

Subject: EASA Operations Rulemaking

Meeting: EASA SMS Workshop – January 15 - 17, 2008

File: EASA

Reported by: Ray Rohr

Summary:

The EASA SMS Workshop was held in Cologne, Germany to bring together delegates to discuss safety management system (SMS) issues including:

- the view of ICAO on the State Safety Programme and SMS;
- the experience of other regulatory authorities on the development of SMS requirements and their implementation;
- which essentials of a state safety programme as defined by ICAO are already covered by EU-Ops and the EASA system;
- the compliance of EU-OPS with ICAO SMS standards and recommendations for air operators;
- which elements of a SMS are incorporated in the EASA regulatory framework; and
- the view of organisations on the implementation of SMS.

The Workshop included speakers from ICAO, EASA, Transport Canada, Singapore CAA, the Association of European Airlines, Airbus, EBAA, the BAA and Eurocontrol. A copy of the [agenda](#) is linked to this report. The first day the ICAO representative discussed the elements of a State safety program and operator's SMS as described in the [ICAO State Letter](#) that currently is out for comment. Following that presentation the Transport Canada and the Singapore CAA speakers outlined their SMS experiences and the EASA representatives discussed issues from a Community perspective. The second day the industry representatives presented their SMS experiences and outlined the issues being faced by operators from their particular perspective. Copies of the presentations are posted on the EASA web site at http://www.easa.europa.eu/home/g_events.html. Scroll down to the January 15 & 16, 2008 EASA Workshop on Safety Management System under the Past Events heading.

In the discussions around the presentations, significant concerns were expressed by European national civil aviation authorities that due to the delays in the adoption of the basic regulations for operations and licensing (the basic regulations were approved by the European Parliament on December 12, 2007 and are now in the Commission for processing) and the ensuing delay in the development of the EASA operations and licensing rules, European States would not be able to comply with the ICAO SMS requirements. These are scheduled to come into effect for State Safety Programs and safety management systems for commercial air operators in January 2009. The EASA Rulemaking Director assured the Workshop that every effort possible was being taken to ensure that the SMS requirements for operators and organizations would be in place (see the [EASA SMS Position Paper](#) linked to this report). In particular, the EASA basic regulation along with existing implementing rules and those under development, plus the States' safety oversight responsibilities, would allow EC States to meet their ICAO obligations. From the air operator perspective the SMS requirements would be in the EASA OPS rules, for which, NPAs are expected to be published in May 2008.

The industry presentations indicated that some operators and organizations have made considerable progress toward SMS implementation, but also highlighted that many have not even begun to address the requirements. Most of the presenters agreed that it was the role of the regulators to ensure that appropriate rules and standards were in place and that SMS guidance material was available, but they also agreed that the industry associations must get involved and work with their members to develop implementation tools appropriate for their segment of the aviation industry.

Implication for Business Aviation:

The IS-BAO includes SMS guidance material and tools especially suited to corporate operators. Whilst these have also been used effectively by on-demand charter operators, in view of the regulator's position on the need for the industry to develop tailored SMS solutions by sector, IBAC and its Member Associations will investigate the possibility of developing a set of SMS tools specifically designed for the needs of on-demand charter operators.

Decisions Required:

Consider the development of additional SMS tools to meet the needs of all operators.

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**Preliminary Agenda
EASA Workshop on Safety Management System
15 and 16 January 2008
EASA – Cologne - Germany**

Workshop Location:

“Barcelona” room.
Jugendherberge Köln-Deutz
City-Hostel - Siegesstr. 5
50679 Cologne

The European Aviation Safety Agency is holding a two-day workshop to bring together a wide range of delegates interested in Safety Management System (SMS) covering the various domains of aviation safety, such as initial airworthiness, continued airworthiness, air operations, airports and ATM.

This workshop will explore:

- the view of ICAO on the State Safety Programme and SMS;
- the experience of other regulatory authorities on the development of SMS requirements and their implementation;
- which essentials of a state safety programme as defined by ICAO are already covered in the actual EASA system;
- which elements of a SMS are incorporated in the EASA regulatory framework;
- the compliance of EU-OPS with ICAO SMS standards and recommendations for air operators; and
- the view of organisations on the implementation of SMS.

The workshop will be coordinated by Luís Cardoso Ribeiro.

Please confirm your participation to Manuel Estrada before **11 January 2008**, using email: manuel.estrada@easa.europa.eu

Day 1

10.00 *Registration*

Opening of the Workshop

10.30 Welcome Address by Claude Probst – EASA Rulemaking Director

Session I - ICAO

10.45 "*The view of ICAO on State Safety Programme and SMS regulatory framework and implementation*"

 Speaker: Miguel Ramos – ICAO

11.45 Questions and Answers

12.00 *Lunch*

Session II – Transport Canada

13.30 "*The view of Transport Canada on SMS rulemaking and implementation*"

 Speaker: Don Sherritt – Transport Canada

14.15 Questions and Answers

Session III – CAA Singapore

14.30 "*CAAS Roadmap on SMS regulation and implementation*"

 Speaker: Looi Han Seng – CAA Singapore

15.00 Questions and Answers

15.15 *Coffee Break*

Session IV – EASA and European Commission

15.30 "*SMS, what have we done so far in the EASA system?*"

 Speaker: Yves Morier – EASA

16.00 "*A management system, more than only SMS*"

 Speaker: Eric Sivel – EASA

16.15 "*The view of the European Commission on the development of a Community Safety Programme*"

 Speaker: Gernot Kessler – European Commission

16.30 Questions and Answers

17.00 *Closing - Day 1 of the Workshop*

Day 2

9.15 *Opening of day 2*

Session I – Initial Airworthiness

9.30 "SMS implementation issues related to Design and Production"

Speaker: Peter Corbeel - EASA

10.00 Questions and Answers

Session II – Continued Airworthiness

10.15 "SMS implementation issues related to a Part 145 organisation"

Speaker : Jean-Marc Cluzeau – AEA - Air France

10.45 Questions and Answers

11.00 *Coffee Break*

Session III – Air Transport Operators (1)

11.15 "SMS implementation issues for a large air operator"

Speaker: Jochem Mickel – AEA - Lufthansa

11.45 Questions and Answers

12.00 *Lunch*

Session IV – Air Transport Operators (2)

13.30 "Constraints encountered during the assistance of SMS implementation in different air operators"

Speaker: Jari Nisula – Airbus

14.00 Questions and Answers

Session V – Air Transport Operators (3)

14.15 "SMS implementation in small air operators"

Speaker: Ray Rohr – EBAA

14.45 Questions and Answers

15.00 *Coffee-break*

Session VI - Airports

15.15 "SMS implementation by an airport operator"

Speaker: Andrew Badham – BAA

15.45 Questions and Answers

Session VI – ATM

16.00 *"Elements and pre-requisites for managing safety"*

Oliver Straeter - Eurocontrol

16.30 Questions and Answers

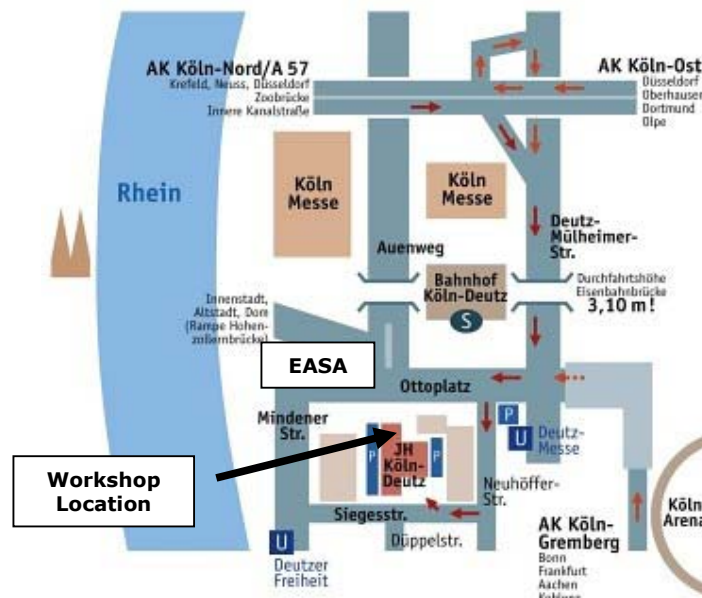
Session VII – Conclusions

16.45 Final Discussion, Conclusions and Closing remarks

17.30 *Closing of the Workshop*

Info on the Workshop Location

The youth hostel is situated directly opposite Köln-Deutz station and the EASA building.



Arrival by rail

To Main Station, from there 15 minutes' walk across the railway bridge or by S-Bahn S11 or S6 to Köln-Deutz station; across the traffic lights on Ottoplatz, then turn right and follow the footpath (signposted) to the left into Siegesstraße right next to the youth hostel.

Arrival from Cologne-Bonn Airport

From Airport take the airport 'S-Bahn'-train no. 13 to Köln-Deutz. Travelling time approx. 15 minutes. From there continue on foot across the traffic lights on Ottoplatz, then turn right and follow the little footpath (signposted) to the left into Siegesstraße right next to the youth hostel.

Arrival by car

from Dortmund/ Oberhausen/ Düsseldorf/ Frankfurt:
A3 to Heumar three-way junction, then A4 in the direction of Aachen as far as Köln-Gremberg intersection, turn off in the direction of Deutz and follow motorway to the end, go through City Hall building and get into left lane, then turn left at the first set of lights with left turn possibility into Neuhöfferstraße; Siegesstraße is the first street on the right (200 m to the youth hostel)

from Aachen:

A4 in the direction of Olpe to Köln-Gremberg motorway intersection, turn off in the direction of Deutz and follow motorway to the end, go through City Hall building and get into left lane, then turn left at the first set of lights with left turn possibility into Neuhöfferstraße; Siegesstraße is the first street on the right (200 m to the youth hostel)

from Krefeld / Neuss:

A57 to the end of the motorway, then take the direction Zoobrücke/Messe; exit at the end of Zoobrücke in the direction of Messe/Kölnarena, then follow Köln-Mülheimer-Straße past the main entrance to the fairgrounds and the railway bridge (clearance height 3.10 m), turn right immediately after the bridge and then turn left at the first set of lights with left turn possibility into Neuhöfferstraße; Siegesstraße is the first street on the right (200 m to the youth hostel)

Next public transport facilities

Airport: Cologne/Bonn-Airport (12 km)

Train station: Cologne-Deutz (100 m)

S-Bahn: Cologne-Deutz (100 m)

Underground station: 'Deutzer Freiheit' (50 m)

Address Workshop Location

Jugendherberge Köln-Deutz
City-Hostel
Siegesstr. 5
50679 Cologne

Telephone: +49 (0)221-814711

<http://www.koeln-deutz.jugendherberge.de>



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Tel.: +1 (514) 954-8219 ext. 5821

Ref.: AN 12/51-07/74

7 December 2007

Subject: Proposal for the amendment of Annex 1, Annex 6, Parts I and III, Annex 8, Annex 11, Annex 13 and Annex 14, Volume I, to harmonize and extend provisions relating to safety management

Action required: Comments to reach Montréal by 31 March 2008

Sir/Madam,

1. I have the honour to inform you that the Air Navigation Commission, at the fourth meeting of its 176th Session held on 25 October 2007, carried out a preliminary review of a proposal for the amendment of Annex 1 – *Personnel Licensing*, Annex 6 – *Operation of Aircraft*, Part I – *International Commercial Air Transport – Aeroplanes* and Part III – *International Operations – Helicopters*, Annex 8 – *Airworthiness of Aircraft*, Annex 11 – *Air Traffic Services*, Annex 13 – *Aircraft Accident and Incident Investigation* and Annex 14 – *Aerodromes*, Volume I – *Aerodrome Design and Operations*, to harmonize and extend provisions relating to safety management. The Commission reviewed the proposed amendments and authorized their transmission to Contracting States and selected international organizations for comments. The proposed amendments are in Attachments A, B, C, D, E and F, respectively.

2. The proposal is a continuation of the harmonization of provisions relating to safety management in Annex 6, Parts I and III, Annex 11, and Annex 14, Volume I, initiated in 2005. In order to reinforce the safety management systems concept, it is also proposed that it be extended to Annexes 1, 8, and 13. The proposal centres around the introduction of two frameworks, one for the implementation and maintenance of a State's safety programme, the other for the implementation and maintenance of a service provider's safety management system (SMS). It also includes editorial/alignment amendments to the Annexes under consideration.

3. With regard to Annex 1, the proposal addresses the medical assessment of licence holders and the approval of training organizations. Regarding the medical assessment of licence holders, the amendment proposes the incorporation of principles of safety management and a risk management approach to the medical assessment of licence applicants. With regard to the approval of training organizations, the proposal introduces the requirement that an approved training organization that is exposed to activities involving operational safety risks (activities conducted in an operational environment, such as flight training) implements a safety management system acceptable to the State.

4. With regard to Annex 6, Part III, the proposal introduces the requirement for helicopter maintenance organizations to implement a safety management system acceptable to the State. This is consistent with the objective of maintaining Annex 6, Parts I and III as closely aligned as appropriate.

5. With regard to Annex 8, the intent of the proposal is, beyond the harmonization of Annex 8, Part II with existing safety management requirements in other Annexes, to provide a platform to develop the necessary guidance material as part of future work of ICAO.

6. With regard to Annex 13, the proposal introduces the responsibility of accident and incident investigation as an element of the State's safety programme. The proposal also strengthens existing safety management provisions in Chapter 8 – Accident Prevention Measures, and aligns the provisions with the State's safety programme.

7. The proposal includes an appendix describing a framework for a service provider's SMS, to be included in Annexes 1, 6, Parts I and III, 8, 11 and 14, Volume I. The framework aims at achieving consensus regarding standardization of SMS, by providing a principled guide for the implementation of SMS by service providers, as well as to develop guidance on SMS regulation by ICAO and national SMS regulation by States. The framework was developed on the basis of analysis of best industry practices, and developments in States, and the feedback from representatives of States through more than fifty-five SMS training courses delivered between May 2006 and November 2007. It consists of four basic components, subdivided into thirteen elements. At the centre of the framework are the two basic components of an SMS: safety risk management, proposed as an initial activity, and safety assurance, proposed as a continuous activity to ensure that the assumptions underlying the initial safety risk management remain valid and applicable, and/or to introduce changes as necessary. These two core activities take place under the umbrella provided by safety policy and objectives and are supported by safety promotion. The appendix includes a brief description of each component and element of the proposed framework.

8. Lastly, the proposal includes an attachment describing a framework for a State's safety programme to be included in Annex 11, and cross-referenced in Annexes 1, 6, Parts I and III, 8, 13 and 14, Volume I. The feedback received from States through the programme of SMS training courses indicates the need to develop guidance for States for the organization of their safety programmes, including the relationship with the State's safety oversight function. A brief discussion follows.

8.1 A State's safety oversight function is a part of a State's safety programme. The objectives of the State's safety oversight function are satisfied through administrative controls (inspections, audits and surveys) carried out regularly by civil aviation authorities. The critical elements of a State's safety oversight function do not, in themselves, constitute safety risk controls. The State's safety programme is necessary to turn the critical elements into safety risk controls. For example, a State's safety oversight function verifies that a State has a system of regulations, but neither requires a safety risk analysis to produce such regulations, nor does it monitor the effectiveness of regulations as safety risk controls. The State's safety programme, on the other hand, considers regulations as safety risk controls requiring, through its safety risk management component, that the process of rulemaking be done using principles of

safety risk management (identify specific hazards, conduct risk analysis, develop rules that provide acceptable mitigation of the hazards' effects), and monitoring, through its safety assurance component, the effectiveness and efficiency of regulations as safety risk controls.

8.2 Clear articulation of the difference between regulations as administrative controls and regulations as safety risk controls underlies the shift from prescriptive regulation to performance based regulation. The State's safety programme, as proposed in the framework, is a first enabling step in such a shift. Furthermore, the integration into the State's safety programme, as appropriate, of the principles underlying the role of the critical elements of a State's safety oversight function will yield a more robust and effective State safety programme.

9. The hazard addressed by both the SMS and the State's safety programme frameworks is the lack of standardization regarding the components of a service provider's SMS or a State's safety programme. The risk is the inability by States to organize their safety programmes or develop national regulations regarding SMS. The frameworks are proposed as mitigation strategy to this risk.

10. I would be grateful if you could include in your reply any information available within your State that may assist ICAO to assess the impact of the proposed amendment. As it is oftentimes the case with health, environmental and safety regulations, a cost-benefit analysis may not be possible. Nevertheless, a quantitative assessment of the impact of the proposed amendment in your State should be possible. I am therefore requesting your estimate regarding resources and procedures by your State as well as by industry that will be needed to ensure that the new provisions are developed, implemented and observed.

11. 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.

12. May I request that any comments you may wish to make on the proposed amendment be dispatched to reach me not later than 31 March 2008. 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.

13. Considering that the proposed amendment involves further harmonization of existing provisions in Annexes 6, Parts I and III, Annex 11, Annex 13 and Annex 14, Volume I, the Commission envisages an applicability date for these Annexes of 19 November 2009. The Commission envisages a separate applicability date of 18 November 2010 for the proposed provisions in Annex 1 and Annex 8. Any comments you may have concerning the proposed applicability dates would be appreciated.

14. 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. In order to facilitate proper classification of your response, a form has been included in Attachment G which may be completed and returned together with your comments, if any, on the proposals in Attachments A, B, C, D, E and F.

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

Taïeb Chérif
Secretary General

Enclosures:

- A — Proposed amendment to Annex 1
- B — Proposed amendment to Annex 6, Parts I and III
- C — Proposed amendment to Annex 8
- D — Proposed amendment to Annex 11
- E — Proposed amendment to Annex 13
- F — Proposed amendment to Annex 14, Volume I
- G — Response form

**PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

PERSONNEL LICENSING

**ANNEX 1
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION**

NOTES ON THE PRESENTATION OF THE PROPOSED 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

CHAPTER 1. DEFINITIONS AND GENERAL RULES CONCERNING LICENSING

1.1 Definitions

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

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

...

1.2.4 Medical fitness

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1.2.4.2 Recommendation.— States should apply, as part of their safety programme, basic safety management principles to the medical assessment process of license holders, that as a minimum include:

- a) routine collection and analysis of in-flight incapacitation events and medical findings during medical assessments to identify areas of increased medical risk; and
- b) continuous re-evaluation of the medical assessment process to concentrate on identified areas of increased medical risk.

Note. — A framework for the implementation and maintenance of a State's safety programme is contained in Attachment F to Annex 11. Guidance on safety programmes and safety management principles is contained in the Safety Management Manual (SMM) (Doc 9859) and the Manual of Civil Aviation Medicine (Doc 8984).

~~1.2.4.2~~ **1.2.4.3** The period of validity of a Medical Assessment shall begin on the day the medical examination is performed. The duration of the period of validity shall be in accordance with the provisions of 1.2.5.2

Editorial note.— Renumber subsequent paragraphs accordingly.

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1.2.8 Approved training and approved training organization

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1.2.8.2 The approval of a training organization by a State shall be dependent upon the applicant demonstrating compliance with the requirements of Appendix 2 and Appendix 4.

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CHAPTER 6. MEDICAL PROVISIONS FOR LICENSING

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Note 6. – Basic safety management principles, when applied to the medical assessment process, can help ensure that aero medical resources are utilized effectively.

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APPENDIX 2. APPROVED TRAINING ORGANIZATION

(Chapter 1, 1.2.8.2 refers)

...

4. Safety management

4.1 States shall require, as part of their safety programme, that an approved training organization that is exposed to operational safety risks during the provision of its services implement a safety management system acceptable to the State that, as a minimum:

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

4.2 A safety management system shall clearly define lines of safety accountability throughout the approved training organization, including a direct accountability for safety on the part of senior management.

Note 1.— A framework for the implementation and maintenance of a State's safety programme is contained in Attachment F to Annex 11

Note 2.— A framework for the implementation and maintenance of a safety management system is contained in Appendix 4. Guidance on safety management systems is contained in the Safety Management Manual (SMM) (Doc 9859).

4-5. Quality assurance system

Editorial note.— Re-number subsequent paragraphs.

...

Insert new Appendix 4 as follows:

**APPENDIX 4. FRAMEWORK FOR
SAFETY MANAGEMENT SYSTEMS (SMS)**
(Chapter 1, 1.2.8.2 refers)

Introduction

This appendix introduces a framework for the implementation and maintenance of a safety management system (SMS) by an approved training organization that is exposed to operational safety risks during the provision of its services. The framework consists of four components and thirteen elements, and its implementation shall be commensurate with the size of the organization and the complexity of the services provided. This appendix also includes a brief description of each element of the framework.

1. Safety policy and objectives
 - 1.1 – Management commitment and responsibility
 - 1.2 – Safety accountabilities of managers
 - 1.3 – Appointment of key safety personnel
 - 1.4 – SMS implementation plan
 - 1.5 – Coordination of emergency response planning
 - 1.6 – Documentation
2. Safety risk management
 - 2.1 – Hazard identification process
 - 2.2 – Risk assessment and mitigation process
3. Safety assurance
 - 3.1 – Safety performance monitoring and measurement
 - 3.2 – The management of change
 - 3.3 – Continuous improvement of the SMS
4. Safety promotion
 - 4.1 – Training and education
 - 4.2 – Safety communication

1. Safety policy and objectives

1.1 Management commitment and responsibility

The approved training organization shall define the organization's safety policy which shall be in accordance with international and national requirements, and which shall be signed by the accountable executive of the organization. The safety policy shall reflect organizational commitments regarding safety; include a clear statement about the provision of the necessary human and financial resources for its implementation; and be communicated, with visible endorsement, throughout the organization. The safety policy shall be periodically reviewed to ensure it remains relevant and appropriate to the organization.

1.2 Safety accountabilities of managers

The approved training organization shall identify the accountable executive who, irrespective of other functions, shall have ultimate responsibility and accountability, on behalf of the approved training organization, for the implementation and maintenance of the SMS. The approved training organization shall also identify the safety accountabilities of all members of senior management, irrespective of other functions. Safety accountabilities and authorities shall be documented and communicated throughout the organization.

1.3 Appointment of key safety personnel

The approved training organization shall identify a safety manager to be the responsible individual and focal point for the implementation and maintenance of an effective SMS.

1.4 SMS implementation plan

The approved training organization shall develop and maintain an SMS implementation plan that defines the organization's approach to manage safety in a manner that meets the organization's safety needs. The SMS implementation plan of the approved training organization shall explicitly address the coordination between the SMS of the approved training organization and the SMS of other organizations the approved training organization must interface with during the provision of services. The SMS implementation plan shall be endorsed by senior management of the organization.

1.5 Coordination of emergency response planning

The approved training organization shall develop, coordinate and maintain an emergency response plan that ensures orderly and efficient transition from normal to emergency operations, and return to normal operations.

1.6 Documentation

The approved training organization shall develop and maintain SMS documentation to describe the safety policy and objectives, the SMS requirements, the SMS procedures and processes, the accountabilities, responsibilities and authorities for procedures and processes, and the SMS outputs. As part of the SMS documentation, the approved training organization shall develop and maintain a safety management manual (SMM), to communicate its approach to safety throughout the organization.

2. Safety risk management

2.1 Hazard identification process

The approved training organization shall develop and maintain a formal process for effectively collecting, recording, acting on and generating feedback about hazards in operations, based on a combination of reactive, proactive and predictive methods of safety data collection.

2.2 Risk assessment and mitigation process

The approved training organization shall develop and maintain a formal risk management process that ensures analysis (in terms of probability and severity of occurrence), assessment (in terms of tolerability) and control (in terms of mitigation) of risks to an acceptable level. The approved training organization shall also define those levels of management with authority to make decisions regarding safety risks tolerability.

3. Safety assurance

3.1 Safety performance monitoring and measurement

The approved training organization shall develop and maintain the means to verify the safety performance of the organization compared to the safety policy and objectives, and to validate the effectiveness of safety risks controls. The safety reporting procedures related to safety performance and monitoring shall clearly indicate which types of operational behaviours are acceptable or unacceptable, and include the conditions under which immunity from disciplinary action would be considered.

3.2 The management of change

The approved training organization shall develop and maintain a formal process to identify changes within the organization which may affect established processes and services; to describe the arrangements to ensure safety performance before implementing changes; and to eliminate or modify safety risk controls that are no longer needed or effective due to changes in the operational environment.

3.3 Continuous improvement of the SMS

The approved training organization shall develop and maintain a formal process to identify the causes of sub-standard performance of the SMS, determine the implications of sub-standard performance in operations, and eliminate such causes.

4. Safety promotion

4.1 Training and education

The approved training organization shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform the SMS duties. The scope of the safety training shall be appropriate to each individual's involvement in the SMS.

4.2 Safety communication

The approved training organization shall develop and maintain formal means for safety communication, that ensures that all personnel are fully aware of the SMS, conveys safety critical information, and explains why particular safety actions are taken and why safety procedures are introduced or changed.

End of new text.

**PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

OPERATION OF AIRCRAFT

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

NOTES ON THE PRESENTATION OF THE PROPOSED AMENDMENT

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PART I – INTERNATIONAL COMMERCIAL AIR TRANSPORT – AEROPLANES

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CHAPTER 3. GENERAL

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3.2 Safety management

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

Note.— A framework for the implementation and maintenance of a State's safety programme is contained in Attachment F to Annex 11. Guidance on safety programmes is contained in the Safety Management Manual (SMM) (Doc 9859), and the definition of on defining acceptable levels of safety is contained in Attachment E to Annex 11.

...

3.2.5 A 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.— A framework for the implementation and maintenance of a safety management system is contained in Appendix 6. Guidance on safety management systems is contained in the Safety Management Manual (SMM) (Doc 9859).

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CHAPTER 8. AEROPLANE MAINTENANCE

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8.7 Approved maintenance organization

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8.7.3 Safety management

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

Note.— A framework for the implementation and maintenance of a State's safety programme is contained in Attachment F to Annex 11. Guidance on safety programmes and on defining acceptable levels of safety is contained in the Safety Management Manual (SMM) (Doc 9859), and on defining acceptable levels of safety in Attachment E to Annex 11 and in the Safety Management Manual (SMM) (Doc 9859).

...

8.7.3.5 A 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.— A framework for the implementation and maintenance of a safety management system is

contained in Appendix 6. Guidance on safety management systems is contained in the Safety Management Manual (SMM) (Doc 9859).

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APPENDIX 2. ORGANIZATION AND CONTENTS OF AN OPERATIONS MANUAL

(See Chapter 4, 4.2.2.1)

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2. Contents

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2.1.34 Details of the ~~accident prevention and flight safety programme~~ safety management system (SMS) provided in accordance with Chapter 3, 3.2, ~~including a statement of safety policy and the responsibility of personnel.~~

...

Insert new Appendix 6 as follows:

APPENDIX 6. FRAMEWORK FOR SAFETY MANAGEMENT SYSTEMS (SMS)

(See Chapter 3, 3.2.5, and Chapter 8, 8.7.3.5)

Introduction

This appendix introduces a framework for the implementation and maintenance of a safety management system (SMS) by an operator or an approved maintenance organization. The framework consists of four components and thirteen elements, and its implementation shall be commensurate with the size of the organization and the complexity of the services provided. This appendix also includes a brief description of each element of the framework.

1. Safety policy and objectives
 - 1.1 – Management commitment and responsibility
 - 1.2 – Safety accountabilities of managers
 - 1.3 – Appointment of key safety personnel
 - 1.4 – SMS implementation plan
 - 1.5 – Coordination of emergency response planning
 - 1.6 – Documentation
2. Safety risk management
 - 2.1 – Hazard identification process
 - 2.2 – Risk assessment and mitigation process
3. Safety assurance
 - 3.1 – Safety performance monitoring and measurement
 - 3.2 – The management of change
 - 3.3 – Continuous improvement of the SMS

4. Safety promotion

- 4.1 – Training and education
- 4.2 – Safety communication

1. Safety policy and objectives

1.1 Management commitment and responsibility

The operator/approved maintenance organization shall define the organization's safety policy which shall be in accordance with international and national requirements, and which shall be signed by the accountable executive of the organization. The safety policy shall reflect organizational commitments regarding safety; include a clear statement about the provision of the necessary human and financial resources for its implementation; and be communicated, with visible endorsement, throughout the organization. The safety policy shall be periodically reviewed to ensure it remains relevant and appropriate to the organization.

1.2 Safety accountabilities of managers

The operator/approved maintenance organization shall identify the accountable executive who, irrespective of other functions, shall have ultimate responsibility and accountability, on behalf of the operator/approved maintenance organization, for the implementation and maintenance of the SMS. The operator/approved maintenance organization shall also identify the safety accountabilities of all members of senior management, irrespective of other functions. Safety accountabilities and authorities shall be documented and communicated throughout the organization.

1.3 Appointment of key safety personnel

The operator/approved maintenance organization shall identify a safety manager to be the responsible individual and focal point for the implementation and maintenance of an effective SMS.

1.4 SMS implementation plan

The operator/approved maintenance organization shall develop and maintain an SMS implementation plan that defines the organization's approach to manage safety in a manner that meets the organization's safety needs. The SMS implementation plan of the operator/approved maintenance organization shall explicitly address the coordination between the SMS of the operator/approved maintenance organization and the SMS of other organizations the operator/approved maintenance organization must interface with during the provision of services. The SMS implementation plan shall be endorsed by senior management of the organization.

1.5 Coordination of emergency response planning

The operator/approved maintenance organization shall develop, coordinate and maintain an emergency response plan that ensures orderly and efficient transition from normal to emergency operations, and return to normal operations.

1.6 Documentation

The operator/approved maintenance organization shall develop and maintain SMS documentation to describe the safety policy and objectives, the SMS requirements, the SMS procedures and processes, the accountabilities, responsibilities and authorities for procedures and processes, and the SMS outputs. As part of the SMS documentation, the operator/approved maintenance organization shall develop and maintain a safety management manual (SMM), to communicate its approach to safety throughout the organization.

2. Safety risk management

2.1 Hazard identification process

The operator/approved maintenance organization shall develop and maintain a formal process for effectively collecting, recording, acting on and generating feedback about hazards in operations, based on a combination of reactive, proactive and predictive methods of safety data collection.

2.2 Risk assessment and mitigation process

The operator/approved maintenance organization shall develop and maintain a formal risk management process that ensures analysis (in terms of probability and severity of occurrence), assessment (in terms of tolerability) and control (in terms of mitigation) of risks to an acceptable level. The operator/approved maintenance shall also define those levels of management with authority to make decisions regarding safety risks tolerability.

3. Safety assurance

3.1 Safety performance monitoring and measurement

The operator/approved maintenance organization shall develop and maintain the means to verify the safety performance of the organization compared to the safety policy and objectives, and to validate the effectiveness of safety risks controls. The safety reporting procedures related to safety performance and monitoring shall clearly indicate which types of operational behaviours are acceptable or unacceptable, and include the conditions under which immunity from disciplinary action would be considered.

3.2 The management of change

The operator/approved maintenance organization shall develop and maintain a formal process to identify changes within the organization which may affect established processes and services; to describe the arrangements to ensure safety performance before implementing changes; and to eliminate or modify safety risk controls that are no longer needed or effective due to changes in the operational environment.

3.3 Continuous improvement of the SMS

The operator/approved maintenance organization shall develop and maintain a formal process to identify the causes of sub-standard performance of the SMS, determine the implications of sub-standard performance in operations, and eliminate such causes.

4. Safety promotion

4.1 Training and education

The operator/approved maintenance organization shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform the SMS duties. The scope of the safety training shall be appropriate to each individual's involvement in the SMS.

4.2 Safety communication

The operator/approved maintenance organization shall develop and maintain formal means for safety communication, that ensures that all personnel are fully aware of the SMS; conveys safety critical information; and explains why particular safety actions are taken and why safety procedures are introduced or changed.

End of new text.

...

PART III – INTERNATIONAL OPERATIONS – HELICOPTERS

...

SECTION II – INTERNATIONAL COMMERCIAL AIR TRANSPORT

...

CHAPTER 1. GENERAL

...

1.1.9—An operator shall establish and maintain an accident prevention and flight safety programme.

— *Note.*— *Guidance on accident prevention is contained in the Accident Prevention Manual (Doc 9422) and in the Preparation of an Operations Manual (Doc 9376).*

— 1.1.10 **Recommendation.**— *An operator of a helicopter of a certificated take-off mass in excess of 7 000 kg or having a passenger seating configuration of more than 9 and fitted with a flight data recorder should establish and maintain a flight data analysis programme as part of its accident prevention and flight safety programme.*

— *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.*

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

1.2 Safety management

...

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

Note.— *A framework for the implementation and maintenance of a State's safety programme is contained in Attachment F to Annex 11. Guidance on safety programmes is contained in the Safety Management Manual (SMM) (Doc 9859), and the definition of on defining acceptable levels of safety is contained in Attachment E to Annex 11.*

...

1.2.5 A 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.— *A framework for the implementation and maintenance of a safety management system is contained in Appendix 3. Guidance on safety management systems is contained in the Safety Management Manual (SMM) (Doc 9859).*

1.2.6 **Recommendation.**— *An operator of a helicopter of a certified take-off mass in excess of 7 000 kg or having a passenger seating configuration of more than 9 and fitted with a flight data recorder should establish and maintain a flight data analysis programme as part of its 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.*

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

Note 1.— Guidance on flight data analysis programmes is contained in the Safety Management Manual (SMM) (Doc 9858).

Note 2.— Legal guidance for the protection of information from safety data collection and processing systems is contained in Annex 13, Attachment E.

~~1.2.6~~ 1.2.8 An operator shall establish a flight safety documents system, for the use and guidance of operational personnel, as part of its safety management system.

...

CHAPTER 6. HELICOPTER MAINTENANCE

...

6.2 Safety management

6.2.1 States shall establish a safety programme, in order to achieve an acceptable level of safety in helicopter maintenance operations.

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

Note.— A framework for the implementation and maintenance of a State's safety programme is contained in Attachment F to Annex 11. Guidance on safety programmes is contained in the Safety Management Manual (SMM) (Doc 9859), and on defining acceptable levels of safety in Attachment E to Annex 11.

6.2.3 States shall require, as part of their safety programme, that an operator implement a safety management system acceptable to the State that, as a minimum:

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

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

Note.— A framework for the implementation and maintenance of a safety management system is contained in Appendix 3. Guidance on safety management systems is contained in the Safety Management Manual (SMM) (Doc 9859).

6.2-6.3 Operator's maintenance control manual

Editorial note.— Re-number subsequent paragraphs accordingly.

...

Insert new Appendix 3 as follows:

**APPENDIX 3. FRAMEWORK FOR
SAFETY MANAGEMENT SYSTEMS (SMS)**

(See Section II, Chapter 1, 1.2.5, and Chapter 6, 6.2.4)

Introduction

This appendix introduces a framework for the implementation and maintenance of a safety management system (SMS) by a helicopter operator/approved maintenance organization. The framework consists of four components and thirteen elements, and its implementation shall be commensurate with the size of the organization and the complexity of the services provided. This appendix also includes a brief description of each element of the framework.

1. Safety policy and objectives
 - 1.1 – Management commitment and responsibility
 - 1.2 – Safety accountabilities of managers
 - 1.3 – Appointment of key safety personnel
 - 1.4 – SMS implementation plan
 - 1.5 – Coordination of emergency response planning
 - 1.6 – Documentation
2. Safety risk management
 - 2.1 – Hazard identification process
 - 2.2 – Risk assessment and mitigation process
3. Safety assurance
 - 3.1 – Safety performance monitoring and measurement
 - 3.2 – The management of change
 - 3.3 – Continuous improvement of the SMS
4. Safety promotion
 - 4.1 – Training and education
 - 4.2 – Safety communication

1. Safety policy and objectives

1.1 Management commitment and responsibility

The helicopter operator/approved maintenance organization shall define the organization's safety policy which shall be in accordance with international and national requirements, and which shall be signed by the accountable executive of the organization. The safety policy shall reflect organizational commitments regarding safety; include a clear statement about the provision of the necessary human and financial resources for its implementation; and be communicated, with visible endorsement, throughout the organization. The safety policy shall be periodically reviewed to ensure it remains relevant and appropriate to the organization.

1.2 Safety accountabilities of managers

The helicopter operator/approved maintenance organization shall identify the accountable executive who, irrespective of other functions, shall have ultimate responsibility and accountability, on behalf of the helicopter operator/approved maintenance organization, for the implementation and maintenance of the SMS. The helicopter operator/approved maintenance organization shall also identify the safety accountabilities of all members of senior management, irrespective of other functions. Safety accountabilities and authorities shall be documented and communicated throughout the organization.

1.3 Appointment of key safety personnel

The helicopter operator/approved maintenance organization shall identify a safety manager to be the responsible individual and focal point for the implementation and maintenance of an effective SMS.

1.4 SMS implementation plan

The helicopter operator/approved maintenance organization shall develop and maintain an SMS implementation plan that defines the organization's approach to manage safety in a manner that meets the organization's safety needs. The SMS implementation plan of the helicopter operator/approved maintenance organization shall explicitly address the coordination between the SMS of the helicopter operator/approved maintenance organization and the SMS of the other organizations the helicopter operator/approved maintenance organization must interface with during the provision of services. The SMS implementation plan shall be endorsed by senior management of the organization.

1.5 Coordination of emergency response planning

The helicopter operator/approved maintenance organization shall develop, maintain and coordinate an emergency response plan that ensures orderly and efficient transition from normal to emergency operations, and return to normal operations.

1.6 Documentation

The helicopter operator/approved maintenance organization shall develop and maintain SMS documentation to describe the safety policy and objectives, the SMS requirements, the SMS procedures and processes, the accountabilities, responsibilities and authorities for procedures and processes, and the

SMS outputs. As part of the SMS documentation, the helicopter operator/approved maintenance organization shall develop and maintain a safety management manual (SMM), to communicate its approach to safety throughout the organization.

2. Safety risk management

2.1 Hazard identification process

The helicopter operator/approved maintenance organization shall develop and maintain a formal process for effectively collecting, recording, acting on and generating feedback about hazards in operations, based on a combination of reactive, proactive and predictive methods of safety data collection.

2.2 Risk assessment and mitigation process

The helicopter operator/approved maintenance organization shall develop and maintain a formal risk management process that ensures analysis (in terms of probability and severity of occurrence), assessment (in terms of tolerability) and control (in terms of mitigation) of risks to an acceptable level. The helicopter operator/approved maintenance organization shall also define those levels of management with authority to make decisions regarding safety risks tolerability.

3. Safety assurance

3.1 Safety performance monitoring and measurement

The helicopter operator/approved maintenance organization shall develop and maintain the means to verify the safety performance of the organization compared to the safety policy and objectives, and to validate the effectiveness of safety risks controls. The safety reporting procedures related to safety performance and monitoring shall clearly indicate which types of operational behaviours are acceptable or unacceptable, and include the conditions under which immunity from disciplinary action would be considered.

3.2 The management of change

The helicopter operator/approved maintenance organization shall develop and maintain a formal process to identify changes within the organization which may affect established processes and services; to describe the arrangements to ensure safety performance before implementing changes; and to eliminate or modify safety risk controls that are no longer needed or effective due to changes in the operational environment.

3.3 Continuous improvement of the SMS

The helicopter operator/approved maintenance organization shall develop and maintain a formal process to identify the causes of sub-standard performance of the SMS, determine the implications of sub-standard performance in operations, and eliminate such causes.

4. Safety promotion

4.1 Training and education

The helicopter operator/approved maintenance organization shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform the SMS duties. The scope of the safety training shall be appropriate to each individual's involvement in the SMS.

4.2 Safety communication

The helicopter operator/approved maintenance organization shall develop and maintain formal means for safety communication, that ensures that all personnel are fully aware of the SMS; conveys safety critical information; and explains why particular safety actions are taken and why safety procedures are introduced or changed.

End of new text.

...

ATTACHMENT H. CONTENTS OF AN OPERATIONS MANUAL

Supplementary to Section II, Chapter 2, 2.2.2.1

...

2. Contents

...

2.1 General

...

2.1.27 Details of the ~~accident prevention and flight safety programme~~ safety management system (SMS) provided in accordance with Section II, Chapter 1, 1.1.9, ~~including a statement of safety policy and the responsibility of personnel.~~

**PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

AIRWORTHINESS OF AIRCRAFT

**ANNEX 8
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION**

NOTES ON THE PRESENTATION OF THE PROPOSED 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

PART I – DEFINITIONS

...

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

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

...

**PART II. PROCEDURES FOR CERTIFICATION AND
CONTINUING AIRWORTHINESS**

...

Insert new Chapter 5 as follows:

CHAPTER 5. SAFETY MANAGEMENT

5.1 States shall establish a safety programme, in order to achieve an acceptable level of safety in the certification and continuing airworthiness of aircraft.

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

Note.— A framework for the implementation and maintenance of a State’s safety programme is contained in Attachment F to Annex 11. Guidance on safety programmes is contained in the Safety Management Manual (SMM) (Doc 9859), and on defining acceptable levels of safety in Attachment E to Annex 11.

5.3 States shall require, as part of their safety programme, that an organization responsible for the type design or final assembly of an aircraft implement a safety management system acceptable to the State concerned that, as a minimum:

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

5.4 A safety management system shall clearly define lines of safety accountability throughout the type design or final assembly organization, including a direct accountability for safety on the part of senior management.

Note.— A framework for the implementation and maintenance of a safety management system is contained in the Appendix. Guidance on safety management systems is contained in the Safety Management Manual (SMM) (Doc 9859).

End of new text.

...

Insert new Appendix as follows:

**APPENDIX – FRAMEWORK FOR
SAFETY MANAGEMENT SYSTEMS (SMS)**

(See Part II, Chapter 5, 5.4)

Introduction

This appendix introduces a framework for the implementation and maintenance of a safety management system (SMS) by an organization responsible for the type design or final assembly of an aircraft. The framework consists of four components and thirteen elements, and its implementation shall be commensurate with the size of the organization and the complexity of the services provided. This appendix also includes a brief description of each element of the framework.

1. Safety policy and objectives
 - 1.1 – Management commitment and responsibility
 - 1.2 – Safety accountabilities of managers
 - 1.3 – Appointment of key safety personnel
 - 1.4 – SMS implementation plan
 - 1.5 – Coordination of emergency response planning
 - 1.6 – Documentation
2. Safety risk management
 - 2.1 – Hazard identification process
 - 2.2 – Risk assessment and mitigation process
3. Safety assurance
 - 3.1 – Safety performance monitoring and measurement
 - 3.2 – The management of change
 - 3.3 – Continuous improvement of the SMS
4. Safety promotion
 - 4.1 – Training and education
 - 4.2 – Safety communication

1. Safety policy and objectives

1.1 Management commitment and responsibility

The organization responsible for the type design or final assembly of aircraft shall define the organization's safety policy which shall be in accordance with international and national requirements, and which shall be signed by the accountable executive of the organization. The safety policy shall reflect organizational commitments regarding safety; include a clear statement about the provision of the necessary human and financial resources for its implementation; and be communicated, with visible endorsement, throughout the organization. The safety policy shall be periodically reviewed to ensure it

remains relevant and appropriate to the organization.

1.2 Safety accountabilities of managers

The organization responsible for the type design or final assembly of aircraft shall identify an accountable executive who, irrespective of other functions, shall have ultimate responsibility and accountability, on behalf of the organization responsible for the type design or final assembly of aircraft, for the implementation and maintenance of the SMS. The organization responsible for the type design or final assembly of aircraft shall also identify the safety accountabilities of all members of senior management, irrespective of other functions. Safety accountabilities and authorities shall be documented and communicated throughout the organization.

1.3 Appointment of key safety personnel

The organization responsible for the type design or final assembly of aircraft shall identify a safety manager to be the responsible individual and focal point for the implementation and maintenance of an effective SMS.

1.4 SMS implementation plan

The organization responsible for the type design or final assembly of aircraft shall develop and maintain an SMS implementation plan that defines the organization's approach to manage safety in a manner that meets the organization's safety needs. The SMS implementation plan of the organization responsible for the type design or final assembly of aircraft shall explicitly address the coordination of the SMS of the organization responsible for the type design or final assembly of aircraft and the SMS of other organizations the organization responsible for the type design or final assembly of aircraft must interface with during the provision of services. The SMS implementation plan shall be endorsed by senior management of the organization.

1.5 Coordination of emergency response planning

The organization responsible for the type design or final assembly of aircraft shall develop, coordinate and maintain an emergency response plan that ensures orderly and efficient transition from normal to emergency operations, and return to normal operations.

1.6 Documentation

The organization responsible for the type design or final assembly of aircraft shall develop and maintain SMS documentation to describe the safety policy and objectives, the SMS requirements, the SMS procedures and processes, the accountabilities, responsibilities and authorities for procedures and processes, and the SMS outputs. As part of the SMS documentation, the organization responsible for the type design or final assembly of aircraft shall develop and maintain a safety management manual (SMM), to communicate its approach to safety throughout the organization.

2. Safety risk management

2.1 Hazard identification process

The organization responsible for the type design or final assembly of aircraft shall develop and maintain a formal process for effectively collecting, recording, acting on and generating feedback about hazards in operations, based on a combination of reactive, proactive and predictive methods of safety data collection.

2.2 Risk assessment and mitigation process

The organization responsible for the type design or final assembly of aircraft shall develop and maintain a formal risk management process that ensures analysis (in terms of probability and severity of occurrence), assessment (in terms of tolerability) and control (in terms of mitigation) of risks to an acceptable level. The organization responsible for the type design or final assembly of aircraft shall also define those levels of management with authority to make decisions regarding safety risks tolerability.

3. Safety assurance

3.1 Safety performance monitoring and measurement

The organization responsible for the type design or final assembly of aircraft shall develop and maintain the means to verify the safety performance of the organization compared to the safety policy and objectives, and to validate the effectiveness of safety risks controls. The safety reporting procedures related to safety performance and monitoring shall clearly indicate which types of operational behaviours are acceptable or unacceptable, and include the conditions under which immunity from disciplinary action would be considered.

3.2 The management of change

The organization responsible for the type design or final assembly of aircraft shall develop and maintain a formal process to identify changes within the organization which may affect established processes and services; to describe the arrangements to ensure safety performance before implementing changes; and to eliminate or modify safety risk controls that are no longer needed or effective due to changes in the operational environment.

3.3 Continuous improvement of the SMS

The organization responsible for the type design or final assembly of aircraft shall develop and maintain a formal process to identify the causes of sub-standard performance of the SMS, determine the implications of sub-standard performance in operations, and eliminate such causes.

4. Safety promotion

4.1 Training and education

The organization responsible for the type design or final assembly of aircraft shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform the SMS duties. The scope of the safety training shall be appropriate to each individual's involvement in the SMS.

4.2 Safety communication

The organization responsible for the type design or final assembly of aircraft shall develop and maintain formal means for safety communication, that ensures that all personnel are fully aware of the SMS; conveys safety critical information; and explains why particular safety actions are taken and why safety procedures are introduced or changed.

End of new text.

**PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

AIR TRAFFIC SERVICES

**ANNEX 11
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION**

NOTES ON THE PRESENTATION OF THE PROPOSED 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
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CHAPTER 2. GENERAL

...

2.27 Safety management

...

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

Note.— A framework for the implementation and maintenance of a State's safety programme is contained in Attachment F. Guidance on safety programmes and on defining acceptable levels of safety is contained in Attachment E and the Safety Management Manual (SMM) (Doc 9859), and on defining acceptable levels of safety in Attachment E.

...

2.27.4 A 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 1.— A framework for the implementation and maintenance of a safety management system is contained in Appendix 6. Guidance on safety management systems is contained in the Safety Management Manual (SMM) (Doc 9859), and associated procedures are contained in the PANS-ATM (Doc 4444).

Note 2.— The provision of AIS, CNS, MET, and/or SAR services, when under the authority of an ATS provider, are subject to the requirements of paragraphs 2.27.3 and 2.27.4. When the provision of AIS, CNS, MET, and/or SAR services are wholly or partially provided by an entity other than an ATS provider, the requirements under 2.27.3 and 2.27.4 relate to the services that come under the authority of the ATS provider, or those aspects of the services with direct operational implications.

...

Insert new Appendix 6 as follows:

APPENDIX 6. FRAMEWORK FOR SAFETY MANAGEMENT SYSTEMS (SMS)

(See Chapter 2, 2.27.4)

Introduction

This appendix introduces a framework for the implementation and maintenance of a safety management system (SMS) by an air traffic services provider. The framework consists of four components and thirteen elements, and its implementation shall be commensurate with the size of the organization and the complexity of the services provided. This appendix also includes a brief description of each element of the framework.

1. Safety policy and objectives

- 1.1 – Management commitment and responsibility
- 1.2 – Safety accountabilities of managers
- 1.3 – Appointment of key safety personnel
- 1.4 – SMS implementation plan
- 1.5 – Coordination of emergency response planning
- 1.6 – Documentation

2. Safety risk management
 - 2.1 – Hazard identification process
 - 2.2 – Risk assessment and mitigation process
3. Safety assurance
 - 3.1 – Safety performance monitoring and measurement
 - 3.2 – The management of change
 - 3.3 – Continuous improvement of the SMS
4. Safety promotion
 - 4.1 – Training and education
 - 4.2 – Safety communication

1. Safety policy and objectives

1.1 Management commitment and responsibility

The air traffic services provider shall define the organization's safety policy and which shall be in accordance with international and national requirements, and which shall be signed by the accountable executive of the organization. The safety policy shall reflect organizational commitments regarding safety; include a clear statement about the provision of the necessary human and financial resources for its implementation; and be communicated, with visible endorsement, throughout the organization. The safety policy shall be periodically reviewed to ensure it remains relevant and appropriate to the organization.

1.2 Safety accountabilities of managers

The air traffic services provider shall identify an accountable executive who, irrespective of other functions, shall have ultimate responsibility and accountability, on behalf of the air traffic services provider, for the implementation and maintenance of the SMS. The air traffic services provider shall also identify the safety accountabilities of all members of senior management, irrespective of other functions. Safety accountabilities and authorities shall be documented and communicated throughout the organization.

1.3 Appointment of key safety personnel

The air traffic services provider shall identify a safety manager to be the responsible individual and focal point for the implementation and maintenance of an effective SMS.

1.4 SMS implementation plan

The air traffic services provider shall develop and maintain an SMS implementation plan that defines the organization's approach to manage safety in a manner that meets the organization's safety needs. The implementation plan of the air traffic services provider shall explicitly address the coordination between the SMS of the air traffic services provider and the SMS of other organizations the air traffic services provider must interface with during the provision of services. The SMS implementation plan shall be endorsed by senior management of the organization.

1.5 Coordination of emergency response planning

The air traffic services provider shall develop, coordinate and maintain a contingency plan that ensures orderly and efficient transition from normal to emergency operations, and return to normal operations.

1.6 Documentation

The air traffic services provider shall develop and maintain SMS documentation to describe the safety policy and objectives, the SMS requirements, the SMS procedures and processes, the accountabilities, responsibilities and authorities for procedures and processes, and the SMS outputs. As part of the SMS documentation, the air traffic services provider shall develop and maintain a safety management manual (SMM), to communicate its approach to safety throughout the organization.

2. Safety risk management

2.1 Hazard identification process

The air traffic services provider shall develop and maintain a formal process for effectively collecting, recording, acting on and generating feedback about hazards in operations, based on a combination of reactive, proactive and predictive methods of safety data collection.

2.2 Risk assessment and mitigation process

The air traffic services provider shall develop and maintain a formal risk management process that ensures analysis (in terms of probability and severity of occurrence), assessment (in terms of tolerability) and control (in terms of mitigation) of risks to an acceptable level. The air traffic services provider shall also define those levels of management with authority to make decisions regarding safety risks tolerability.

3. Safety assurance

3.1 Safety performance monitoring and measurement

The air traffic services provider shall develop and maintain the means to verify the safety performance of the organization compared to the safety policy and objectives, and to validate the effectiveness of safety risks controls. The safety reporting procedures related to safety performance and monitoring shall clearly indicate which types of operational behaviours are acceptable or unacceptable, and include the conditions

under which immunity from disciplinary action would be considered.

3.2 The management of change

The air traffic services provider shall develop and maintain a formal process to identify changes within the organization which may affect established processes and services; to describe the arrangements to ensure safety performance before implementing changes; and to eliminate or modify safety risk controls that are no longer needed or effective due to changes in the operational environment.

3.3 Continuous improvement of the SMS

The air traffic services provider shall develop and maintain a formal process to identify the causes of sub-standard performance of the SMS, determine the implications of sub-standard performance in operations, and eliminate such causes.

4. Safety promotion

4.1 Training and education

The air traffic services provider shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform the SMS duties. The scope of the safety training shall be appropriate to each individual's involvement in the SMS.

4.2 Safety communication

The air traffic services provider shall develop and maintain formal means for safety communication, that ensures that all personnel are fully aware of the SMS; conveys safety critical information; and explains why particular safety actions are taken and why safety procedures are introduced or changed.

End of new text.

...

Insert new Attachment F as follows:

ATTACHMENT F. FRAMEWORK FOR THE STATE'S SAFETY PROGRAMME

Introduction

This attachment introduces a framework for the implementation and maintenance of a State's safety programme by a State. The framework consists of four components and ten elements, outlined hereunder. A brief description of each element is presented.

1. State's safety policy and objectives

- 1.1. CAA safety standards
 - 1.2 CAA safety responsibilities and accountabilities
 - 1.3 Accident and incident investigation
 - 1.4 Enforcement policy
2. State's safety risk management
 - 2.1 Safety requirements for service providers SMS
 - 2.2 Approval of service providers acceptable levels of safety
3. State's safety assurance
 - 3.1 Safety oversight
 - 3.2 Safety data collection, analysis and exchange
 - 3.3 Safety data driven targeting of oversight on areas of greater concern or need
4. State's safety promotion
 - 4.1 Internal training, communication and dissemination of safety information
 - 4.2 External training, communication and dissemination of safety information

Note.— Within the context of this attachment the term “service provider” refers to any organization providing aviation services. The term includes approved training organizations, aircraft operators, maintenance organizations, organizations responsible for type design and/or assembly of aircraft, air traffic services providers and certified aerodrome operators, as applicable.

1. State's safety policy and objectives

1.1 CAA safety Standards

The State has promulgated a national legislative framework and specific regulations to ensure compliance with international and national standards, and that define how the Civil Aviation Authority (CAA) will oversee the management of safety in the State. This includes the CAA's participation in specific activities related to the management of safety in the State, and the establishment of the roles, responsibilities, and relationships of organizations in the system. The safety standards are periodically reviewed to ensure they remain relevant and appropriate to the State.

1.2 CAA safety responsibilities and accountabilities

The State has identified and defined the CAA's requirements, responsibilities and accountabilities regarding the establishment and maintenance of the State's safety programme. This includes the directives to plan, organize, develop, control and continuously improve the State's safety programme in a manner that meets the State's safety needs. It also includes a clear statement about the provision of the necessary human and financial resources for the implementation of the State's safety programme.

1.3 Accident and incident investigation

The State has established an independent accident and incident investigation process, the sole objective of which is to support the management of safety in the State and not the apportioning of blame on liability.

1.4 Enforcement policy

The State has promulgated an enforcement policy that allows service providers to deal with, and resolve, events involving safety deviations and minor violations internally, within the context of the service provider safety management system (SMS), to the satisfaction of the authority. The enforcement policy includes provisions for the CAA to deal with events involving gross negligence and willful deviations through established enforcement procedures.

2. State's safety risk management

2.1 Safety requirements for service providers SMS

The CAA has established the controls which govern how service providers will identify operational hazards and manage safety risks. This includes the requirements, specific operating regulations and implementation policies for service providers' SMS. The requirements and specific operating regulations are periodically reviewed to ensure they remain relevant and appropriate to the service providers.

2.2 Approval of service providers acceptable levels of safety

The CAA has agreed on, and approved, acceptable levels of safety with individual service providers. These acceptable levels of safety are commensurate to the complexity of individual service provider's specific operational contexts and the availability of individual service provider's resources to address safety risks. The agreed acceptable levels of safety are expressed by multiple safety performance indicators and safety performance targets, never by a single one, as well as by safety requirements. The agreed acceptable levels of safety are periodically reviewed to ensure they remain relevant and appropriate to the service providers.

3. State's safety assurance

3.1 Safety oversight

The CAA has established mechanisms to ensure that the identification of operational hazards and the management of safety risks by service providers follow established regulatory controls (requirements, specific operating regulations and implementation policies). These mechanisms include inspections, audits and surveys to ensure that regulatory safety risk controls are appropriately integrated into the service providers' SMS, that they are being practiced as designed, and that the regulatory controls have the intended effect on safety risks.

3.2 Safety data collection, analysis and exchange

The CAA has established mechanisms to ensure the capture and storage of data on operational hazards and safety risks at an aggregate State's level. The CAA has also established mechanisms to develop information from the stored data, and to actively exchange safety information with service providers and/or other States as appropriate.

3.3 Safety data driven targeting of oversight on areas of greater concern or need

The CAA has established procedures to prioritize inspections, audits and surveys towards those areas of greater safety concern or need, as identified by the analysis of data on operational hazards and safety risks areas.

4. State's safety promotion

4.1 Internal training, communication and dissemination of safety information

The CAA provides training, awareness, and two-way communication of safety relevant information to support, within the CAA, the development of a positive organizational culture that fosters the development of an effective and efficient State's safety programme.

4.2 External training, communication and dissemination of safety information

The CAA provides education, awareness of safety risks and two-way communication of safety relevant information to support among services providers the development of a positive organizational culture that fosters safe practices, encourages safety communications and actively manages safety with the same attention to results as financial management.

End of new text.

**PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

AIRCRAFT ACCIDENT AND INCIDENT INVESTIGATION

**ANNEX 13
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION**

NOTES ON THE PRESENTATION OF THE PROPOSED 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

CHAPTER 1. DEFINITIONS

...

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

...

CHAPTER 3. GENERAL

...

STATE'S SAFETY PROGRAMME

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

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

Note.— A framework for the implementation and maintenance of a State's safety programme is contained in Attachment F to Annex 11. Guidance on safety programmes is contained in the Safety Management Manual (SMM) (Doc 9859), and on defining acceptable levels of safety in Attachment E to Annex 11.

Editorial note.— Renumber subsequent paragraphs accordingly.

...

CHAPTER 8. ACCIDENT PREVENTION MEASURES

...

Incident reporting systems

8.1 A State shall establish, as part of its safety programme, a mandatory incident reporting system to facilitate collection of information on actual or potential safety deficiencies.

8.2 **Recommendation.**— ~~A State should establish a voluntary incident reporting system to facilitate the collection of information that may not be captured by a mandatory incident reporting system.~~ A State shall establish, as part of its safety programme, a voluntary incident reporting system to facilitate collection of information on actual or potential safety deficiencies that may not be captured by the mandatory incident reporting system.

Note.— States are encouraged to establish other safety data collection and processing systems to collect safety information that may not be captured by the incident reporting systems mentioned in 8.1 and 8.2 above.

8.3 A voluntary incident reporting system shall be non-punitive and afford protection to the sources of the information.

...

Database systems and analysis — Preventive actions

8.4 **Recommendation.**— ~~A State should establish an accident and incident database to facilitate the effective analysis of information obtained, including that from its incident reporting systems.~~ A State shall establish, as part of its safety programme, an accident and incident database to facilitate the effective analysis of information on actual or potential safety deficiencies obtained and therein contained, including that from its incident reporting systems, and to determine any preventive actions required.

...

Analysis of data — Preventive actions

~~— 8.6 A State having established an accident and incident database and an incident reporting system shall analyse the information contained in its accident/incident reports and the database to determine any preventive actions required.~~

Note 3.— Additional information on which to base preventive actions may be contained in the Final Reports on investigated accidents and incidents.

8.6 **Recommendation.**— A State should, following the identification of preventive actions required to address actual or potential safety deficiencies, and as part of its safety programme, implement these actions and establish a process to monitor implementation and effectiveness of the responses.

...

Exchange of safety information

8.9 **Recommendation.**— States should promote, as part of its safety programmes, the establishment of safety information sharing networks among all users of the aviation system and should facilitate the free exchange of information on actual and potential safety deficiencies.

**PROPOSED AMENDMENT TO
INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

AERODROMES

**ANNEX 14
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION**

**VOLUME I
AERODROME DESIGN AND OPERATIONS**

NOTES ON THE PRESENTATION OF THE PROPOSED 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

CHAPTER 1. GENERAL

...

1.5 Safety management

...

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

Note.— A framework for the implementation and maintenance of a State's safety programme is contained in Attachment F to Annex 11. Guidance on safety programmes and on defining acceptable levels of safety is contained in Attachment E to Annex 11 and in the Safety Management Manual (SMM) (Doc 9859), and on defining acceptable levels of safety in Attachment E to Annex 11.

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

...

1.5.4 A 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.— A framework for the implementation and maintenance of a safety management system is contained in Appendix 7. Guidance on safety management systems is contained in the Safety Management Manual (SMM) (Doc 9859), and in the Manual on Certification of Aerodromes (Doc 9774).

...

Insert new Appendix as follows:

APPENDIX 7. FRAMEWORK FOR SAFETY MANAGEMENT SYSTEMS (SMS)

(See Chapter 1, 1.5.4)

Introduction

This appendix introduces a framework for the implementation and maintenance of a safety management system (SMS) by a certified aerodrome. The framework consists of four components and thirteen elements, and its implementation shall be commensurate with the size of the organization and the complexity of the services provided. This appendix also includes a brief description of each element of the framework.

1. Safety policy and objectives

- 1.1 – Management commitment and responsibility
- 1.2 – Safety accountabilities of managers
- 1.3 – Appointment of key safety personnel
- 1.4 – SMS implementation plan
- 1.5 – Coordination of emergency response planning
- 1.6 – Documentation

2. Safety risk management
 - 2.1 – Hazard identification process
 - 2.2 – Risk assessment and mitigation process
3. Safety assurance
 - 3.1 – Safety performance monitoring and measurement
 - 3.2 – The management of change
 - 3.3 – Continuous improvement of the SMS
4. Safety promotion
 - 4.1 – Training and education
 - 4.2 – Safety communication

1. Safety policy and objectives

1.1 Management commitment and responsibility

The certified aerodrome shall define the organization's safety policy which shall be in accordance with international and national requirements, and which shall be signed by the accountable executive of the organization. The safety policy shall reflect organizational commitments regarding safety; include a clear statement about the provision of the necessary human and financial resources for its implementation; and be communicated, with visible endorsement, throughout the organization. The safety policy shall be periodically reviewed to ensure it remains relevant and appropriate to the organization.

1.2 Safety accountabilities of managers

The certified aerodrome shall identify an accountable executive who, irrespective of other functions, shall have ultimate responsibility and accountability, on behalf of the aerodrome, for the implementation and maintenance of the SMS. The certified aerodrome shall also identify the safety accountabilities of all members of senior management, irrespective of other functions. Safety accountabilities and authorities shall be documented and communicated throughout the organization.

1.3 Appointment of key safety personnel

The certified aerodrome shall identify a safety manager to be the responsible individual and focal point for the implementation and maintenance of an effective SMS.

1.4 SMS implementation plan

The certified aerodrome shall develop and maintain an SMS implementation plan that defines the organization's approach to manage safety in a manner that meets the organization's safety needs. The SMS implementation plan of a certified aerodrome shall explicitly address the coordination of the SMS of the certified aerodrome and the SMS of other organizations the certified aerodrome must interface with

during the provision of services. The SMS implementation plan shall be endorsed by senior management of the organization.

1.5 Coordination of emergency response planning

The certified aerodrome shall develop, coordinate and maintain an emergency response plan that ensures orderly and efficient transition from normal to emergency operations, and return to normal operations.

1.6 Documentation

The certified aerodrome shall develop and maintain SMS documentation to describe the safety policy and objectives, the SMS requirements, the SMS procedures and processes, the accountabilities, responsibilities and authorities for procedures and processes, and the SMS outputs. As part of the SMS documentation, the certified aerodrome shall develop and maintain a safety management manual (SMM), to communicate its approach to safety throughout the organization.

2. Safety risk management

2.1 Hazard identification process

The certified aerodrome shall develop and maintain a formal process for effectively collecting, recording, acting on and generating feedback about hazards in operations, based on a combination of reactive, proactive and predictive methods of safety data collection.

2.2 Risk assessment and mitigation process

The certified aerodrome shall develop and maintain a formal risk management process that ensures analysis (in terms of probability and severity of occurrence), assessment (in terms of tolerability) and control (in terms of mitigation) of risks to an acceptable level. The certified aerodrome shall also define those levels of management with authority to make decisions regarding safety risks tolerability.

3. Safety assurance

3.1 Safety performance monitoring and measurement

The certified aerodrome shall develop and maintain the means to verify the safety performance of the organization compared to the safety policy and objectives, and to validate the effectiveness of safety risks controls. The safety reporting procedures related to safety performance and monitoring shall clearly indicate which types of operational behaviours are acceptable or unacceptable, and include the conditions under which immunity from disciplinary action would be considered.

3.2 The management of change

The certified aerodrome shall develop and maintain a formal process to identify changes within the organization which may affect established processes and services; to describe the arrangements to ensure safety performance before implementing changes; and to eliminate or modify safety risk controls that are no longer needed or effective due to changes in the operational environment.

3.3 Continuous improvement of the SMS

The certified aerodrome shall develop and maintain a formal process to identify the causes of sub-standard performance of the SMS, determine the implications of sub-standard performance in operations, and eliminate such causes.

4. Safety promotion

4.1 Training and education

The certified aerodrome shall develop and maintain a safety training programme that ensures that personnel are trained and competent to perform the SMS duties. The scope of the safety training shall be appropriate to each individual's involvement in the SMS.

4.2 Safety communication

The certified aerodrome shall develop and maintain formal means for safety communication, that ensures that all personnel are fully aware of the SMS; conveys safety critical information; and explains why particular safety actions are taken and why safety procedures are introduced or changed.

End of new text.

ATTACHMENT G to State letter AN 12/51-07/74

RESPONSE FORM TO BE COMPLETED AND RETURNED TO ICAO TOGETHER WITH ANY COMMENTS YOU MAY HAVE ON THE PROPOSED AMENDMENTS

To: The Secretary General
 International Civil Aviation Organization 999 University Street
 Montreal, Quebec
 Canada, H3C 5H7

(State) _____

Please make a checkmark (✓) against one option for each amendment. If you choose options “agreement with comments” or “disagreement with comments”, **please provide your comments on separate sheets.**

	<i>Agreement without comments</i>	<i>Agreement with comments*</i>	<i>Disagreement without comments</i>	<i>Disagreement with comments</i>	<i>No position</i>
Amendment to Annex 1 — <i>Personnel Licensing</i> (Attachment A refers)					
Amendment to Annex 6 — <i>Operation of Aircraft, Part I — International Commercial Air Transport — Aeroplanes and Part III — International Operations — Helicopters</i> (Attachment B refers)					
Amendment to Annex 8 — <i>Airworthiness of Aircraft</i> (Attachment C refers)					
Amendment to Annex 11 — <i>Air Traffic Services</i> (Attachment D refers)					
Amendment to Annex 13 — <i>Aircraft Accident and Incident Investigation</i> (Attachment E refers)					
Amendment to Annex 14 — <i>Aerodromes, Volume I — Aerodrome Design and Operations</i> (Attachment F refers)					

*“Agreement with comments” indicates that your State or organization agrees with the intent and overall thrust of the amendment proposal; the comments themselves may include, as necessary, your reservations concerning certain parts of the proposal and/or offer an alternative proposal in this regard.

Signature: _____ Date: _____



European Aviation Safety Agency

Position Paper

on the compliance of
EASA system and EU-OPS with ICAO Annex 6
safety management systems (SMS)
standards and recommended practices for air operators.

Date: 20 December 2007

1. Purpose

The objective of this paper is to evaluate the compliance of the EASA system and EU-OPS with ICAO Annex 6 standards and recommended practices concerning safety management systems (SMS) for air operators as required by ICAO per 1 January 2009.

2. References

For the purpose of this paper the relevant paragraphs of ICAO Annex 6 and EU-OPS are respectively paragraph 3.2 and OPS 1.037.¹ EU-OPS paragraph OPS 1.037 will be analysed to identify its compliance with this ICAO Annex 6 paragraph.²

3. Background

3.1 ICAO differentiates between state safety programme and safety management systems for organisations. In ICAO document 9859 (Safety Management Manual) the safety programme and safety management systems are described as follows:

- A safety programme is an integrated set of regulations and activities aimed at improving safety.
- A safety management system is an organised approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures.

3.2 Amendment 30 of ICAO Annex 6 requires organisations (air operators and maintenance organisations) to establish a safety management system that as a minimum:

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

In addition organisations shall establish an appropriate management structure, assigning responsibilities and accountabilities, and allocating appropriate resources, consistent with the organisation's stated safety objectives. It also requires real commitment to safety on the part of senior management. Personnel shall fully understand their responsibilities and know what to report, to whom and when. Senior management shall review not only the financial performance of the organisation, but also the safety performance. In order to stimulate reporting by their personnel, the organisations must promote the just culture so that reporters are not exposed to unjust blame.

¹ Annex III to Regulation (EC) No. 3922/91 on the harmonisation of technical requirements and administrative procedures in the field of civil aviation will be effective on 16 July 2008.

² Amendment 30 to ICAO Annex published on 23 November 2006. See **Annex 1** to this position paper for the text of ICAO Annex 6 paragraph 3.2 and **Annex 2** for the text of EU-OPS paragraph OPS 1.037.

3.3 To comply with paragraph 3.2 above an organisation shall establish and maintain an SMS containing the following 4 components and corresponding elements³:

1. Safety policy and objectives.
 - a. Management commitment and responsibilities
 - b. Safety accountabilities of managers
 - c. Appointment of key safety personnel
 - d. SMS implementation plan
 - e. Coordination of emergency response planning
 - f. Documentation
2. Safety risk management.
 - a. Hazard identification process
 - b. Risk assessment and mitigation process
3. Safety assurance.
 - a. Safety performance monitoring and measurement
 - b. The management of change
 - c. Continuous improvement of the SMS
4. Safety promotion.
 - a. Training and education
 - b. Safety communication

3.4 EU-OPS contain in paragraph OPS 1.037 an accident prevention and flight safety programme which consists of the following items:

1. Programmes to achieve and maintain risk awareness by all persons involved in operations; and
2. An occurrence reporting scheme to enable the collation and assessment of relevant incident and accident reports in order to identify adverse trends or to address deficiencies in the interests of flight safety. The scheme shall protect the identity of the reporter and include the possibility that reports may be submitted anonymously; and
3. Evaluation of relevant information relating to accidents and incidents and the promulgation of related information, but not the attribution of blame; and
4. A flight data monitoring programme for those aeroplanes in excess of 27 000 kg MCTOM. Flight Data Monitoring (FDM) is the pro-active use of digital flight data from routine operations to improve aviation safety. The flight data monitoring programme shall be non-punitive and contain adequate safeguards to protect the source(s) of the data; and
5. The appointment of a person accountable for managing the programme.

3.5 EU-OPS also defines that:

1. Proposals for corrective action resulting from the accident prevention and flight safety programme shall be the responsibility of the person accountable for managing the programme.
2. The effectiveness of changes resulting from proposals for corrective action identified by the accident and flight safety programme shall be monitored by the Quality Manager.

³ ICAO Doc.9829 – AN/460 – Safety Management Manual – Chapter 5.

4. Comparison of ICAO Annex 6 paragraph 3.2 with EASA system and EU-OPS paragraph OPS 1.037.

4.1. ICAO and EASA system

- According to 3.2.1: States shall establish a safety programme in order to achieve an acceptable level of safety in the operation of aircraft.

>> *Response:* Consistent with ICAO Doc. 9859, the EASA system comprises an integrated set of regulations and activities aimed at improving safety:⁴

- a. *Regulations:* The EASA system is built on Regulation (EC) No. 1592/2002, which establishes at legislative level the safety objectives to be met by means of essential requirements; these requirements have been designed to mitigate any probable risk linked to civil aviation activities within the scope of the EASA system. These mitigating means are further detailed in appropriate implementing regulations, acceptable means of compliance, certification specifications and guidance material.
- b. *Rulemaking:* The Agency is required through the rulemaking process to develop and amend regulations in order to maintain and continuously improve the safety level. It could receive external input from stakeholders as well as data on the aviation system, accidents, incidents and occurrences collected and analysed by safety analyses and research team of the Agency. This process is supported by safety analysis, research and involvement of the industry through the European Strategic Safety Initiative; ESSI is an aviation safety regulator-industry partnership in Europe, further enhancement of safety is foreseen through analysis of safety data, coordination with safety initiatives worldwide, and the implementation of cost effective action plans.⁵
- c. *Standardisation:* The Agency conducts standardisation inspections of National Aviation Authorities in the domains of the implementing rules that are within the remit of the Agency, to provide for an effective and harmonised implementation of the EASA regulations.
- d. *Certification and oversight:* Competent authorities, including the Agency itself and National Aviation Authorities must ensure continued compliance with the regulations through initial compliance check with the certification requirements and continuous oversight checking.

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

>> *Response:* The acceptable level of safety is a political decision to be taken by the legislator. The definition of quantified key performance indicators, and targets to be met, although complicated is not an impossible task. However, it is doubtful indeed that legislators will accept such quantification because as long as the rate would be respected, some could argue that there is no need for action even with accidents occurring. Such is the reason why, as explained here above, the Community legislator has decided to set its objectives by adopting essential requirements as an integral part

⁴ See also Article 2 of the EASA Basic Regulation, Regulation (EC) No. 1592/2002.

⁵ More info on the European Strategic Safety Initiative (ESSI), see <http://www.easa.europa.eu/essi/>

of the Basic Regulation. When doing so the legislator had in mind a broad objective that could be summarised in few words, such:

- One accident involving public is an accident too much, or
- Reduce the rate of accidents and the fatality risk, irrespective of the volume of air traffic within Europe, for aviation safety worldwide.

Trying to define the acceptable level of safety by other means might be incompatible with the legislative framework accepted by all EASA Member States.⁶

The Agency by developing and amending regulations, as well as monitoring their impact aims for a continued maintenance of the acceptable level of safety and where necessary improvement thereof.

- According to 3.2.4: From 1 January 2009, States shall require, as part of their safety programme, that an operator implement a safety management system acceptable to the State of the Operator that, as a minimum:

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

>> *Response:* EU-OPS 1.037 paragraph (a) requires the establishment and maintenance of an accident prevention and flight safety programme in order to improve aviation safety. It does not require explicitly the definition of an acceptable level of safety and a continuous monitoring thereof by the operator which are key elements of a SMS. It also can be considered that the requirements of EU-OPS are reactive rather than pro-active. The SMS seems require indeed that the operator evaluates all potential risks related to its activities and mitigates them by anticipation. Only identifying risks and address them when they happen does probably not fulfil the intent of the SMS.

- According to 3.2.5: A safety management system shall clearly define lines of safety accountability throughout the operator's organisation, including a direct accountability for safety on the part of senior management.⁷

>> *Response:* EU-OPS 1.037 (a)(5) requires the appointment of a person accountable for managing the programme, but EU-OPS 1.037 in specific terms does not require the definition of lines of safety accountability throughout the operator's organisation and the senior management commitment. It moreover seems to imply a sharing of roles between the person in charge with corrective action and the one responsible for evaluating its effectiveness; this may not be the intent of the SMS. This problem may be reduced when the accident prevention and flight safety programme is integrated into the quality system as allowed by EU-OPS 1.037.

⁶ This point was one of the drivers for the Agency choice of a conventional approach to UAV certification instead of safety target approach.

⁷ Guidance on safety management systems is contained in the Safety Management Manual (SMM) (Doc 9859).

- According to 3.2.7: 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 safety management system.⁸

>> *Response:* This point is covered by EU-OPS 1.037 paragraph (a)(4), for pro-active use of the digital data from routine operations to improve aviation safety. This is in compliance with pro-active character of managing safety in SMS.

- According to 3.2.8: A flight data analysis programme shall be non-punitive and contain adequate safeguards to protect the source(s) of the data.⁹

>> *Response:* covered by EU-OPS 1.037 paragraph (a)(5), which requires that the flight data monitoring programme shall be non-punitive and contain adequate safeguards to protect the source(s) of the data. This will be further strengthened by the extended Basic Regulation, which include similar wording.

- According to 3.2.9: An operator shall establish a flight safety documents system, for the use and guidance of operational personnel, as part of its safety management system.

>> *Response:* EU-OPS 1.037 paragraph (a)(3), requires that data shall be evaluated and promulgated. EU-OPS is therefore in compliance with the ICAO standard.

4.2. The table below provides a quick overview of the equivalence status of EASA system and EU-OPS 1.037 in relation to ICAO Annex 6 paragraph 3.2.

ICAO Annex 6	EASA system	Gap	Corrective action or Remarks
3.2.1	Article 2 EASA Basic Regulation EC No. 1592/2002	None.	EASA system contains the elements of the ICAO State Safety Programme. Further enhancement to be achieved by creating a safety Programme at Community level containing a description of the EASA system and complemented by EASA and national programme describing their organisation and means to implement the EASA system.

⁸ 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.

⁹ Guidance on flight data analysis programmes is contained in the Safety Management Manual (SMM) (Doc 9859). Legal guidance for the protection of information from safety data collection and processing systems is contained in Annex 13, Attachment E.

ICAO Annex 6	EASA system	Gap	Corrective action or Remarks
3.2.2	Article 2 EASA Basic Regulation EC No. 1592/2002	Definition of acceptable level of safety.	Although the acceptable level of safety has not been formally specified by the Community legislator when adopting the Basic Regulation, its intention is reflected in the essential requirements. Compliance with ICAO requirement can probably be achieved by expressing in words such political intentions.
3.2.4	EU-OPS 1.037 (a)	EU-OPS 1.037 (a) does not require the definition of an acceptable level of safety and a continuous monitoring thereof. It does not address future risks which may not be fully inline with the intent of ICAO standard.	To complement the provisions of EU-OPS the future EASA implementing rules on air operations to include the items mentioned in ICAO Annex 6 paragraph 3.2.4.
3.2.5	EU-OPS 1.037 (a)(5)	EU-OPS 1.037 does not specifically require the definition of lines of accountability throughout the operator's organisation and the senior management commitment. It also indicates a sharing of roles between various managers that may not be appropriate.	To complement the provisions of EU-OPS the future EASA implementing rules on air operations to include the items mentioned in ICAO Annex 6 paragraph 3.2.4. The implementing rules will contain the definition of lines of safety accountability throughout the operator's organisation and the senior management commitment.
3.2.7	EU-OPS 1.037 (a)(4)	None.	None.
3.2.8	EU-OPS 1.037 (a)(5)	None.	None

ICAO Annex 6	EASA system	Gap	Corrective action or Remarks
3.2.9	EU-OPS 1.037 (a)(3)	None	None

n/a. = not applicable

5. Conclusion

5.1 Out of the comparison and gap analysis performed in paragraph 4 of this paper the following could be concluded:

- EASA system contains the elements of the ICAO State Safety Programme.¹⁰ Further enhancement will be achieved by creating a safety programme at Community level specified in a clearly identifiable way the acceptable level of safety and containing a description of the EASA system and complemented by EASA and national programmes describing their organisation and means to implement the EASA system.

- EASA and National Aviation Authorities will cooperate in designing the Community Safety Programme.

- The major principles of ICAO Annex paragraph 3.2, like data collection, monitoring of safety performance, evaluation of data, providing data to personnel, anonymous reporting and pro-active attitude towards the improvement of aviation safety are included in EU-OPS 1.037.

- Member States by applying EU-OPS are making a positive move towards the implementation of an SMS, however for the full implementation of an SMS additional effort is required from organisations.

- To improve the EU-OPS compatibility with the SMS concept for organisations laid down in ICAO Annex 6 paragraph 3.2, the following should be included in the EASA implementing rules on SMS in addition to the existing EU-OPS provisions:

- Management commitment and responsibility.
- Hazard identification process.
- Preventive risk assessment and mitigation process.
- Safety promotion and communication.

The EASA system in the future should take into account the feasibility of imposing all the SMS elements, as described in paragraph 3.3 of this paper, to all organisations.

¹⁰ For the elements covered in the EASA system, see paragraph 4.1 of this paper.

Indeed, the Basic Regulations mandates that EASA takes special care in relation to the impact of the regulatory system on small and medium-enterprises when developing implementing rules.

- 5.2 Full compliance will be assured when the EASA system is extended to cover air operations and the necessary implementing rules, including the implementing rules on SMS, are be in place; this is planned to happen in due time to meet the ICAO implementation date of 1 January 2009.
- 5.3 An intermediate solution would be to elaborate a common position towards ICAO containing a gap analysis based on this paper, which the Agency and Member States could provide to ICAO during USOAP audits, as well as on-going corrective actions to comply in due time.

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Annex 1

ICAO Annex 6 - Standard Practices and Recommendations

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3.2 Safety management

3.2.1 States shall establish a 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.¹¹

3.2.3 Recommendation. States should require, as part of their safety programme, that an operator implement a safety management system acceptable to the State of the Operator that, as a minimum:

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

3.2.4 From 1 January 2009, States shall require, as part of their safety programme, that an operator implement a safety management system acceptable to the State of the Operator that, as a minimum:

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

3.2.5 A 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.¹²

¹¹ Guidance on safety programmes is contained in the Safety Management Manual (SMM) (Doc 9859), and the definition of acceptable levels of safety is contained in Attachment E to Annex 11.

¹² Guidance on safety management systems is contained in the Safety Management Manual (SMM) (Doc 9859).

3.2.6 Recommendation. 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 safety management system.

3.2.7 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 safety management system.¹³

3.2.8 A flight data analysis programme shall be non-punitive and contain adequate safeguards to protect the source(s) of the data.¹⁴

3.2.9 An operator shall establish a flight safety documents system, for the use and guidance of operational personnel, as part of its safety management system.¹⁵

.....

> end.

¹³ 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.

¹⁴ Guidance on flight data analysis programmes is contained in the Safety Management Manual (SMM) (Doc 9859). Legal guidance for the protection of information from safety data collection and processing systems is contained in Annex 13, Attachment E.

¹⁵ Guidance on the development and organization of a flight safety documents system is provided in Attachment H.

Annex 2

EU - OPS

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OPS 1.037 Accident prevention and flight safety programme¹⁶

(a) An operator shall establish and maintain an accident prevention and flight safety programme, which may be integrated with the Quality System, including:

(1) Programmes to achieve and maintain risk awareness by all persons involved in operations; and

(2) An occurrence reporting scheme to enable the collation and assessment of relevant incident and accident reports in order to identify adverse trends or to address deficiencies in the interests of flight safety. The scheme shall protect the identity of the reporter and include the possibility that reports may be submitted anonymously; and

(3) Evaluation of relevant information relating to accidents and incidents and the promulgation of related information, but not the attribution of blame; and

(4) A flight data monitoring programme for those aeroplanes in excess of 27 000 kg MCTOM. Flight Data Monitoring (FDM) is the pro-active use of digital flight data from routine operations to improve aviation safety. The flight data monitoring programme shall be non-punitive and contain adequate safeguards to protect the source(s) of the data; and

(5) The appointment of a person accountable for managing the programme.

(b) Proposals for corrective action resulting from the accident prevention and flight safety programme shall be the responsibility of the person accountable for managing the programme.

(c) The effectiveness of changes resulting from proposals for corrective action identified by the accident and flight safety programme shall be monitored by the Quality Manager.

> end.

¹⁶ Annex III to Regulation (EC) No. 3922/91 on the harmonisation of technical requirements and administrative procedures in the field of civil aviation will be effective on 16 July 2008.

Annex 3

REGULATION (EC) No 1592/2002 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 July 2002 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency

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Article 2

Objectives

1. The principal objective of this Regulation is to establish and maintain a high uniform level of civil aviation safety in Europe.
2. Additional objectives are, in the fields covered by this Regulation, as follows:
 - (a) to ensure a high uniform level of environmental protection;
 - (b) to facilitate the free movement of goods, persons and services;
 - (c) to promote cost-efficiency in the regulatory and certification processes and to avoid duplication at national and European level;
 - (d) to assist Member States in fulfilling their obligations under the Chicago Convention, by providing a basis for a common interpretation and uniform implementation of its provisions, and by ensuring that its provisions are duly taken into account in this Regulation and in the rules drawn up for its implementation;
 - (e) to promote Community views regarding civil aviation safety standards and rules throughout the world by establishing appropriate cooperation with third countries and international organisations.
3. The means of achieving the objectives set out in paragraphs 1 and 2 shall be:
 - (a) the preparation, adoption and uniform application of all necessary acts;
 - (b) the recognition, without additional requirements, of certificates, licences, approvals or other documents granted to products, personnel and organisations in accordance with this Regulation and its implementing rules;
 - (c) the establishment of an independent European Aviation Safety Agency;
 - (d) the uniform implementation of all necessary acts by the national aviation authorities and the Agency within their respective areas of responsibility.