



DANGEROUS GOODS PANEL (DGP)

TWENTIETH MEETING

Montréal, 24 October to 04 November 2005

Agenda Item 1: Development of proposals, if necessary, for amendments to Annex 18 — The Safe Transport of Dangerous Goods by Air

FLIGHT SAFETY MANAGEMENT SYSTEMS

(Presented by the Secretary)

1. INTRODUCTION

1.1 The Air Navigation Commission recently reviewed proposals for the harmonization of provisions relating to safety management in Annexes 6, 11 and 14 and authorized their transmission to Contracting States and selected international organizations for comment (see State letter AN 12/17-05/93 attached).

1.2 There are two key aspects to the amendment proposal. First, it defines two concepts: safety programmes, aimed at States, and safety management systems, aimed at aircraft operators, maintenance organizations, air traffic services providers and aerodrome operators. Second, the proposed harmonized provisions are generic in the sense that they are the same for all Annexes, except for Annex-specific language.

1.3 The proposal imposes upon States the responsibility of establishing a safety programme and, as part of such programme, of requiring that operators, maintenance organizations and service providers implement a safety management system. The proposal furthermore places a requirement for States to establish an acceptable level of safety for the activities/provision of services under consideration.

1.4 Assertive action by ICAO to achieve worldwide harmonized implementation of safety management systems is deemed justified, as it is expected to have a significant impact on aviation safety in a relatively short time in that it holds the potential to address safety deficiencies in the aviation system that may not be effectively addressed through regulatory compliance only.

2. **PROPOSAL**

2.1 The panel is invited to give consideration to including the work item flight safety management systems on the agenda for DGP/21.

Tel.: +1 (514) 954-8153

Ref.: AN 12/17-05/93

7 October 2005

Subject: Proposal for the amendment of Annex 6, Parts I and III, Annex 11, and Annex 14, Volume I, to harmonize provisions regarding safety management

Action required: Comments to reach Montreal by 31 December 2005

Sir/Madam,

1. I have the honour to inform you that the Air Navigation Commission, at the first meeting of its 170th Session held on 4 October 2005, considered a proposal for the amendment of Annex 6 — *Operation of Aircraft*, Part I — *International Commercial Air Transport — Aeroplanes*, and Part III — *International Operations — Helicopters*, Annex 11 — *Air Traffic Services*, and Annex 14 — *Aerodromes*, Volume I — *Aerodrome Design and Operations*, to harmonize provisions relating to safety management. The Commission reviewed the proposed amendments and authorized their transmission to Contracting States and selected international organizations for comments.

2. The proposal for harmonization of provisions relating to safety management in Annexes 6, Parts I and III, 11, and 14, Volume I, is follow-up action to the 35th Session of the ICAO Assembly (Montreal, 28 September to 8 October 2004) and the Eleventh Air Navigation Conference (Montreal, 22 September to 3 October 2003). Furthermore, it is noted that the implementation of safety management systems holds the potential to address safety deficiencies in the aviation system that may not be effectively addressed through regulatory compliance only.

3. Please note that Annexes 11 and 14, Volume I, already contain provisions relating to safety management; these provisions were introduced in 2001. Annex 6, Parts I and III, although not using the specific term, nevertheless contain provisions that fall within the scope of safety management. Recent safety developments, including an emphasis on systemic safety, present an opportunity for harmonizing the provisions in all three Annexes to support their uniform application.

4. There are two key aspects to the proposal presented in the attachment to this State letter.

Appendix

First, it defines two concepts: safety programmes, aimed at States, and safety management systems, aimed at aircraft operators, maintenance organizations, air traffic services providers and aerodrome operators. Second, the proposed harmonized provisions are generic in the sense that they are the same for Annexes 6, 11 and 14, except for Annex-specific language. The term “safety management” is proposed as the title for the harmonized provisions in Annexes 6, 11 and 14. This term conveys the notion that managing safety is a managerial process that must be considered at the same level and along the same lines as any other managerial process. In order to reinforce the notion of safety management being a managerial process, the proposal includes a provision for an organization to establish lines of safety accountability throughout the organization, as well as at the senior management level. The proposal imposes upon States the responsibility to establish a safety programme and, as part of such programme, requires that operators, maintenance organizations and service providers implement a safety management system. The proposal furthermore places a requirement on States to establish an acceptable level of safety for the activities/provision of services under consideration.

5. I would like to draw your attention to the *ICAO Safety Management Manual* (Doc 9859) that has been developed as essential guidance material to support the harmonized provisions relating to safety management in Annexes 6, Parts I and III, 11 and 14, Volume I. This manual is a unified source of safety management information. It includes a section that discusses generic safety management concepts, applicable across aviation activities, followed by sections on specific activities (operators, maintenance organizations, air traffic service providers and aerodrome operators). A draft version of the *ICAO Safety Management Manual* is posted on the ICAO-NET (<http://www.icao.int/icaonet>), and it will be updated on a regular basis.

6. You may wish to note that, as part of the activities regarding safety management, it is planned to undertake a review of other relevant Annexes to determine the feasibility of developing and/or harmonizing provisions regarding safety management.

7. In examining the proposed amendment, you should not feel obliged to comment on editorial aspects as such matters will be addressed by the Air Navigation Commission during the final review of the draft amendment.

8. May I request that any comments you may wish to make on the proposed amendment be dispatched to reach me not later than 31 December 2005. The Air Navigation Commission has asked me to specifically indicate that comments received after the due date may not be considered by the Commission and the Council. In this connection, should you anticipate a delay in the receipt of your reply, please let me know in advance of the due date.

9. Considering that the proposed amendment involves a harmonization of existing provisions in Annexes 11 and 14, Volume I, and that new provisions are proposed only for Annex 6, Parts I and III, and based on the importance of the safety concern underlying the amendment, the Commission envisages an applicability date of 23 November 2006 for the amendment to Annexes 6, Parts I and III, 11 and 14, Volume I. Any comments you may have thereon would be appreciated.

10. The subsequent work of the Air Navigation Commission and the Council would be greatly facilitated by specific statements on the acceptability or otherwise of the proposal. Please note that, for the review of your comments by the Air Navigation Commission and the Council, replies are normally classified as “agreement with or without comments”, “disagreement with or without comments”, or “no indication of position”. If in your reply the expressions “no objections” or “no comments” are used, they will be taken to mean “agreement without comment” and “no indication of position”, respectively.

Accept, Sir/Madam, the assurances of my highest consideration.

Taïb Chérif
Secretary General

Enclosure:

Proposed amendment to Annex 6, Parts I and III,
Annex 11 and Annex 14, Volume I

ATTACHMENT to State letter AN 12/17-05/93**PROPOSED AMENDMENT TO ANNEX 6, PARTS I AND III,
ANNEX 11 AND ANNEX 14, VOLUME I****NOTES ON THE PRESENTATION OF THE AMENDMENT**

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

1. ~~Text to be deleted is shown with a line through it.~~ text to be deleted
2. **New text to be inserted is highlighted with grey shading.** new text to be inserted
3. ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading. new text to replace existing text

TEXT OF PROPOSED AMENDMENT TO THE

**INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

OPERATION OF AIRCRAFT

**ANNEX 6
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION**

**PART I
INTERNATIONAL COMMERCIAL AIR TRANSPORT – AEROPLANES**

...

CHAPTER 1. DEFINITIONS

...

Safety programme. An integrated set of regulations and activities aimed at improving safety.

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

...

CHAPTER 3. GENERAL

...

**3.2 ~~Accident prevention and
flight safety programme~~ Safety management**

3.2.1 States ~~An operator shall establish and maintain an accident prevention and flight safety programme,~~ in order to achieve an acceptable level of safety in the operation of aircraft.

3.2.2 The acceptable level of safety to be achieved shall be established by the State(s) concerned.

Note.— Guidance on ~~accident prevention~~ safety programmes and on defining acceptable levels of safety is contained in the ~~Accident Prevention Manual (Doc 9422)~~ ICAO Safety Management Manual (Doc 9859), and in the ~~Preparation of an Operations Manual (Doc 9376)~~.

3.2.3 States shall require, as part of their safety programme, that an operator implements a safety management system approved by the State of the Operator that, as a minimum:

- a) identifies actual and potential safety hazards;
- b) ensures that remedial action necessary to maintain an acceptable level of safety is implemented; and
- c) provides for continuous monitoring and regular assessment of the safety level achieved.

3.2.4 An approved safety management system shall clearly define lines of safety accountability throughout the operator's organization, including a direct accountability for safety on the part of senior management.

Note.— Guidance on safety management systems is contained in the ICAO Safety Management Manual (Doc 9859).

3.2.2.5 Recommendation.— ~~From 1 January 2002, a~~An operator of an aeroplane of a certificated take-off mass in excess of 20 000 kg should establish and maintain a flight data analysis programme as part of its ~~accident prevention and flight safety programme~~ safety management system.

3.2.3.6 ~~From 1 January 2005, a~~An operator of an aeroplane of a maximum certificated take-off mass in excess of 27 000 kg shall establish and maintain a flight data analysis programme as part of its ~~accident prevention and flight safety programme~~ safety management system.

Note.— An operator may contract the operation of a flight data analysis programme to another party while retaining overall responsibility for the maintenance of such a programme.

3.2.4.7 A flight data analysis programme shall be non-punitive and contain adequate safeguards to protect the source(s) of the data.

Note.— Guidance on flight data analysis programmes is contained in the Accident Prevention ICAO Safety Management Manual (Doc ~~9422~~ 9859).

3.3 Flight safety documents system

3.2.8 An operator shall establish a flight safety documents system, for the use and guidance of operational personnel, as part of its safety management system.

Note.— Guidance on the development and organization of a flight safety documents system is provided in Attachment H.

3.43.3 Dangerous goods

Editorial Note.— Renumber subsequent paragraphs accordingly.

...

CHAPTER 8. AEROPLANE MAINTENANCE

...

8.7 Approved maintenance organization

...

8.7.3 Safety management

8.7.3.1 States shall establish a safety programme, in order to achieve an acceptable level of safety in the maintenance of aircraft.

8.7.3.2 The acceptable level of safety to be achieved shall be established by the State(s) concerned.

Note.— *Guidance on safety programmes and on defining acceptable levels of safety is contained in the ICAO Safety Management Manual (Doc 9859).*

8.7.3.3 States shall require, as part of their safety programme, that a maintenance organization implements a safety management system approved by the State that, as a minimum:

- a) identifies actual and potential safety hazards;
- b) ensures that remedial action necessary to maintain an acceptable level of safety is implemented; and
- c) provides for continuous monitoring and regular assessment of the safety level achieved.

8.7.3.4 An approved safety management system shall clearly define lines of safety accountability throughout a maintenance organization, including a direct accountability for safety on the part of senior management.

Note.— *Guidance on safety management systems is contained in the ICAO Safety Management Manual (Doc 9859).*

8.7.3.4 Maintenance procedures and quality assurance system

8.7.3.4.1 The maintenance organization shall establish procedures, acceptable to the State granting the approval, which ensure good maintenance practices and compliance with all relevant requirements of this chapter.

8.7.3.4.2 The maintenance organization shall ensure compliance with 8.7.3.4.1 by either establishing an independent quality assurance system to monitor compliance with and adequacy of the procedures, or by providing a system of inspection to ensure that all maintenance is properly performed.

Editorial Note.— Renummer subsequent paragraphs accordingly.

TEXT OF PROPOSED AMENDMENT TO THE
INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES
OPERATION OF AIRCRAFT
ANNEX 6
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION
PART III
INTERNATIONAL OPERATIONS – HELICOPTERS

...

SECTION I – GENERAL

CHAPTER 1. DEFINITIONS

...

Safety programme. An integrated set of regulations and activities aimed at improving safety.

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

...

SECTION II – INTERNATIONAL COMMERCIAL AIR TRANSPORT

CHAPTER 1. GENERAL

...

1.2 Safety management

~~1.1.7~~ 1.2.1 States ~~An operator shall establish and maintain an accident prevention and flight safety programme, in order to achieve an acceptable level of safety in the operation of aircraft.~~

1.2.2 The acceptable level of safety to be achieved shall be established by the State(s) concerned.

Note. – ~~Guidance on accident prevention~~ *safety programmes and on defining acceptable levels of safety is contained in the Accident Prevention Manual (Doc 9422) ICAO Safety Management Manual (Doc 9859), and in the Preparation of an Operations Manual (Doc 9376).*

1.2.3 States shall require, as part of their safety programme, that an operator implements a safety management system approved by the State of the Operator that, as a minimum:

- a) identifies actual and potential safety hazards;
- b) ensures that remedial action necessary to maintain an acceptable level of safety is implemented; and
- c) provides for continuous monitoring and regular assessment of the safety level achieved.

1.2.4 An approved safety management system shall clearly define lines of safety accountability throughout the operator's organization, including a direct accountability for safety on the part of senior management.

Note.— Guidance on safety management systems is contained in the ICAO Safety Management Manual (Doc 9859).

1.1.8 1.2.5 An operator shall establish a flight safety documents system, for the use and guidance of operational personnel, as part of its safety management system.

Note.— Guidance on the development and organization of a flight safety documents system is provided in Attachment G.

~~1.2~~ 1.3 Dangerous goods

Editorial Note.— Renumber subsequent paragraphs accordingly.

TEXT OF PROPOSED AMENDMENT TO THE

INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES

AIR TRAFFIC SERVICES

ANNEX 11

TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

...

CHAPTER 1. DEFINITIONS

...

Safety programme. An integrated set of regulations and activities aimed at improving safety.

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

...

CHAPTER 2. GENERAL

...

2.26 ~~ATS- s~~Safety management

2.26.1 States shall ~~implement systematic and appropriate~~ establish a ~~ATS-safety management~~ safety management programmes, to ensure that safety is maintained in order to achieve an acceptable level of safety in the provision of ATS within airspace and at aerodromes.

2.26.2 ~~The acceptable level of safety and safety objectives applicable to the provision of ATS within airspaces and at aerodromes shall be established by the State or States concerned. When applicable, safety levels and safety objectives shall be established on the basis of regional air navigation agreements.~~ The acceptable level of safety to be achieved shall be established by the State(s) concerned.

Note.—~~The acceptable level of safety may be specified in qualitative or quantitative terms. The following are examples of measures which could be used to express the acceptable level of safety:~~

- a) ~~a maximum probability of an undesirable event, such as collision, loss of separation or runway incursion;~~
- b) ~~a maximum number of accidents per flight hour;~~
- c) ~~a maximum number of incidents per aircraft movement;~~
- d) ~~a maximum number of valid short term conflict alerts (STCA) per aircraft movement.~~

Note.— Guidance on safety programmes and on defining acceptable levels of safety is contained in the ICAO Safety Management Manual (Doc 9859).

2.26.3 An ATS safety management programme States shall require, as part of their safety programme, that an air traffic services provider implements a safety management system approved by the State that, *inter alia* as a minimum:

- a) identifies actual and potential safety hazards and determine the need for remedial action;
- b) ensures that remedial action necessary to maintain an acceptable level of safety is implemented; and
- c) provides for continuous monitoring and regular assessment of the safety level achieved.

2.26.4 An approved safety management system shall clearly define lines of safety accountability throughout the air traffic services provider, including a direct accountability for safety on the part of senior management.

Note.— Guidance on safety management systems is contained in the ICAO Safety Management Manual (Doc 9859), and in the PANS-ATM (Doc 4444).

2.26.4.2.26.5 Any significant safety-related change to the ATC system, including the implementation of a reduced separation minimum or a new procedure, shall only be effected after a safety assessment has demonstrated that an acceptable level of safety will be met and users have been consulted. When appropriate, the responsible authority shall ensure that adequate provision is made for post-implementation monitoring to verify that the defined level of safety continues to be met.

Note 1.— When, due to the nature of the change, the acceptable level of safety cannot be expressed in quantitative terms, the safety assessment may rely on operational judgment.

Note 2.— Attention is drawn to guidance material contained in the Air Traffic Services Planning Manual (Doc 9426), the Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689), the Manual on Implementation of a 300 m (1 000 ft) Vertical Separation Minimum

Appendix

between FL 290 and FL 410 Inclusive (*Doc 9574*) and the Manual on Required Navigation Performance (RNP) (*Doc 9613*).

TEXT OF PROPOSED AMENDMENT TO THE

INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES

AERODROMES

ANNEX 14
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

VOLUME I
AERODROME DESIGN AND OPERATIONS

...

CHAPTER 1. GENERAL

...

1.1 Definitions

Safety programme. An integrated set of regulations and activities aimed at improving safety.

Safety management system. ~~A system for the management of~~ A systematic approach to managing safety at aerodromes, including the necessary organizational structure, responsibilities, accountabilities, policies and procedures, processes and provisions for the implementation of aerodrome safety policies by an aerodrome operator, which provides for control of safety at, and the safe use of, the aerodrome.

...

1.4 Certification of aerodromes

~~1.4.4 Recommendation.— A certified aerodrome should have in operation a safety management system.~~

~~Note.— The intent of a safety management system is to have in place an organized and orderly approach in the management of aerodrome safety by the aerodrome operator. Guidance on an aerodrome safety management system is given in the Manual on Certification of Aerodromes.~~

1.4.5.4 As part of the certification process, States shall ensure that an aerodrome manual which will include all pertinent information on the aerodrome site, facilities, services, equipment, operating procedures, organization and management including a safety management system, is submitted by the applicant for approval/acceptance prior to granting the aerodrome certificate

1.4.6 5 As of 24 November 2005, a A certified aerodrome shall have in operation a safety management system.

Note.— The intent of a safety management system is to have in place an organized and orderly approach in the management of aerodrome safety by the aerodrome operator. Guidance on an aerodrome

safety management system is given in the ICAO Safety Management Manual (Doc 9859) and in the Manual on Certification of Aerodromes (Doc 9774).

1.5 Safety management

1.5.1 States shall establish a safety programme, in order to achieve an acceptable level of safety in aerodrome operations.

1.5.2 The acceptable level(s) of safety to be achieved shall be established by the State(s) concerned.

Note.— Guidance on safety programmes and on defining acceptable levels of safety is contained in the ICAO Safety Management Manual (Doc 9859).

1.5.3 States shall require, as part of their safety programme, that a certified aerodrome operator implements a safety management system approved by the State that, as a minimum:

- a) identifies actual and potential safety hazards;
- b) ensures that remedial action necessary to maintain an acceptable level of safety is implemented; and
- c) provides for continuous monitoring and regular assessment of the safety level achieved.

1.5.4 An approved safety management system shall clearly define lines of safety accountability throughout a certified aerodrome operator, including a direct accountability for safety on the part of senior management.

Note.— Guidance on safety management systems is contained in the ICAO Safety Management Manual (Doc 9859), and in the Manual on Certification of Aerodromes (Doc 9774).

1.5 1.6 Airport design

Editorial Note.— Renumber subsequent paragraphs accordingly.

...

— END —