort shall be made to achieve an overall level of safety in transport which is equivalent to the level of safety provided for in the Technical Instructions.

2.4.2.1.2 For the State of Overflight, if none of the criteria for granting an exemption are relevant, an exemption may be granted based solely on whether it is believed that an equivalent level of safety in air transport has been achieved.

*Note 1.— For the purpose of exemptions, “States concerned” are the States of Origin, Operator, Transit, Overflight and Destination.*

*Note 2.— Guidance for the processing of exemptions, including examples of extreme urgency, may be found in the Supplement to the Technical Instructions (Part S-1, Chapter 1, 1.2 and 1.3).*

#### **2.4.2 Dangerous goods forbidden for transport by air under any circumstances**

2.4.2.1 The State shall establish and manage measures such that articles and substances with inherent hazards such that the risks posed cannot be mitigated to achieve an acceptable level of safety, including those that are specifically identified by name or by generic description in the Technical Instructions as being forbidden for transport by air under any circumstances are not carried on any aircraft.

2.4.2.2 The State shall not grant exemptions for articles and substances identified in 2.4.2.1.

### **2.5 International cooperation**

2.5.1 Each Contracting State shall ensure that requests from other Contracting States for additional information with respect to dangerous goods accidents, dangerous goods incidents, and dangerous goods occurrences are met, as far as may be practicable.

### **2.6 General exceptions**

2.6.1 Articles and substances which would otherwise be classified as dangerous goods but which are required to be aboard the aircraft in accordance with the pertinent airworthiness requirements and operating regulations, or for those specialized purposes identified in the Technical Instructions, shall be excepted from the provisions of this Annex.

*Note.— This exception does not apply to articles and substances intended as replacements or which have been removed for replacement (see 6.2.2).*

### **2.7 State safety management responsibilities specific to the transport of dangerous goods by air**

*Note.— Chapter 3 to Annex 19 contains the general provisions for State safety management responsibilities which are applicable to this Annex. This section contains additional State safety management responsibilities specific to the safe transport of dangerous goods by air.*

*Note.— The safe transport of dangerous goods by air is addressed in the scope of the State safety programme (SSP).*

*Note.— Guidance on an SSP is contained in the Safety Management Manual (SMM) (Doc 9859).*

#### **2.7.1 Preliminary aviation legislation (CE 1)**

2.7.1.1 The State shall promulgate laws that enable the oversight and management of the supply chain for the safe transport of dangerous goods by air, the resolution of safety issues and the enforcement of regulations through the relevant authorities established for that purpose.

### **2.7.2 Specific operating regulations (CE 2)**

*Note.— See ... for specific dangerous goods operating regulations that the State must promulgate.*

### **2.7.3 State system and functions (CE 3)**

2.7.3.1 The State shall establish relevant authorities responsible for the management of safety with respect to the safe transport of dangerous goods by air in accordance with Annex 19

*Note.— States where the size of the aviation industry is relatively small and the level of complexity relatively low, the State may be able to implement this Standard in a cost-effective manner through arrangements with other States or an RSSO.*

2.7.3.2 The State shall use a methodology to determine its staffing requirements for the management of dangerous goods safety.

2.7.3.4 The State shall ensure that authority personnel have adequate support, credentials and transportation to accomplish, independently, their dangerous goods safety management tasks.

### **2.7.4 Qualified technical personnel (CE 4)**

*Note.— Guidance on minimum qualification requirements and training for dangerous goods technical personnel involved in the regulation and oversight of transport of dangerous goods by air is contained in Part I, Chapter 5 of the Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284SU).*

## **2.8 State safety risk management (CE 6)**

### **2.8.1 Safety management system obligation**

3.3.1.1 **Recommendation.**— *The State should encourage entities other than the operator to establish procedures for investigating safety issues related to the transport of dangerous goods by air.*

*Note.— See ... for additional State safety risk management provisions specific to dangerous goods.*

### **2.8.2 Accident and incident investigation**

States shall establish a process to investigate dangerous goods accidents and dangerous goods incidents in support of the management of safety in the State.

*Note.— Guidance on dangerous goods safety investigations can be found in [guidance DGP working group is developing].*

## **2.9 State safety promotion**

*Note.— See ... for additional State safety promotion provisions specific to dangerous goods.*

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## CHAPTER 3. PROVISION OF INFORMATION TO ICAO

### 3.1 National authority

Each Contracting State shall specify to ICAO an appropriate authority within its administration to be responsible for ensuring compliance with this Annex.

### 3.2 Notification of variations from the Technical Instructions

3.2.1 Where a Contracting State adopts different provisions from those specified in the Technical Instructions, it shall notify ICAO promptly of such State variations for publication in the Technical Instructions.

*Note.— Contracting States are expected to notify a difference to the provisions of 2.3.1.1 under Article 38 of the Convention only if they are unable to accept the binding nature of the Technical Instructions. Where States have adopted different provisions from those specified in the Technical Instructions, they are expected to be reported only under the provisions of 2.5.*

3.2.2 **Recommendation.**— *The State of the Operator should take the necessary measures to ensure that when an operator adopts more restrictive requirements than those specified in the Technical Instructions, the notification of such operator variations is made to ICAO for publication in the Technical Instructions.*

### 3.3 Difficulties encountered in the application of the Technical Instructions

3.3.1 **Recommendation.**— *Each Contracting State should inform ICAO of difficulties encountered in the application of the Technical Instructions and of any amendments which it would be desirable to make to them.*

3.3.2 **Recommendation.**— *Each Contracting State should inform ICAO of difficulties encountered in the application of the Technical Instructions and of any amendments which it would be desirable to make to them.*

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## **CHAPTER 4. SAFETY OF THE SUPPLY CHAIN**

### **4.1 Specific operating regulations**

4.1.1 Each Contracting State shall adopt regulations that address all entities in the supply chain such that the transport of dangerous goods by air is facilitated, while ensuring the risks associated with their transport are mitigated and managed to achieve an acceptable level of safety.

4.1.2 The regulations shall be in conformity with the Annexes to the Convention on International Civil Aviation and the Technical Instructions to require, at a minimum, that:

- a) articles or substances forbidden for transport in accordance with 2.4.2 are not offered or are not caused to be offered for transport;
- b) hazards associated with dangerous goods to be transported are identified in accordance with the hazard classification criteria of Part 2 of the Technical Instructions] [shippers shall classify dangerous goods in accordance with classification criteria of Part 2 of the Technical Instructions];
- c) risks associated with the identified hazards are mitigated at the package level through quantity limitations and packing and packaging requirements in accordance with Parts 3, 4 and 6 of the Technical Instructions;
- d) identified hazards and handling information are communicated to entities in the supply chain in accordance with the marking, labelling and documentation requirements of Parts 3, 4 and 5 the Technical Instructions;
- e) [risks associated with the transport of dangerous goods are further managed by the operator in accordance with Chapter 6] [all operators registered in the State develop specific policies and procedures to comply with the provisions detailed in Chapter 6];
- f) dangerous goods accidents, dangerous goods incidents and occasions when undeclared or misdeclared dangerous goods are discovered are reported in accordance with Chapter 9;
- g) personnel employed by or acting on behalf of all entities in the supply chain are competent to perform any function for which they are responsible prior to performing any of these functions through training and assessment in accordance with Chapter 9;
- h) dangerous goods are not carried in mail unless specifically permitted in accordance with Chapter 8 ; and
- i) dangerous goods are not carried by passengers or crew unless specifically permitted in accordance with Chapter 7.

4.1.3 States shall periodically review the specific operating regulations, guidance material and implementation policies for the safe transport of dangerous goods by air to ensure they remain relevant and appropriate.

### **4.2 State safety risk management**

4.2.1 The State of the Operator shall ensure that operators have processes and procedures for managing safety risks associated with the supply chain.

4.2.2 The State shall establish and maintain a process to identify hazards associated with the supply chain from safety intelligence.

4.2.3 The State shall develop and maintain a process that ensures the assessment of safety risks associated with identified supply chain hazards.

4.2.4 The State shall develop and maintain a process to ensure risks induced by interfacing entities are managed.

4.2.5 Each Contracting State shall ensure that operators do not accept cargo or mail for carriage on an aircraft engaged in commercial air transport operations unless the application of safety controls is confirmed and accounted for by a regulated agent, a known consignor, or an entity that is approved by an appropriate authority. Cargo and mail which cannot be confirmed and accounted for by a regulated agent, a known consignor, or an entity that is approved by an appropriate authority shall be subjected to additional safety measures.

### **4.3 Management of safety risks**

4.3.1 State shall establish mechanisms for the resolution of issues related to safety of the supply chain, up to and including enforcement measures.

### **4.4 State Safety promotion**

4.4.1 States shall establish and manage safety promotional activities aimed at preventing passengers from carrying dangerous goods forbidden to be carried by passengers on board an aircraft.

*Note.— See Chapter [7] for dangerous goods carried by passengers and crew.*

4.4.2 States shall establish and manage safety promotional activities aimed at preventing the introduction of dangerous goods in cargo and mail which are not in compliance with the provisions of this Annex and the Technical Instructions.

4.4.3 States shall establish measures to improve safety awareness and promote a positive safety culture throughout the supply chain.

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## CHAPTER 5. OPERATOR'S RESPONSIBILITIES

*Note 1.— Annex 19 includes safety management provisions for air operators. Further guidance is contained in the Safety Management Manual (SMM) (Doc 9859).*

*Note 2.— The carriage of dangerous goods is included in the scope of the operator's safety management system (SMS).*

### 5.1 General

5.1.1 An operator shall not carry dangerous goods as cargo unless specifically approved to do so by the State in accordance with the applicable provisions of Annex 6 [– Operation of Aircraft].

5.1.2 An operator holding a specific approval to carry dangerous goods as cargo issued by the State shall only do so in accordance with the specific approval.

5.1.3 An operator with a specific approval to carry dangerous goods as cargo that includes the carriage of radioactive material shall develop, implement and maintain a radiation protection programme as specified in the Technical Instructions.

### 5.2 Provision of Information

5.2.1 An operator shall, in the Operations or other appropriate manual made available to flight crew, cabin crew and other employees, document policies and procedures that address the carriage of dangerous goods in cargo, mail, passenger and crew baggage.

5.2.2 The documented policies and procedures established by the operator shall ensure articles and substances intended as replacements for those described in 2.6 or which have been removed for replacement are carried on an aircraft in accordance with the provisions of the Technical Instructions.

### 5.3 Acceptance for transport

5.3.1 An operator shall develop and implement procedures aimed at preventing the introduction of undeclared and misdeclared dangerous goods into air transport.

*Note.— See 5.8 concerning the reporting of dangerous goods accidents, dangerous goods incidents and instances where undeclared or misdeclared dangerous goods are identified.*

5.3.2 An operator shall develop and implement procedures to ensure that dangerous goods are not accepted for transport by air:

- a) unless the dangerous goods are accompanied by a completed dangerous goods transport document, except where the Technical Instructions indicate that such a document is not required; and
- b) until the package, overpack or freight container containing the dangerous goods has been inspected in accordance with the acceptance procedures contained in the Technical Instructions.



5.3.3 An operator shall develop and use an acceptance checklist as an aid to compliance with the provisions of 5.3.2.

#### **5.4 Inspection for damage or leakage**

5.4.1 The operator shall develop and implement procedures to ensure that packages and overpacks containing dangerous goods and freight containers containing radioactive materials shall be inspected for evidence of leakage or damage before loading on an aircraft or into a unit load device. Leaking or damaged packages, overpacks or freight containers shall not be loaded on an aircraft.

5.4.2 The operator shall develop and implement procedures to ensure that unit load devices are not loaded aboard an aircraft unless the device has been inspected and found free from any evidence of leakage from, or damage to, any dangerous goods contained therein.

5.4.3 The operator shall develop and implement procedures to ensure that any package of dangerous goods loaded on an aircraft that appears to be damaged or leaking is removed from the aircraft or arrange for its removal by an appropriate authority or organization, and thereafter shall ensure that the remainder of the consignment is in a proper condition for transport by air and that no other package has been contaminated.

5.4.4 The operator shall develop and implement procedures to ensure that packages or overpacks containing dangerous goods and freight containers containing radioactive materials are inspected for signs of damage or leakage upon unloading from the aircraft or unit load device. If evidence of damage or leakage is found, the area where the dangerous goods or unit load device were stowed on the aircraft shall be inspected for damage or contamination.

5.4.5 The operator shall develop and implement procedures to ensure that an aircraft which has been contaminated by radioactive materials shall immediately be taken out of service and not returned to service until the radiation level at any accessible surface and the non-fixed contamination are not more than the values specified in the Technical Instructions

#### **5.5 Loading and stowage**

5.5.1 The operator shall develop and implement procedures to ensure that packages and overpacks containing dangerous goods and freight containers containing radioactive materials are loaded and stowed on an aircraft in accordance with the provisions of the Technical Instructions.

5.5.2 The operator shall develop and implement procedures to ensure that packages containing dangerous goods which might react dangerously one with another are not be stowed on an aircraft next to each other or in a position that would allow interaction between them in the event of leakage.

5.5.3 The operator shall develop and implement procedures to ensure that packages of radioactive materials are stowed on an aircraft so that they are separated from persons, live animals and undeveloped film, in accordance with the provisions in the Technical Instructions.

5.5.4 The operator shall develop and implement procedures to ensure that dangerous goods loaded in an aircraft are protected from being damaged and secured in the aircraft in such a manner that will prevent any movement in flight which would change the orientation of the packages.

5.5.5 The operator shall develop and implement procedures to ensure that packages of dangerous goods bearing the "Cargo Aircraft Only" label are loaded in accordance with the Technical Instructions.

5.5.6 The operator shall develop and implement procedures to ensure that dangerous goods are not carried in an aircraft cabin occupied by passengers or on the flight deck of an aircraft, except in circumstances permitted by the provisions of the Technical Instructions.

## **5.6 Information to pilot-in-command**

The operator shall develop and implement procedures to ensure that where an aircraft is to carry dangerous goods as cargo the pilot-in-command is provided as early as practicable before departure of the aircraft with information as specified in the Technical Instructions.

## **5.7 Emergency Procedures**

5.7.1 The operator shall develop and provide to aircrew instructions as to the action to be taken in the event of emergencies arising involving dangerous goods.

5.7.2 If an in-flight emergency occurs, the pilot-in-command shall, as soon as the situation permits, inform the appropriate air traffic services unit, for the information of aerodrome authorities, of any dangerous goods on board the aircraft, as provided for in the Technical Instructions.

5.7.3 In the event of:

- a) an aircraft accident; or
- b) a serious incident where dangerous goods carried as cargo may be involved,

the operator of the aircraft carrying dangerous goods as cargo shall provide information, without delay, to emergency services responding to the accident or serious incident about the dangerous goods on board, as shown on the written information to the pilot-in-command. As soon as possible, the operator shall also provide this information to the appropriate authorities of the State of the Operator and the State in which the accident or serious incident occurred.

5.7.4 In the event of an aircraft incident, the operator of an aircraft carrying dangerous goods as cargo shall, if requested to do so, provide information without delay to emergency services responding to the incident and to the appropriate authority of the State in which the incident occurred, about the dangerous goods on board, as shown on the written information to the pilot-in-command.

*Note.— The terms “accident”, “serious incident” and “incident” are as defined in Annex 13.*

## **5.8 Reporting**

5.8.1 The operator shall develop and implement procedures to ensure that:

- a) dangerous goods accidents and dangerous goods incidents are reported to the appropriate authorities of the State of the Operator and the State in which the dangerous goods accident or dangerous goods incident occurred;
- b) where undeclared or misdeclared dangerous goods are discovered in cargo or mail a report is provided to the appropriate authorities of the State of the Operator and the State in which the dangerous goods were discovered;

- c) the operator shall report to the authority of the State of the Operator where dangerous goods are found to have been loaded on an aircraft when not in compliance with 6.5.2 or the pilot-in-command was not provided with information in accordance with 6.6;
  - d) where dangerous goods not permitted by the Technical Instructions are discovered in passenger or crew baggage by the operator, or the operator is advised of such dangerous goods that a report is submitted to the appropriate authority of the State in which this occurred.
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## **CHAPTER 6. DANGEROUS GOODS CARRIED BY PASSENGERS AND CREW**

## **CHAPTER 7. TRANSPORT OF DANGEROUS GOODS BY POST**

### **7.1 Specific operating regulations**

7.1.1 Each Contracting State shall adopt regulations that address mail articles offered for air transport by designated postal operators [and designated postal operators conducting business through an extraterritorial office of exchange (ETOE) in their State] in conformity with the Annexes to the Convention and the detailed provisions of the Technical Instructions. These regulations shall, at a minimum, ensure that the designated postal operator [and ETOE]:

- a) establishes and maintains a dangerous goods training programme;
- b) establishes policies and procedures that address the acceptance of dangerous goods in mail to those permitted by the Technical Instructions;
- c) establishes policies and procedures to ensure that mail articles containing lithium batteries permitted by the Technical Instructions are not accepted unless specifically approved to do so by the civil aviation authority of the State where the mail is accepted.
- d) develops and implements procedures for controlling the introduction of dangerous goods in mail not in compliance with the provisions of this Annex and the Technical Instructions;
- e) develops and implements reporting of dangerous goods accidents, dangerous goods incidents and occasions when undeclared or misdeclared dangerous goods are discovered in mail offered for air transport.

7.1.2 States shall periodically review the specific operating regulations, guidance material and implementation policies for the safe transport of dangerous goods by air to ensure they remain relevant and appropriate.

### **7.2 Approval of training programme**

7.2.1 Dangerous goods training programmes for designated postal operators shall be approved by the civil aviation authority of the State where the mail is accepted by the designated postal operator.

7.2.2 Dangerous goods training programmes for ETOEs shall be approved by the civil aviation authority of the State of the designated postal operator that is operating the ETOE.

### **7.3 Approval of procedures for controlling the introduction of dangerous goods in mail into air transport**

The procedures of designated postal operators [and ETOEs] for controlling the introduction of dangerous goods in mail into air transport shall be approved by the civil aviation authority of the State where the mail is accepted.

*Note 1.— In accordance with the Universal Postal Union (UPU) Convention, dangerous goods are not permitted in mail, except as provided for in the Technical Instructions.*

*Note 2.— The Universal Postal Union has established procedures to control the introduction of dangerous goods into air transport through the postal services (see the UPU Parcel Post Regulations and Letter Post Regulations).*

*Note 3.— Guidance for approving the procedures established by designated postal operators to control the introduction of dangerous goods into air transport may be found in the Supplement to the Technical Instructions (Part S-1, Chapter 3).*

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## CHAPTER 8. TRAINING PROGRAMMES

### 8.1 Establishment of training programmes

Initial and recurrent dangerous goods training programmes shall be established and maintained in accordance with the Technical Instructions.

### 8.2 Approval of training programmes

8.2.1 Dangerous goods training programmes for operators shall be approved by the appropriate authority of the State of the Operator.

*Note.— Dangerous goods training programmes are required for all operators regardless of whether or not they are approved to transport dangerous goods.*

8.2.2 **Recommendation.**— *Dangerous goods training programmes required for entities in the supply chain other than operators and designated postal operators should be approved as determined by the appropriate national authority.*

*Note 1.— Dangerous goods training programme requirements for designated postal operators are included in Chapter 7.*

*Note 2.— See 4.2.2 of Annex 6 — Operation of Aircraft, Part I — International Commercial Air Transport — Aeroplanes for surveillance of operations by a foreign operator.*

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## CHAPTER 9. DANGEROUS GOODS SAFETY INTELLIGENCE

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*Replace reporting and investigation provisions currently contained in Chapter 12 with the following new provisions. These revised provisions are based on Annex 19 with Amendment 1 incorporated. Amendments that will be incorporated in Amendment 2 are currently under development. They will likely result in the need to modify terminology.*

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*Note.— In addition to the provisions of this chapter, other provisions relative to the promotion of dangerous goods accident and incident prevention by collection and analysis of safety data and by a prompt exchange of safety information, as part of the State safety programme (SSP), are included in Annex 19 — Safety Management and, to this effect, are applicable to this Annex. Further guidance is contained in the Safety Management Manual (SMM) (Doc 9859).*

### 9.1 Safety data collection and processing systems

The State shall ensure its safety data collection and processing systems (SDCPS) capture, store, aggregate and enable the analysis of dangerous goods safety data and dangerous goods safety information in accordance with Annex 19, 5.1.

*Note 1.— Within the context of this Annex, SDCPS refers to processing and reporting systems, safety databases, schemes for exchange of information, and recorded information including but not limited to:*

- a) data and information related to safety investigations by State authorities, operators or other entities involved with the transport of dangerous goods by air;*
- b) mandatory safety reporting systems as indicated in 5.1.2 of Annex 19 and 8.1.1 of this Annex; and*
- c) voluntary safety reporting systems as indicated in 5.1.3 of Annex 19 and 8.1.2 of this Annex.*

*Note 2.— Guidance related to SDCPS is contained in the Safety Management Manual (SMM) (Doc 9859) and the [DG guidance material].*

#### 9.1.1 Mandatory safety reporting system

9.1.1.1 States shall include reporting of dangerous goods accidents, dangerous goods incidents and occasions when undeclared or misdeclared dangerous goods are discovered as part of their mandatory safety reporting systems in accordance with the provisions of Annex 19.

9.1.1.2 States' mandatory reporting systems shall include a requirement for the operator to report dangerous goods accidents and dangerous goods incidents to the appropriate authority of the State in which they occurred and to the State of the Operator.

9.1.1.3 States' mandatory reporting systems shall include a requirement for the operator to report occasions when undeclared or misdeclared dangerous goods are discovered in cargo or mail to the appropriate authority of the State in which they were discovered and the State of the Operator.



9.1.1.4 States' mandatory reporting systems shall include a requirement for the operator to report occasions when dangerous goods not permitted to be carried by passengers or crew are discovered by the operator, or the operator is advised by the entity that discovers the dangerous goods, either in the baggage or on the person, of passengers or crew members to the appropriate authority of the State in which this occurred.

*Note.— Dangerous goods permitted to be carried by passengers and crew are provided in Part 8 of the Technical Instructions.*

9.1.1.5 States' mandatory reporting systems shall include a requirement for entities other than operators to report dangerous goods accidents and dangerous goods incidents to the appropriate authority of the State in which they occurred.

9.1.1.6 States' mandatory reporting systems shall include a requirement for entities other than operators to report occasions when undeclared or misdeclared dangerous goods are discovered to the appropriate authority of the State in which they were discovered.

9.1.1.7 States' mandatory reporting systems shall include a requirement for operators to report dangerous goods occurrences in accordance with the detailed provisions in the Technical Instructions.

### **9.1.2 Voluntary safety reporting system**

9.1.2.1 States shall establish a voluntary dangerous goods safety reporting system to collect safety data and safety information from operators that is not captured by mandatory safety reporting systems in accordance with Annex 19, 5.1.

9.1.2.2 **Recommendation.**— *States should establish a voluntary dangerous goods safety reporting system to collect safety data and safety information not captured by mandatory reporting systems for entities other than operators in accordance with Annex 19, 5.1.*

### **9.1.3 Safety investigations**

States shall establish procedures for collecting data and information related to dangerous goods safety investigations which include, at a minimum:

- a) dangerous goods accidents and dangerous goods incidents;
- b) undeclared or misdeclared dangerous goods in cargo, mail or baggage; and
- c) other safety issues related to the transport of dangerous goods by air.

## **9.2 Safety data and safety information analysis**

States shall establish and maintain a process to analyse the dangerous goods safety data and dangerous goods safety information from the SDCPS and associated safety databases in accordance with Annex 19, 5.2.

### 9.3 Safety data and safety information protection

9.3.1 States shall accord protection to dangerous goods safety data captured by, and dangerous goods safety information derived from, voluntary safety reporting systems and related sources in accordance with Annex 19, 5.3.

9.3.2 **Recommendation.**— States should extend the protection referred to in 9.3.1 to safety data captured by, and safety information derived from, mandatory dangerous goods safety reporting system and related sources in accordance with Annex 19, 5.3.

### 9.4 Safety information sharing and exchange

9.4.1 The State shall share and exchange dangerous goods safety information in accordance with Annex 19, 5.4.

9.4.2 If a State, in the analysis of the dangerous goods information contained in its safety data collection and processing system (SDCPS), identifies safety issues which may pose an unacceptable risk to the global aviation safety system, that State shall forward such safety information to ICAO with a minimum of delay.

*Note 1.— Provisions for a SDCPS and safety information sharing and exchange between States are included in Annex 19. Further guidance is contained in the Safety Management Manual (SMM) (Doc 9859).*

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This may not be necessary. If it were, it would be in every Annex or at least in Annex 19.

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*Note 2.— Whenever practicable, the safety information sent to ICAO is to be prepared in one of the working languages of the Organization.*

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This may not be necessary. If it were, it would be in every Annex or at least in Annex 19.

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9.4.3 States shall provide ICAO with dangerous goods information from their SDCPS upon request to address global safety issues related to the transport of dangerous goods.

9.4.4 States shall participate in cooperative efforts with other States with the aim of eliminating unsafe practices and non-compliance with the Technical Instructions.

9.4.5 States' cooperative efforts shall include coordination of investigations of dangerous goods accidents and dangerous goods incidents, identified safety issues related to the transport of dangerous goods, non-compliance with the Technical Instructions and enforcement actions.

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## **CHAPTER 10. DANGEROUS GOODS SECURITY PROVISIONS**

Each Contracting State shall establish dangerous goods security measures, applicable to shippers, operators and other individuals engaged in the transport of dangerous goods by air, to be taken to minimize theft or misuse of dangerous goods that may endanger persons, property or the environment. These measures should be commensurate with security provisions specified in other Annexes and the Technical Instructions.

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## ATTACHMENT A TO ANNEX 18

### INTERRELATIONSHIP BETWEEN ANNEX 18 AND OTHER ANNEXES

The following describes provisions in Annexes other than 18 that have an impact on the safe transport of dangerous goods by air.

#### 1. ANNEX 6 — *OPERATION OF AIRCRAFT*

##### 1.1 Air operator certificate (Annex 6, Part I, 4.2.1, Chapter 14, Appendix 5, Appendix 6; Annex 6, Part II, 2.1.2, 2.2.3;

Annex 6, Part III, Section II, 2.2.1, Chapter 12, Appendix 1, Appendix 3)

1.1.1 Annex 6, Parts I — *International Commercial Air Transport — Aeroplanes* and Part III — *International Operations — Helicopters* prohibit an operator from engaging in commercial air transport operations unless it is in possession of a valid air operator certificate (AOC) issued by the State of the Operator. The AOC authorizes the operator to conduct commercial air transport operations in accordance with its operations specifications. The operations specifications include an indication of whether or not an operator has specific approval to transport dangerous goods as cargo. The minimum information required on the AOC and its associated operations specifications are provided in Annex 6, Part I, Appendix 6 and Annex 6, Part III, Appendix 3 to Part III. All operators have dangerous goods responsibilities, regardless of this specific approval status. High-level responsibilities for each category of operator are provided in Chapter 14 of Annex 6, Part I and Chapter 12 of Annex 6, Part III. Personnel, including third-party personnel, involved in the acceptance, handling, loading and unloading of cargo must be informed of the operator's operational approval and limitations with regard to the transport of dangerous goods. Supporting guidance is provided in Annex 6, Part I, Attachment J and Annex 6, Part III, Attachment I.

1.1.2 The issuance of an AOC by the State of the Operator is dependent upon the operator demonstrating an adequate organization, method of control and supervision of flight operations (including dangerous goods), training programmes and ground handling and maintenance arrangements consistent with the nature and extent of the operations specified. The continued validity of the AOC is dependent on the operator maintaining these requirements under the supervision of the State of the Operator.

1.1.3 Annex 6 requires Contracting States to recognize AOCs issued by another Contracting States as valid, provided the requirements under which the AOC was issued are at least equal to the applicable Standards specified by Annexes 6 and 19. States are required to establish a programme with procedures for the surveillance of operations in their territory by a foreign operator and for taking appropriate action when necessary to preserve safety. Operators are required to meet and maintain the requirements established by the States in which the operations are conducted.

1.1.4 The State of the Operator is required to establish a system for both the certification and continued surveillance of the operator in accordance with Appendix 5 to Annex 6, Part I, Appendix 1 to Annex 6, Part III, and Appendix 1 to Annex 19 to ensure the required standard operations established in 4.2 of Annex 6, Part I and 2.2 of Annex 6, Part III are maintained.<sup>5</sup> There are no AOC requirements in Annex 6, Part II — *International General Aviation — Aeroplanes*, but it specifies that provisions for carriage of dangerous goods are contained in Annex 18. It requires the handling of dangerous goods to be included in the Operations Manual.

## **1.2 Specific approval, approval and acceptance actions** **(Annex 6, Part I, Attachment D, 2.1;** **Annex 6, Part III, Attachment C, 2.1)**

1.2.1 Annex 6, Parts I and III categorize actions taken by a State on matters submitted for review as specific approvals, approvals, or acceptances depending on the nature of the response by the State to the matter submitted for its review. A specific approval is an approval which is documented in the Operations Specifications for Commercial Air Transport. An approval is an active response by the State to a matter submitted for its review. An approval constitutes a finding or determination of compliance with the applicable Standards. An approval will be evidenced by the signature of the approving official, the issuance of a document or certificate, or some other formal action taken by the State. An acceptance does not necessarily require an active response by the State to a matter submitted for its review. Specific approvals, approvals and acceptances are forms of authorizations. An authorization entitles an operator, owner or pilot-in-command to undertake the authorized operations. Annex 18 and the Technical Instructions refer to approvals to transport certain dangerous goods differently and defines it ...

1.2.2 The State should make or arrange for a technical safety evaluation before issuing the specific approval, approval or acceptance. The evaluation should:

- a) be accomplished by a person with specific qualifications to make such a technical evaluation;
- b) be in accordance with written, standardized methodology; and
- c) where necessary to safety, include a practical demonstration of the air operator's actual ability to conduct such an operation.

1.2.3 Guidance on air operation certification and validation, including specific approvals, approvals and acceptance actions, is provided in Part I, Attachment D and Part III, Attachment C.

## **1.3 Training** **Annex 6, Part I, 9.3 e), 12.4 e), 14.2 a), 14.3 a);** **Annex 6, Part III, 7.3 d), 10.3 e), 12.3 a), 12.4 a))**

1.3.1 Annex 6, Parts I and III contain the following dangerous goods training requirements applicable to operators:

- a) Dangerous goods training is required to be included in the ground and flight training programme that the operator is required to establish and maintain, approved by the State of the Operator, to ensure that all flight crew members are adequately trained to perform their assigned duties including knowledge and skills related to the transport of dangerous goods. Training is required on a recurrent basis, as determined by the State of the Operator, and is required to include an assessment of competence (9.3 e)).
- b) Dangerous goods training is required to be included in the cabin crew training programme that the operator is required to establish and maintain, approved by the State of the Operator, to ensure that each person is aware of the types of dangerous goods which may, and may not, be carried in a passenger cabin (12.4 e)). Training is required before persons are assigned as a cabin crew member and completed annually through recurrent training.
- c) Dangerous goods training programmes that meet the requirements of Annex 18, the applicable requirements of the Technical Instructions and the requirements of the State's regulations are required to be established for all operators, regardless of whether or not they have specific approval for the transport of

dangerous goods as cargo (14.2 and 14.3).

**1.4 Operations manual**  
**(Annex 6, Part I; 4.2.3, 14.2 b), 14.3 b), Appendix 2, 2.1.35;**  
**Annex 6, Part II, 3.4.2.2, Attachment 3.A s);**  
**Annex 6, Part III, )**

1.4.1 Annex 6 requires the operator to have an up-to-date operations manual for the use and guidance of operations personnel. Parts I and III require a copy of the manual together with all amendments and/or revisions to be provided to the State of the Operator for review and acceptance and, where required, approval. Parts I and III require the following specific items, which is in addition to what is required by 9.2 of this Annex, to be included in the operations manual related to dangerous goods:

1.4.2 For all operators regardless of whether or not they have specific approval to transport dangerous goods:

- a) details of the dangerous goods training programme (14.2 a) and 14.3 a));
- b) policies and procedures to meet, at a minimum, the requirements of Annex 18, the Technical Instructions and the State's regulations to allow operator personnel to:
  - 1) identify and reject undeclared dangerous goods, including COMAT classified as dangerous goods; and
  - 2) report to the appropriate authorities of the State of the Operator and the State in which it occurred any:
    - i) occasions when undeclared dangerous goods are discovered in cargo or mail; and
    - ii) dangerous goods accidents and incidents.
- c) information and instructions on the carriage of dangerous goods, in accordance with Chapter 14, including action to be taken in the event of an emergency (Annex 6; Appendix 2, 2.1.35)

1.3.3 In addition to 1.3.2 a) through c), for operators with a specific approval for the transport of dangerous goods as cargo:

- a) policies and procedures to meet, at a minimum, the requirements of Annex 18, the Technical Instructions and the State's regulations to allow operator personnel to:
  - 1) identify and reject misdeclared dangerous goods, including COMAT classified as dangerous goods;
  - 2) report to the appropriate authorities of the State of the Operator and the State in which it occurred any occasions when misdeclared dangerous goods are discovered in cargo or mail;
  - 3) report to the appropriate authorities of the State of the Operator any occasions when dangerous goods are discovered to have been carried:
    - i) when not loaded, segregated, separated or secured in accordance with the Technical Instructions, Part 7, Chapter 2; and
    - ii) without information having been provided to the pilot-in-command;
- b) accept, handle, store, transport, load and unload dangerous goods, including COMAT classified as dangerous goods as cargo on board an aircraft; and

- c) provide the pilot-in-command with accurate and legible written or printed information concerning dangerous goods that are to be carried as cargo.

### **1.5 Cargo compartment safety (Annex 6, Part I; Chapter 15)**

1.5.1 Annex 6, Part I, Chapter 15 requires that the State of the Operator to ensure that the operator establishes policies and procedures for the transport of items in the cargo compartment, which include the conduct of a specific safety risk assessment and provides specific items that must be included in the safety risk assessment. These are the hazards associated with the properties of the items to be transported, the capabilities of the operator, operational considerations, the capabilities of the aeroplane and its systems, the containment characteristics of unit load devices, packing and packaging, the safety of the supply chain for items to be transported, and the quantity and distribution of dangerous goods items to be transported. Guidance to support operators in conducting these safety risk assessments is provided in *Guidance for Safe Operations Involving Aeroplane Cargo Compartments* (Doc 10102).

1.5.2 Annex 6, Part I, Chapter 15 requires the elements of the cargo compartment(s) fire protection system, as approved by the State of Design or State of Registry, and a summary of the demonstrated cargo compartment fire protection certification standards to be provided in the aeroplane flight manual or other documentation supporting the operational of the aeroplane. Guidance to support this requirement is provided in Doc 10102. Annex 8 — *Airworthiness of Aircraft* contains complimentary Standards (see paragraph 2).

1.5.3 Annex 6, Part I, Chapter 15 requires the operator to establish policies and procedures that address the items to be transported in the cargo compartment that ensure, to a reasonable certainty, that in the event of a fire involving those items, it can be detected and sufficiently suppressed or contained by the elements of the aeroplane design associated with cargo compartment protection, until the aeroplane makes a safe landing. Guidance on establishing these policies and procedures is provided in Doc 10102

### **1.7 Supporting Guidance (Annex 6, Part I, Attachments D and J; Annex 6, Part III, Attachments C and I)**

Guidance concerning actions required by States in connection with the operator certification requirements is provided in Attachment D to Part I and Attachment C to Part III. The attachments specify that dangerous goods are subject to specific approval actions as an indication of formal action on the part of the State of the Operator resulting in an addition to the operations specification.

## **2. ANNEX 8 — *AIRWORTHINESS OF AIRCRAFT***

### **2.1 Systems design features for Cargo compartment protection (Annex 8, Part IIIA, 4.1 g) Part IIIB, 4.2 g); Part IVB, 4.2 g) and Part VB, 4.2 g))**

2.1.1 Annex 8 requires that, for aeroplanes over 5 700 kg for which application for certification was submitted on or after 2 March 2004, special consideration be given to design features that affect the ability of the flight crew to maintain controlled flight including requirements for:

- a) each cargo compartment to be equipped with a built-in fire detection system, and a means to suppress a fire, except when the presence of a fire would be easily discovered by a crew member while at their station and the crew member has a means to extinguish it rapidly;
- b) as of 7 March 2021, for aeroplanes of a maximum certificated take-off mass in excess of 45 000 kg or with a passenger seating capacity greater than 60, cargo compartment fire suppression systems, including their extinguishing agents, to be designed so as to take into account a sudden and extensive fire such as could be caused by an explosive or incendiary device; and
- c) for those aeroplanes for which the individual certificate of airworthiness is first issued on or after 1 January 2025, the elements of the aeroplane design associated with cargo compartment fire protection, and a summary of the demonstrated standards that were considered in the process of aeroplane certification to be included in the required aeroplane documentation and made available to the operator.

Guidance for meeting the requirement described in 2.1.1 c) is provided in Doc 10102.

2.1.1 Annex 8 requires that, for helicopters for which application for certification was submitted on or after 13 December 2007 and for aeroplanes not exceeding 5 700 kg for which application for certification was submitted on or after 7 March 2021, special consideration be given to design features that affect the ability of the flight crew to maintain controlled flight. It recommends for these aircraft that this include the elements of the aeroplane design associated with cargo compartment fire protection, and a summary of the demonstrated standards that were considered in the process of aeroplane certification be included in the required aeroplane documentation and made available to the operator.



### **3. ANNEX 19 – SAFETY MANAGEMENT (Annex 19, Foreword and Chapter 3)**

3.1 Annex 19 is applicable to safety management functions related to, or in direct support of, the safe operation of the aircraft, including dangerous goods operations. It assists States in managing aviation safety risks by promoting the continued evolution of a proactive strategy to improve safety performance. This is critical to the safe transport of dangerous goods, given the increasing complexity of the global air transportation system and the interrelated aviation activities required to assure the safe operation of aircraft. Annex 19 provides a foundation for this proactive safety strategy by requiring:

- a) the State to implement a State safety programme (SSP) as outlined in Chapter 3 of the Annex; and
- b) operators of aeroplanes or helicopters authorized to conduct international commercial air transport in accordance with Annex 6, Part I or III, Section II respectively to implement safety management systems (SMS) as outlined in Chapter 4 of the Annex.

Each of these systematically addresses safety risks. An overview of the SSP and what would be the minimum expectations for States to manage dangerous goods safety within the SSP are provided in paragraph 3.2. An overview of SMS is provided in paragraph 3.3.

#### **3.2 State Safety Programme (SSP)**

3.2.1 The SARPs that support the establishment and maintenance of the SSP are structured into four components in Chapter 3 of Annex 19:

- a) State safety policy, objectives and resources;
- b) State safety risk management;
- c) State safety assurance; and
- d) State safety promotion.

These components combine elements of both prescriptive and performance-based approaches to the management of safety by integrating traditional critical elements (CE) of a State safety oversight system, which aim to ensure the effective implementation by the aviation industry of prescriptive SARPs and constitute the foundation of an SSP, with elements that support proactive safety management and safety performance principles. They are collectively referred to as the integrated SSP. The implementation of an SSP requires coordination among multiple authorities responsible for the aviation functions of the State. This may be particularly complex for the safe transport of dangerous goods which may involve entities, including government organizations, beyond aviation. A general description of these elements as they relate to the safe transport of dangerous goods is described below.

*Note 1.— Detailed guidance on critical elements of a State safety oversight system is provided in the Safety Oversight Manual (Doc 9734).*

*Note 2.— Detailed guidance on the safety management elements of an SSP is provided in Chapter 8 of the Safety Management Manual (SMM) (Doc 9859). This is complimented by examples, tools and supporting educational material provided on the safety management implementation website ([www.icao.int/SMI](http://www.icao.int/SMI)).*

*Note 3.— An indicative list of dangerous goods tasks that support the implementation of the integrated SSP is provided in the Supplement to the Technical Instructions for the Safe Transport of Dangerous Goods by Air (Doc 9284SU) (Part S-I, Chapter 5, Attachment II).*

### 3.2.1.1 State safety policy, objectives and resources

The first SSP component required by Annex 19 defines how a State will manage safety throughout its aviation system. It includes the requirements, obligations, functions and activities of the different State authorities related to the SSP, as well as the broad safety objectives to be achieved. It involves five of the eight critical elements:

- a) **Primary aviation legislation (CE-1).** Annex 19, Appendix 1 requires States to promulgate a comprehensive and effective aviation law, commensurate with the size and complexity of the State's aviation activity and consistent with the requirements contained in the Convention on International Civil Aviation, to enable the oversight and management of civil aviation safety and the enforcement of regulations through the relevant authorities established for that purpose. Annex 6, Part I, Appendix 5 specifies how primary aviation legislation applies to international commercial air transport operators by requiring the State of the Operator to enact and implement laws that enable the State to regulate the certification and continued supervision of air operators and the resolution of safety issues identified by the authority and to ensure that compliance will result in an acceptable level of safety performance for the operations undertaken. States will also need to enact and implement laws that enable its relevant authorities to manage safety and enforce regulations to ensure compliance with regulations for dangerous goods functions having an impact on the air transport supply chain that are performed by entities other than the operator.

Annex 19, Chapter 3 recommends that States establish an enforcement policy that specifies the conditions and circumstances under which service providers with an SMS, which would include operators authorized to conduct international commercial air transport, are allowed to deal with, and resolve, events involving certain safety issues, internally within the context of their SMS and to the satisfaction of the appropriate State authority.

*Note.— Detailed guidance on primary aviation legislation (CE-1) can be found in Doc 9734, Part A and in Doc 9859, Chapter 8.*

- b) **Specific operating regulations (CE-2).** Annex 19, Appendix 1 requires States to promulgate regulations to address national requirements emanating from the primary aviation legislation for standardized operational procedures, products, services, equipment and infrastructures in conformity with the Annexes to the Convention on International Civil Aviation. This would include the adoption of regulations that provide for the safe transport of dangerous goods throughout the supply chain in accordance with this Annex and which conform with the Technical Instructions. Annex 19 requires States to periodically review specific operating regulations, guidance material and implementation policies to ensure they remain relevant and appropriate. *States should have a process that ensures dangerous goods regulations are reviewed periodically to ensure they remain aligned with Annex 18 and the Technical Instructions.*

Doc 9734, Part A emphasizes that compliance with the State's regulatory requirements is obligatory but that exemptions or exceptions may be granted by the States in instances where full compliance is not feasible. It further emphasizes that such measures must be supported by appropriate, robust and documented safety risk assessments and imposition of limitations, conditions or mitigation measures, as appropriate.

*Note 1.— Detailed guidance on specific operating regulations (CE-2) can be found in Doc 9734, Part A and in Doc 9859, Chapter 8.*

*Note 2.— Specific guidance on the granting of exemptions for dangerous goods transport is provided in Doc 9284SU, Part S-1, Chapter 1.*

- c) **State system and functions (CE-3).** Annex 19, Appendix 1 requires:

- 1) States to establish relevant authorities supported by sufficient and qualified personnel and provided with adequate financial resources for the management of safety;
- 2) State authorities to have stated safety functions and objectives to fulfil their safety management responsibility;
- 3) States to ensure that personnel performing safety oversight functions are provided with guidance that addresses ethics, personal conduct and the avoidance of actual or perceived conflicts of interest in the performance of official duties;

Annex 19, Chapter 3 further recommends that:

- a) States identify, define and document the requirements, obligations, functions and activities regarding the establishment and maintenance of the SSP, including the directives to plan, organize, develop, maintain, control and continuously improve the SSP in a manner that meets the State's safety objectives;
- b) States establish a safety policy and safety objectives that reflect their commitment regarding safety and facilitate the promotion of a positive safety culture in the aviation community;
- c) the safety policy and safety objectives should be published and periodically reviewed to ensure that they remain relevant and appropriate to the State.

States should describe the aviation system and the various State aviation authorities in a civil aviation system description as a starting point to implement the SSP. It should include the interfaces within the organization, as well as interfaces with external organizations that contribute to the safe delivery of services. It is important to consider all interfaces applicable to the safe transport of dangerous goods, which will normally involve non-aviation specific entities.

Inspectors play an important role in ensuring air operators are fulfilling their safety responsibilities. As such, Annex 6, Part I, Appendix 5 requires the State of the Operator to ensure that the authority is responsible for the safety oversight of air operators. Inspectors are a subset of personnel performing safety oversight functions. Annex 6, Part I, Appendix 5 therefore specifically requires the State of the Operator to use a methodology to determine its inspector staffing requirements according to the size and complexity of civil air operations in that State, and recommends that this methodology be documented. It also requires the State of the Operator to ensure that authority inspectors have adequate support, credentials and transportation to accomplish, independently, their certification and continued surveillance tasks.

The scope of Annex 18 extends beyond the scope of Annex 6, since there are different entities in the supply chain that are not overseen by the standards and recommended practices of operation of aircraft. For the safe transport of dangerous goods by air, each State is required to determine its specific staffing requirements for the management of dangerous goods safety according to the size and complexity of dangerous goods air transport activities in their State. [The methodology used to determine the staffing requirements should/must consider the size of dangerous goods supply chain in that State.]

*Note.— Detailed guidance on State system and functions (CE-3) can be found in Doc 9734, Part A and in Doc 9859, Chapter 8.*

- d) **Qualified technical personnel (CE-4).** Annex 19, Appendix 1 requires States to establish minimum qualification requirements for the technical personnel performing safety-related functions and provide for appropriate initial and recurrent training to maintain and enhance their competence at the desired level and to implement a system for the maintenance of training records for technical personnel.

These qualification requirements [must/should] be aligned with each of the functions that need to be performed by State technical personnel through initial and recurrent training. States must ensure an appropriate competency level that supports processes and procedures necessary to develop and implement dangerous goods related elements of the SSP. For technical personnel responsible for areas such as operations, airworthiness and other subjects, relevant dangerous goods qualifications [or competencies] may be necessary for them to perform their safety functions. For dangerous goods technical personnel, qualification requirements are expected to be more specific and advanced to provide them the competencies necessary to perform their safety management responsibilities related to the transport of dangerous goods.

*Note 1.— Detailed guidance on qualified technical personnel (CE-3) can be found in Doc 9734, Part A and in Doc 9859, Chapter 8*

*Note 2.— Specific guidance on inspector qualifications can be found in Doc 10070, Chapter 2 [\*\*this text should only be included if CASI Manuel becomes official]*

*Note 3.— Specific guidance for dangerous goods technical personnel can be found in the Supplement to the Technical Instructions, Part S-I, Chapter 5.*

- e) **Technical guidance, tools and provision of safety-critical information (CE-5).** Annex 19, Appendix 1 requires States to provide appropriate facilities, comprehensive and up-to-date technical guidance material and procedures, safety-critical information, tools and equipment, and transportation means, as applicable, to the technical personnel to enable them to perform their safety oversight functions effectively and in accordance with established procedures in a standardized manner. It also requires States to provide technical guidance to the aviation industry on the implementation of relevant regulations. Annex 6, Part I, Appendix 5 specifies how this applies to international commercial air transport operators by requiring the State of the Operator to ensure that authority inspectors are provided with technical guidance manuals containing the policies, procedures and standards to be used in the certification and continued surveillance of air operators and to ensure that authority inspectors are provided with technical guidance manuals containing the policies, procedures and standards to be used in the resolution of safety issues, including enforcement. Annex 6, Part I, Appendix 5 also requires that the State of the Operator ensures that authority inspectors are provided with technical guidance manuals that address ethics, personal conduct and the avoidance of actual or perceived conflicts of interest in the performance of official duties. The technical guidance, tools and provisions for safety-critical information will also need to include policies, procedures and standards to be used in the resolution of safety issues involving entities performing dangerous goods functions within the supply chain other than those performed by the operator.

*Note.— Detailed guidance on Technical guidance, tools and provision of safety-critical information (CE-5) can be found in Doc 9734, Part A and in Doc 9859, Chapter 8.*

### 3.2.1.2 State safety risk management

The second SSP component required by Annex 19 defines how a State manages safety risks. It includes two of the eight critical elements and four proactive elements aimed at identifying and addressing precursors and contributors of accidents and to strategically manage safety resources to maximize safety improvements. These are:

- a) **Licensing, certification, authorization and approval obligations (CE-6).** Annex 19, Appendix 1 requires States to implement documented processes and procedures to ensure that individuals and organizations performing an aviation activity meet the established requirements before they are allowed to exercise the privileges of a licence, certificate, authorization or approval to conduct the relevant aviation activity. Annex 6, Part I, Appendix 5 specifies how this applies to international commercial air transport operators by requiring the State of the Operator to require, prior to commencement of new commercial air transport operations, air operators to demonstrate that they can safely conduct the proposed operations. This includes a demonstration that air operators can safely conduct dangerous goods operations, commensurate with the

complexity of operations in accordance with Annex 6, Part I, Chapter 15, regardless of whether or not the operator seeks specific approval to transport dangerous goods as cargo. Attachment D to Annex 6, Part I contains guidance concerning actions required by States in connection with operator validation requirements, including the categorization of actions the State may take such as specific approvals, approvals or acceptances. Attachment D also specifies that the State should arrange for a technical safety evaluation before issuing a specific approval, approval or acceptance and that the evaluation should be accomplished by a person with specific qualifications to make the technical evaluation and be in accordance with a written, standardized methodology. For dangerous goods, this would involve documented processes and procedures for issuing approvals or exemptions to the operator and other entities in the supply chain to transport dangerous goods that are normally forbidden for transport by air or where the Technical Instructions specify that an approval is required. States will also need to implement documented processes and procedures to evaluate applications from

- b) States are obligated to require that service providers which are under their authority and listed in Annex 19, Chapter 4, to implement an SMS. This includes operators of aeroplanes or helicopters authorized to conduct international commercial air transport in accordance with Annex 6, Part I or Part III, and approved maintenance organizations providing services to such operators. Annex 19, Chapter 4 requires that the SMS of the operator is to be made acceptable to the State of the Operator and the SMS of approved maintenance organizations to be made acceptable to the State(s) responsible for the organization's approval. Annex 19, Chapter 4.1.4 specifies that maintenance activities must be included in the scope of the operator's SMS, when they are conducted by a maintenance organization which is not approved but provides maintenance services under a system which is in accordance with Annex 6, Part I, 8.1.2 b) or Part III Section II.

When dangerous goods are shipped by approved maintenance organizations, such organisations must ensure that the hazards are identified and associated safety risks are managed through their SMS. When dangerous goods are shipped by maintenance organizations which are not approved, it is the Operators responsibility to ensure that hazards related to its interfaces are identified and associated safety risks are managed through its SMS.

Note.- Additional guidance related to the shipping of operator material is provided in Doc 10102

Additionally, States may consider the need to extend the SMS applicability to other entities in the supply chain in accordance with Annex 19 as a safety risk control to manage identified and emerging safety risks.

- c) **Accident and incident investigation.** Annex 19, Chapter 3 requires that States establish a process to investigate accidents and incidents in accordance with Annex 13, in support of the management of safety in the State. Annex 13 requires the State to establish an accident investigation authority that is independent from State aviation authorities and other entities that could interfere with the conduct or objectivity of an investigation. The Safety Management Manual encourages investigations outside of those mandated by Annex 13 as they provide useful safety information to support safety performance improvement. These may be conducted by both State authorities and service providers and should focus on identified hazards and safety risks and opportunities for improvement, not on blame or punishment. Dangerous goods accidents and dangerous goods incidents may necessitate State investigation of entities in the supply chain. They should conclude with clearly-defined findings and recommendations that identify how safety deficiencies are eliminated or mitigated.
- d) **Hazard identification and safety risk assessment.** Annex 19, Chapter 3 requires that States establish and maintain a process to identify hazards from collected safety data and to develop and maintain a process that ensures the assessment of safety risks associated with these hazards. This would include processes to identify hazards from data collected through the dangerous goods reporting and dangerous goods safety investigations required through this Annex and processes to ensure the assessment of safety risks associated with these hazards. The Safety Management Manual provides guidance on the collection of internal and external data and on the safety risk management process.
- e) **Management of safety risks.** Annex 19, Chapter 3 encourages States to manage safety risks using both the traditional approach that focuses on compliance with prescriptive regulations and a risk-based approach to managing risk.

The traditional approach requires States to establish mechanisms for the resolution of safety issues (CE-8) by using a documented process to take appropriate actions, up to and including enforcement measures, to resolve identified safety issues in a timely manner through a system which monitors and records progress, including actions taken by individuals and organizations performing an aviation activity in resolving such issues. This applies to any individual or organization performing functions related to the safe transport of dangerous goods by air.

The risk-based approach recommends that States develop and maintain a process to manage safety risks. The Safety Management Manual emphasizes that the objective of this is to ensure safety risks are controlled and an acceptable level of safety performance is achieved. The appropriate State aviation authority does this by developing, documenting and recommending appropriate safety risk mitigation or safety risk control strategies. Examples of safety risk control strategies include direct intervention with an operator, individuals or organizations involved with the safe transport of dangerous goods throughout the supply chain, implementing additional policies or regulations, issuing operational directives, or influencing through safety promotional activities.

Relying solely on the traditional compliance-based approach to managing safety risks may not be sufficient for the growing and increasingly complex air cargo system. Supplementing it with a risk-based approach is becoming increasingly necessary for the management of safety risks associated with dangerous goods throughout the supply chain.

### 3.2.1.3 State safety assurance

The third SSP component required by Annex 19 defines how a State assures its functions are achieving their intended safety objectives and targets. It includes one critical element and one proactive element:

- a) **Surveillance obligations (CE-7).** Annex 19, Appendix 1 requires States to implement documented surveillance processes, by defining and planning inspections, audits and monitoring activities on a continuous basis, to proactively assure that aviation licence, certificate, authorization and approval holders continue to meet the established requirements. This includes the surveillance of personnel designated by the Authority to perform safety oversight functions on its behalf. Annex 6, Part I, Appendix 5 requires the State of the Operator to use an ongoing surveillance plan to confirm that operators continue to meet the relevant requirements for initial certification and that each air operator is functioning satisfactorily. This would include the surveillance of the operator's dangerous goods responsibilities.

Annex 19, Chapter 3 also recommends States establish procedures to prioritize inspections audits and surveys towards those areas of greater safety concern or need. It lists organizational risk profiles, outcomes of hazard identification and risk assessment, and surveillance outcomes as examples of events that may provide information for the prioritization of inspections, audits and surveys. It also recommends that States periodically review the safety performance of individual service providers.

- b) **State safety performance.** Annex 19, Chapter 3 requires States to establish an acceptable level of safety performance to be achieved through its SSP, which can be achieved through the implementation and maintenance of the SSP as well as safety performance indicators and targets showing that safety is effectively managed and built on the foundation of implementation of existing safety-related SARPs.

Annex 19, Chapter 3 includes the following recommendations related to State safety performance:

- 1) that States develop and maintain a process to evaluate the effectiveness of actions taken to manage safety risks and resolve safety issues;
- 2) that States evaluate the effectiveness of their individual SSPs to maintain or continuously improve their overall level of safety performance.

#### **3.2.1.4 State safety promotion**

The fourth SSP component required by Annex 19 defines how States can promote a positive safety culture within the State aviation organization and the entire aviation community. It recommends that States promote safety awareness and the sharing and exchange of safety information to achieve this. It includes “identifying accessible safety training for the aviation community” as an example of a one way to promote safety awareness. State safety promotion for users of the aviation system including passengers, crew and entities throughout the supply chain is essential to the management of safety risks associated with the transport of dangerous goods.

### **3.3 Safety Management Systems (SMS)**

3.2.1 Annex 19, Chapter 4 requires the SMS of a service provider to be established in accordance with framework elements contained in Appendix 2 of the Annex and to be commensurate with the size of the service provider and the complexity of its aviation products or services. It also requires that the State ensures the service provider develops a plan to facilitate SMS implementation. The framework includes the same four components as the SSP, but the elements within each component are different. Guidance is provided in Chapter 9 of the 9859 .

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## **ATTACHMENT B**

### **DANGEROUS GOODS SAFETY MANAGEMENT**

#### **Difference between the operator's SMS and State Safety Risk Management**

The operator's SMS identifies hazards and manages the associated risks to the specific operation. Conversely, States are obligated to:

- a) establish mechanisms for the management of dangerous goods safety issues for all entities within their State performing any function prescribed in the Technical Instructions; and
- b) understand and manage the risks associated with the total aviation system and concerning all air transport operations conducted within the State (including foreign operators).

Accordingly, the safety risk picture of a State will likely look different from that of a specific operator because the scope is broader.

#### **Challenges to Maintaining an Acceptable Level of Safety**

- a) traffic growth
- b) cargo growth
- c) changing business models
- d) increasingly complex and dynamic environment
- e) increased need for civil aviation safety inspectors (CASIs)
- f) increased competition = smaller pool of CASIs

#### **How Are Dangerous Goods Safety Risks Identified**

Dangerous goods safety risks may be identified from:

- a) dangerous goods safety information from the SDCPS and associated safety database
- b) inspections, audits and surveys
- c) the SMS of operators
- d) proactive hazard identification, for example in response to emerging technologies and supply chain business models.

It should be noted that an absence of safety data does not necessarily mean that there is an absence of risk. States should therefore be satisfied that the rate of reporting to the SDCPS by each entity is reflective of its activities.



**Examples Dangerous Goods Hazards**

Fire, explosion, or other aircraft damage caused by:

- a) the improper carriage of declared dangerous goods within cargo or mail;
- b) undeclared dangerous goods within cargo or mail;
- c) the carriage of lithium batteries in checked baggage;
- d) the carriage of dangerous goods which a passenger is forbidden from carrying; or
- e) incorrectly stowed/prepared passenger electric mobility aids

resulting in loss of control and/or an unsurvivable aircraft environment.

**Potential outcomes of State Dangerous Goods Safety Management:**

- a) Establishment of SPIs
  - b) Review of the specific operating regulations, guidance material and implementation policies for the safe transport of dangerous goods by air
  - c) Safety promotion campaigns aimed at entities and/or passengers
  - d) Prioritizing inspections, audits, surveys and enforcement activities towards those areas of greater safety concern or need.
  - e) Engagement and cooperation with other States if the most significant risks are considered to emanate from outside of the State's aviation system.
  - f) Review of the staffing requirements for the management of dangerous goods safety
  - g) Promulgation of safety issues which may pose an unacceptable risk to the global aviation safety system to ICAO.
- — — — —

**ATTACHMENT C**

**GUIDANCE WITH RESPECT TO ESTABLISHING A NATIONAL AUTHORITY FOR  
DANGEROUS GOODS**

**National Authority (2.7 of current Annex 18)**

When designating an appropriate authority within its administration to be responsible for ensuring compliance with Annex 18, the Technical Instructions and the dangerous goods related provisions of Annex 6, each Contracting State should address the following mandatory functions:

- a) Development and maintenance of operating regulations for the transport of dangerous goods by air;
- b) Notifying ICAO of variations from the Technical Instructions;
- c) Implementing dangerous goods security provisions;
- d) Inspection, surveillance and enforcement;
- e) Investigating and compiling information on dangerous goods accidents, dangerous goods incidents and discoveries of undeclared dangerous goods;
- f) Managing safety risks associated with the transport of dangerous goods by air;
- g) State safety promotion.
- h) Approval of operators transporting dangerous goods as cargo in accordance with the provisions of Annex 6 — Operation of Aircraft;
- i) Approval of the dangerous goods training programmes for operators in accordance with the provisions of Annex 6 — Operation of Aircraft;
- j) Approval of the procedures of designated postal operators for controlling the introduction of dangerous goods in mail into air transport;
- k) Approval of dangerous goods training programmes for designated postal operators;
- l) Approval for the designated postal operators to introduce the acceptance of lithium batteries; and
- m) Approval of dangerous goods training programmes required for entities other than operators and designated postal operators as determined by the appropriate national authority.

In addition, States should address the following functions as appropriate to the dangerous goods activities conducted within the State:

- a) Transport approvals and exemptions as per Parts 1;1.1.2 and 1;1.1.3 of the Technical Instructions;
- b) Classification of:
  - i) Explosives other than substances that are listed by their proper shipping name in the Dangerous Goods List;

- ii) Unlisted self-reactive substances and organic peroxides; and
- iii) Oxidizing substances in the event of divergence between test results and known experience;
- c) Approvals related to the transport of radioactive material; and
- d) Packaging approvals and registrations.

Where the designated authority assigns certain functions to other specialised competent authorities within the State, this should be addressed through a written agreement which sets out the responsibilities and deliverables of each party, such as a memorandum of understanding.

States may also delegate functions to safety oversight organisations (SOOs) within or outside of the State. For example, the ICAO global aviation safety oversight system (GASOS) enables the strengthening of State safety oversight capabilities, by providing States with a range of solutions for the delegation of safety oversight functions or activities to recognized competent SOOs. When a State delegates safety oversight functions to a recognized SOO, the State retains its responsibilities and obligations under the Convention on International Civil Aviation, however, the scope and depth of USOAP CMA activities for that State will be reduced, as applicable, depending on the functions delegated and on the associated levels of delegation.

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**ATTACHMENT D**  
**STATE VARIATIONS**

Article 37 of the Convention on International Civil Aviation stands up for the adoption of international standards and procedures aiming for collaboration between different States to secure the highest practicable degree of uniformity in regulations, standards, procedures, and organization. Although uniformity is aimed, sometimes a State may choose to adopt a procedure that is different than the one presented in the Technical Instructions.

If that procedure is more restrictive than the one presented in the Technical Instructions, than a State variation needs to be sent to ICAO and published in the Technical Instructions, according to Annex 18; 2.5. It is important to note that a State variation must be preceded by its given force of law through national legislation. That means the State has to establish these different procedures in its national regulations before making them officially published as State variations.

Sometimes, a State variation may originate from national legislations other than aviation regulations. Therefore, State variations may be sent to ICAO by government organizations other than the civil aviation authority when different regulatory authorities play distinct roles for specific aspects of the transport of dangerous goods by air.

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**ATTACHMENT E****INTERNATIONAL VERSUS DOMESTIC OPERATIONS****Suggested Guidance**

The transport of dangerous goods is regulated to prevent as far as possible accidents to persons, or damage to property, the environment, the means of transport employed or to other goods being carried simultaneously. In alignment with this principle, the aim of any regulations should be to facilitate transport of dangerous goods safely and making transport feasible by eliminating or reducing risk to a minimum.

Due to national requirements a State may deem it necessary to establish its own national standards, regulations, or procedures for domestic civil aviation operations with regards to the transport of dangerous goods. When developing national regulations, these should not impede the movement of goods other than those that are too dangerous to be accepted for transport by air.

States should also consider principles such as those on facilitation of formalities for international civil aviation contained in Article 22 of the Convention, in which each contracting State agrees amongst other things, “to adopt all practicable measures, to prevent unnecessary delays to aircraft, crews, passengers and cargo”.

The recommendations contained in the Model Regulations on the Transport of Dangerous Goods, which have been developed by the Committee of Experts on the Transport of Dangerous Goods, are addressed to government organizations concerned with regulations for the transport of dangerous goods, when developing or revising regulations for which they are responsible.

The Model Regulations encompass a system that covers the principles of classification and definition of classes of dangerous goods, the listing of such goods, general packing requirements, testing procedures, marking labelling, transport documents and special requirements related to specific classes of dangerous goods.

These should be considered as a reference for the development of national domestic regulations to govern various modes of transport of dangerous goods, which may contribute where necessary, to the harmonisation between national and international principles. The use of these recommendations will also provide uniformization in the regulations governing all modes of transport, although modal regulations for other modes of transport may apply different requirements for operational reasons.

In addition, the State should ensure that the responsibilities of and training requirements for operators, entities or agents acting on behalf of the operators, shippers and all other entities involved the domestic supply chain are established.

When a State develops national regulations, procedures or provisions for domestic civil aviation operations which differ from the Technical Instructions, states should implement an effective means to make these available to all entities involved in the transport of dangerous goods which operate domestically and to ensure that there are no breaches of International SARPs or procedures, when the dangerous goods transition from domestic to international civil aviation operations, or via other modes of transports.

The State should also ensure that the carriage of dangerous goods in domestic operations under such a framework, does not introduce unacceptable risks to both national and international aviation. This should

be achieved by ensuring that a State Safety Oversight programme be in place by establishing the following principles:

- a) Promulgate an effective regulation for the transport of dangerous goods in domestic aviation operations which is commensurate with the size and complexity of the activity, which enables the oversight and management of aviation safety through the enforcement of regulations by designated authorities agencies, established for that purpose. This regulation should enable standardised operational procedures, products, services, equipment and infrastructures.
- b) Establish relevant authorities agencies, as appropriate, supported by sufficient and qualified personnel and provided with adequate financial resources for the management of safety. States authorities should have stated defined safety functions and objectives to fulfil their safety management responsibility.
- c) Provide authority or agency personnel responsible for performing safety oversight functions, access to aircraft, operations, facilities, personnel and associated records and as necessary, to individuals and organizations performing any function within the activity.
- d) Personnel performing safety oversight functions should be provided with guidance that addresses ethics, personal conduct and the avoidance of actual or perceived conflicts of interest in the performance of their official duties
- e) Qualification requirements for the personnel performing safety-related functions should be established to ensure that their competence in performing the assigned safety oversight at the desired level. Systems for the maintenance of training records for such personnel should be in place
- f) Provide facilities, technical guidance material and procedures, safety-critical information, tools and equipment, as necessary to the technical personnel to enable them to perform their safety oversight functions effectively and in accordance with established procedures in a standardized manner.
- g) Provide technical guidance to the domestic aviation industry on the implementation of relevant regulations.
- h) Implement documented processes and procedures to ensure that individuals and organizations performing the transport of dangerous goods meet the established requirements before they are allowed to exercise the privileges of an authorization or approval to conduct the activity
- i) Implement documented surveillance processes, to proactively ensure that authorization and approval holders continuously meet the established requirements. These processes should include the surveillance of personnel designated by the Authority or agency to perform safety oversight functions on its behalf.
- j) Implement processes which enable the resolution of identified safety issues in a timely manner through a system which records and monitors progress of actions taken by individuals and organizations performing in resolving such issues whilst performing the activity.

### **Additional Guidance**

ICAO Standards And Recommended Practices (SARPs) are technical specifications adopted in accordance with Article 37 of the Convention on International Civil Aviation (the Convention), to achieve the highest practicable degree of uniformity in regulations, standards, procedures and organization in

relation to aircraft, personnel, airways and auxiliary services in all matters in which such uniformity will facilitate and improve air navigation.

Standards are necessary for the safety or regularity of international air navigation and to which Contracting States will conform in accordance with the Convention.

A State may find it impracticable to comply in all respects with an international standard or procedure, or to bring its own regulations or practices into full accord with any international standard or procedure after they have been amended. It may also be deemed necessary to adopt regulations or practices which differ in any particular respect from those established by an international standard.

In such cases, the differences between the State's own practice and the international standard must be notified to the International Civil Aviation Organization and the Council shall notify to all other States of the difference which exists between one or more features of an international standard and the corresponding national practice of that State

Recommended Practice are specifications which are recognized as desirable in the interest of safety, regularity or efficiency of international air navigation and to which Contracting States will endeavour to conform in accordance with the Convention. They contain certain characteristics necessary for their application, but unlike standards they are not mandatory. Their application is however highly desirable to guarantee safety and/or efficiency of international air navigation. States are expected to do everything they can to comply with them and in case they are not complied with, are invited to notify ICAO in case of non-compliance.

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**ATTACHMENT F**  
**MULTIMODAL HARMONIZATION**

Dave: Fine tune:

States should facilitate the safe transport of dangerous goods between different modes of transport. ICAO ensures multimodal harmonization for the transport of dangerous goods by incorporating the recommendations by the United Nations Committee of Experts on the Transport of Dangerous Goods. As such there is compatibility of the basic requirements between all the modes of transport (i.e.: air, road, rail and sea) to avoid problems when it is necessary to transfer goods between those modes.

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**APPENDIX B**

**PROGRESS ON CLARIFYING STATE RESPONSIBILITIES IN ANNEX 18**





| ICAO

# INTERNATIONAL CIVIL AVIATION ORGANIZATION

A UN SPECIALIZED AGENCY



# Progress on Clarifying State Responsibilities in Annex 18

—  
DGP-WG/ANNEX 18



## Our Objective:

- Understand and clarify State's dangerous goods responsibilities as part of the operational (Annex 6) and a safety management (Annex 19) framework
- Clarify the current Annex 18 responsibilities to States
- Develop SARPs that extend from Annex 19, specific Standards to address the safe transport of dangerous goods

### *Taking into account:*

Eight critical elements that form foundation of SSP

SSP components

Safety of the supply chain

Reporting SARPs developed by DGP-WG/Reporting

Alignment with upcoming amendments to Annex 19

Alignment with other Annexes when necessary

Guidance material: Attachment to Annex 18, Supplement, another document?



# Actions Taken

1. Familiarization with Annex 19
2. Examining relationships between Annex 6 and Annex 18
3. Development of draft Annex 18
4. Development draft guidance
5. Reviewing current provisions of Annex 18
6. Updating DGP on progress
7. Reviewing outstanding issues and modifying structure of Annex 18
8. Request to DGP-WG/22 for interim feedback



# Standards and Recommended Practices (SARPs)

- SARPs are high level “what is required”
- Details considered for an Appendix or an Attachment

## Appendices

- Material grouped separately for convenience but forming part of the SARPs adopted by Council

## Attachments

- Material supplementary to the SARPs, or included as a guide to their application





# 1. Familiarization with Annex 19

- Considered the Critical Elements (CEs) and the State safety management provisions
- Considered how they relate to safe transport of dangerous goods by air
- Added specific safety management SARPs for dangerous goods when necessary
- Consulted with experts





## 2. Examining relationships between Annex 6 and Annex 18

- Identified the interrelationships and ensured alignment with Annex 18
- Identified areas that impacted Annex 18
- Described the interrelationships in guidance and identified the inconsistencies



### 3. Developed Draft Annex 18

- Developed 'new' draft Annex 18 framework
- Resulted in modified structure and content including the addition of a new chapter on the safety of the supply chain



## 4. Developed draft guidance

- Clarifying the interrelationships between Annex 18 and other Annexes (6, 8 and 19)
- Interrelationship between safety risk management processes of the SSP and SMS
- Establishing a national authority for dangerous goods
- State Variations
- International vs. Domestic operations
- Multi-modal harmonization



## 5. Reviewed current provisions of Annex 18

- Continuous consultation with experts
- Transposition of relevant standards from current Annex 18 to new draft Annex 18
- Standards to be more objective driven (i.e the “what” not the “how”)



## 6. DGP Updates

- ICAO DGP informed regularly on the updates and progress of the working group
- Input sought from DGP



## 7. Reviewed outstanding issues and modified structure of Annex 18

- Basic structure amended
- Revised and documented outstanding issues
- Developed more comprehensive SARPs
- Developed guidance material
- Sought input from other disciplines
- Incorporated and expanded upon Annex 19 principles



## 8. Request to DGP-WG/22

- Review, comment and provide feedback on structure and draft content of Annex 18
- Address questions posed to DGP in DGP-WG/22-IP/7
- Feedback no later than 17 February 2023



## Next Steps / Timeline

Review &  
consider  
feedback

WG/Annex 18  
virtual meetings

Proposed  
WG/Annex 18  
meeting May  
2023

Updated draft  
to DGP-WG/23  
May 2023

DGP to review &  
provide  
feedback

Proposed  
WG/Annex 18  
July 2023

Coordination –  
Operations &  
Safety  
Management

WG/Annex 18  
Virtual meetings

ICAO DGP/29  
Oct 2023





# Annex 18 Structure

## Current

vs.

## Draft

- Chapter 1. Definitions
- Chapter 2. Applicability
- Chapter 3. Classification
- Chapter 4. Limitation on the transport of dangerous goods by air
- Chapter 5. Packing
- Chapter 6. Labelling and marking
- Chapter 7. Shipper's Responsibilities
- Chapter 8. Operator's Responsibilities
- Chapter 9. Provision of Information
- Chapter 10. Training Programmes
- Chapter 11. Compliance
- Chapter 12. Dangerous Goods Accident and Incident Reporting
- Chapter 13. Dangerous Goods Security Provision

- Chapter 1. Definitions
- Chapter 2. General principles
- Chapter 3. Provision of information to ICAO
- Chapter 4. Safety of the supply chain
- Chapter 5. Operator's responsibilities
- Chapter 6. Passenger Provisions
- Chapter 7. Transport of dangerous goods by post
- Chapter 8. Training programmes
- Chapter 9. Dangerous goods safety intelligence
- Chapter 10. Dangerous goods security provisions
- Attachments



# Annex 18: Foreword and Definitions

## Foreword

- Historical background
- Reference to guidance contained in the Supplement
- Description of the Annex as being high level with details in the Technical Instructions relationship with the UN Model Regulations and how amendments originate
- Relationship with Technical Instructions and other Annexes and reference to guidance material

## Chapter 1: Definitions

- New definitions for safety of the supply chain and Extraterritorial office of exchange (ETOE)
- New definitions in square brackets (freight forwarder, ground handling service provider, misdeclared dangerous goods)



# Annex 18: Chapter 2

## Chapter 2: General principles

- Objectives
- Applicability
- Binding nature of the Technical Instructions
- Recommendation to accept for surface transport to and from aerodrome
- Limitations on the transport of dangerous goods by air (dangerous goods permitted, forbidden under any circumstance, forbidden unless exempted or approved)
  - Exemptions
  - Approvals
- International cooperation
- General exceptions
- State safety management responsibilities specific to the transport of dangerous goods by air



# Annex 18: Chapter 3

## Chapter 3: Provision of information to ICAO

- National authority
- Notification of variations from the Technical Instructions
- Difficulties encountered in the application of the Technical Instructions



# Annex 18: Chapter 4

## Chapter 4: Safety of the supply chain

- Specific operating regulations
- State safety risk management
- Management of safety risks
- State safety promotion

Replaces current chapters  
Chapter 3. Classification  
Chapter 4. Limitation on the transport of dangerous goods by air  
Chapter 5. Packing  
Chapter 6. Labelling and marking  
Chapter 7. Shipper's Responsibilities



# Annex 18: Chapter 5

## Chapter 5: Operator's responsibilities

- General (link to Annex 6)
- Provision of Information
- Acceptance for transport
- Inspection for damage or leakage
- Loading and stowage
- Information to pilot-in-command
- Emergency Procedures
- Reporting

- More detailed than current Annex 18



## Annex 18: Chapter 6

Chapter 6:  
Dangerous goods  
carried by  
passengers and crew

- To be developed



# Annex 18: Chapter 7

## Chapter 7: Transport of dangerous goods by post

- Specific operating regulations
- Approval of training programme
- Approval of procedures for controlling the introduction of dangerous goods in mail into air transport
- References to extraterritorial office of exchange (ETOE)





## Annex 18: Chapter 8

### Chapter 8: Training programmes

- Establishment of training programmes
- Approval of training programmes



# Annex 18: Chapter 9

## Chapter 9: Dangerous goods safety intelligence

- Safety data collection and processing systems
- Mandatory safety reporting systems
- Voluntary safety reporting system
- Safety investigations
- Safety data and safety information analysis
- Safety data and safety information protection
- Safety information sharing and exchange



# Annex 18: Chapter 10

## Chapter 10: Dangerous goods security provisions

- Safety data collection and processing systems
- Mandatory safety reporting systems
- Voluntary safety reporting system
- Safety investigations
- Safety data and safety information analysis
- Safety data and safety information protection
- Safety information sharing and exchange



## Annex 18: Attachments

### Guidance

- Interrelationships between Annex 18 and other Annexes
- Placeholder
- Not reviewed yet
- Final destination to be determined



## Feedback please!

Please provide feedback  
by responding to the  
questions in Appendix C  
to DGP-WG/22-IP/7 by  
17 February 2023



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Thank You!

## **APPENDIX C**

### **FEEDBACK REQUESTED FROM DGP**

#### **GENERAL QUESTIONS**

1. Do you agree that the Annex 18 structure proposed by DGP-WG/Annex 18 is logical? If not, provide suggestions for improvement.
2. Are there SARPs that would be difficult to implement in your State, region or globally? If yes, which ones and why?

#### **CHAPTER 1**

3. Is the draft new definition for supply chain valuable? If yes, how? If no, why not?

#### **CHAPTER 2**

4. Are the new provisions outlining the objectives of Annex 18 in paragraph 2.1 valuable? If yes, how? If no, why not?

5. Is the sequence in paragraph 2.4 logical and/or appropriate in starting with permitted, followed by, approved, followed by exempted or should it be in reverse order?
6. Should paragraph 2.4.2 be split out into two paragraphs – one for approvals and one for exemptions?

### **CHAPTER 3**

7. Based on the recommendation in paragraph 3.2.2, is there value in including operator variations in the Technical Instructions?

### **CHAPTER 4**

8. Does paragraph 4.1.2. list all of the requirements sufficient to address the entities in the supply chain that may have a role in the safe transport of dangerous goods?
9. Is there sufficient specificity to ensure that all entities who have a responsibility are captured?
10. Does the panel see added value for this group to explore the merit of development of the concept of the “safe supply chain” such as formal approval or shippers and/or freight forwarders? If yes, what additional recommendations should be considered? If no, what would be an alternative way to manage/reduce those risks?



**CHAPTER 5**

11. Is their value in moving certain operator provisions from the Technical Instructions to Annex 18 to allow greater visibility to the State and ensure amendments are subject to the State consultation process? Are there other parts of the Technical Instructions that should be moved to the Annex?

**CHAPTER 7**

12. Should the proposed provisions for Chapter 7, Dangerous goods transport by post, include requirements for Extraterritorial office of exchange (ETOE) in addition to those for Designated postal operators?

Please respond by 17 February 2023 by e-mail to the secretary ([lmcguigan@icao.int](mailto:lmcguigan@icao.int)) for onward submission to DGPWG/Annex 18.

— END —