



**AIR NAVIGATION COMMISSION**

# **GUIDE TO THE DRAFTING OF SARPS AND PANS**

**FINAL (Rev.1.5)**

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**INTERNATIONAL CIVIL AVIATION ORGANIZATION**



## FOREWORD

This guide document was prepared by the Air Navigation Commission (ANC), with support from the Ad-hoc Working Group on Standards for Standards of the ANC, to assist Expert Groups in the development of Standards and Recommended Practices (SARPs) and Procedures for Air Navigation Services (PANS).

Mindful that one of the core missions of ICAO is setting up SARPS and PANS, and that this is critical to both contracting States and other stakeholders in the world to promote standardization of functional and operational requirements, safety in the air and the efficient and orderly development of air transport, ICAO needs to provide these with clear and consistent manner.

ICAO has produced over 10,000 SARPs and PANS and it currently has 191 Contracting States who use these in building up their regulatory and operational framework for global aviation system. Further, SARPs and PANS are initially drafted in partnership with Members of ANC, Members of diverse Expert Groups including Committees and Panels, as well as the Secretariat. That is why it is utmost importance to keep uniformity and consistency in drafting style and to communicate clearly, effectively and in plain writing that is readily understood and used by all.

It was determined to include five major topics in this *Guide to the Drafting of SARPs and PANS*, making most use of existing material, and following an assessment of the priority of guideline in drafting SARPs and PANS, i.e., *Part 1 - General information, Part 2 - Structure and Components of Annexes and PANS, Part 3 – Type of standards, Part 4 – Formulation of Proposals for SARPs and PANS, Part 5 – Plain Writing.*

The guide is designed not only to avoid ambiguity, but also to promote consistency, brevity, clarity, simplicity and hence to promote better global rule standardization for safety, regularity and efficiency of international air navigation as well as for environmental protection.

It is hoped that this guide document will assist the Members of ANC and Expert Groups as well as the Secretariat in carrying out their duties. Writing in a clear and consistent manner will be an evolutionary process; therefore, drafters should make efforts to follow the guidelines in this document to the extent possible.

This document is approved by the ANC, remains a living document and will be reviewed and updated regularly.

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## **PART 1. GENERAL INFORMATION**

### **1.1 Purpose of the document**

- 1.1.1 The purpose of this document is to provide consolidated material that is relevant to those involved in the drafting of the Standards and Recommended Practices (SARPs) and Procedures for Air Navigation Services (PANS) serving international civil aviation and also to provide an overview of the drafting style and conventions used by ICAO in this context. This document therefore contributes to promoting the continued development of consistent, reliable and effective SARPs and PANS.
- 1.1.2 Respecting an ICAO policy to reduce the number of Standards produced by the Organization and to shift focus towards the “Implementation of existing Standards”, this document introduces the notion that a stronger selection process be applied when ICAO is tasked to develop SARPs and PANS.
- 1.1.3 Selection criteria can be used to distinguish the relevance for ICAO to develop a particular provision and to set priorities. For example:
- a) A first step can be to determine if the request is clearly and directly applicable to ICAO – i.e. is the problem that is the subject of the request inside or outside the scope of ICAO?
  - b) If the request is inside the scope of ICAO, a next step can be to determine whether or not the problem has to be solved through the development of a Standard. In other words, is the solution to the problem necessarily a Standard or could some other form of ICAO provision (such as a Recommended Practice, a PANS or technical guidance material) be sufficient?
  - c) A further step in the selection process can be to determine if there is a link with an existing ICAO policy or strategy, and if there is a priority and anticipated timeline for ICAO to develop the required SARP, PANS or guidance.
- 1.1.4 This document is also a reflection of ICAO Assembly Resolution A38-11 which, *inter alia*, “Instructs the Council to utilize, to the maximum extent appropriate and subject to the adequacy of a verification and validation process, the work of other recognized standards making organizations in the development of SARPs, PANS and ICAO technical guidance material. Material developed by these other standards-making organizations may be deemed appropriate by the Council as meeting ICAO requirements; in this case such material should be referenced in ICAO documentation”.
- 1.1.5 Furthermore, this document is intended to promote the effective implementation, particularly by States, of ICAO’s Standards through their improved formulation. Standards that are properly formulated are easier to understand and implement,

facilitating the communication around the technical, non-technical and regulatory terms used among all concerned stakeholders.

- 1.1.6 This document has been developed, to the extent practicable, respecting drafting guidelines that already exist in order to avoid unnecessary confusion or divergence. These existing guidelines include the materials such as Doc 8143, ICAO Annexes, PANS, Assembly Resolutions, Secretariat instructions and ANC Procedures and Practices.

## **1.2 Applicability of the document**

This document applies to all those concerned with the drafting of SARPs and PANS. The drafter of SARPs or PANS should have a thorough knowledge of the contents of this document and, to the extent practicable, adhere to the principles herein.

## **1.3 Things to know before writing**

### **1.3.1 Identifying the audience**

- 1.3.1.1 Drafters should principally consider the intended audience first and foremost. Identify who the SARPs or PANS is addressing and write in a way that grabs and holds their attention and answers questions that they may have. It should be kept in mind that, often, the audience simply wants to know what applies to them.

- 1.3.1.2 ICAO's Standards have a large and diverse audience, including 191 Contracting States, regulatory authorities, accident investigation authorities, service providers, legal agencies, parliamentary offices and industry. Contracting States in particular need to consider the substance and impact of each provision and to decide how to incorporate it (i.e. how to institutionalize it) within their national legislative framework and hence use it in their policy-making and regulatory processes.

- 1.3.1.3 It is important therefore to follow the rules and guidelines appropriate to the subject and the intended audience. Text should be written clearly and concisely, and be well-organized in order for the intended audience to readily understand and appropriately implement the particular SARP or PANS. If the SARP or PANS is so complex and obscure that the audience cannot readily understand it, it may bring about an unintended result or simply not be implemented at all.

### **1.3.2 Determining the objectives**

The determination of a clear objective or objectives is the most important part of the drafting of SARPs and PANS. The objective of all SARPs and PANS is to effect a



positive change or limit the negative consequences of an issue relating to the safety, regularity and efficiency of air navigation as well as for environmental protection.

### 1.3.3 **ICAO policy considerations**

ICAO, as an international standard-setting organization, has established a policy on the formulation of SARPs and PANS, and keeps this up-to-date normally through the formulation of an Assembly Resolution or Resolutions. Drafters need to understand the ICAO policy on global standardization and implementation.

### 1.3.4 **The need for precision**

In view of the large and diverse audience and the national legislative work involved, the drafter of a SARP or PANS should be precise when drafting. Drafting that is imprecise may result in a downstream gap or ambiguity, unintended or otherwise. To avoid ambiguity, a provision should adequately deal with the necessary elements of a rule – *the “who, what, when, where and how”* rule, with a presumption that the “why” has already been taken care of in the identification of the need for a particular provision.

### 1.3.5 **Keeping uniformity in drafting style**

A uniform style in drafting SARPs and PANS, whilst occasionally difficult to achieve, is a worthwhile goal. It promotes global implementation of SARPs and PANS and fosters harmonization in respect of regulatory and operational requirements and conditions. Additionally, it will bring benefits to both regulators and other stakeholders in terms of safety, regularity and efficiency of air navigation as well as for environmental protection.

### 1.3.6 **The elements of a provision in an Annex or PANS**

1.3.6.1 ***The subject.*** A provision of SARPs or PANS should identify the subject of application (State, Organization, Operator, Service Provider, Person, etc.) to whom it applies. The subject may be universal (everyone) or nearly so (everyone within a broad class), or may be selective with respect to who it applies to.

1.3.6.2 ***The conduct.*** Typically, three main types of provisions exist:

- a) prohibiting or limiting certain things;
- b) requiring that certain things be done or that they be done in a certain manner; or
- c) permitting or authorizing certain thing to be done or allowing them to be done in a certain manner.

Thus, a provision identifies the conduct that is being prohibited, required, or permitted.

1.3.6.3 ***The object of the action.*** A provision usually identifies an object of the action.

1.3.6.4 ***Condition - if necessary.*** A provision often identifies the circumstances of the action. This may consist of when or where it is operative.

1.3.7 **Impact assessment**

1.3.7.1 In the process of making SARPs or PANS, it would be important for the impact assessments to be completed before the preliminary review by the ANC. This would help the ANC in its deliberations and the assessment could then be shared with States and international organizations when the proposals are sent out for comment, allowing them to provide further views. These could then be considered at the final review stage. In the end, a more complete appreciation of impacts could be provided to the Council.

1.3.7.2 Each expert group would be asked to state the objective opinions to the question of the impact of their proposals on cost, safety, security, efficiency and environment using the “Impact Assessment and Implementation template” available on the *ANCPANELS portal*.

1.3.7.3 Impact assessments to SARPs and PANS development processes could also provide Contracting States with useful background information and impact expectations to support their national regulatory impact assessment.

1.3.8 **Structure, status and process of ICAO technical publications**

Once a proposal to amend an Annex or PANS is prepared by an expert group, it will be sent to the ANC for examination and establishment of final text to recommend to the Council for adoption. It is important to understand the structure, status and process of various ICAO technical publications for good writing and for achievement of the drafter’s original intent.

*Note.1 – Detailed information on ICAO technical publications is contained in Section 1.4 and Appendix A of this document.*

*Note.2 – There are four primary sets of expert groups which have been established and tasked to develop SARPs or relevant procedures, by the Council, Air Navigation Commission, Air Transport Committee and Unlawful Interference Committee. The ANC examines primarily the recommendations emanating from the panels under which its direct control. For the recommendations from the Committee on Aviation and Environmental Protection (CAEP) and the Aviation Security Panel (AVSECP) that are not under its control, the information is normally discussed from technical/operational perspective, and presented to the Council in accordance with established Directives (C-WP/13732, C-DEC 193/5 and C-WP/13928, C-DEC199/1 respectively)*

## **1.4 Overview of ICAO Technical Publications**

*Note. — The following summary gives the status, and also describes in general terms the contents of the various series of technical publications issued by the International Civil Aviation Organization.*

### **1.4.1 International Standards and Recommended Practices (SARPs)**

1.4.1.1 SARPs are adopted by the Council in accordance with Articles 54, 37 and 90 of the Convention on International Civil Aviation and are designated, for convenience, as Annexes to the Convention.

1.4.1.2 The uniform application by Contracting States of the specifications contained in the International Standards is recognized as necessary for the safety or regularity of international air navigation while the uniform application of the specifications in the Recommended Practices is regarded as desirable in the interest of safety, regularity or efficiency of international air navigation as well as of environmental protection.

1.4.1.3 Knowledge of any differences between the national regulations or practices of a State and those established by an International Standard is essential to the safety or regularity of international air navigation. In the event of non-compliance with an International Standard, a State has, in fact, an obligation, under Article 38 of the Convention, to notify the Council of any differences.

1.4.1.4 Knowledge of differences from Recommended Practices may also be important for the safety of air navigation and, although the Convention does not impose any obligation with regard thereto, the Council has invited Contracting States to notify such differences in addition to those relating to International Standards.

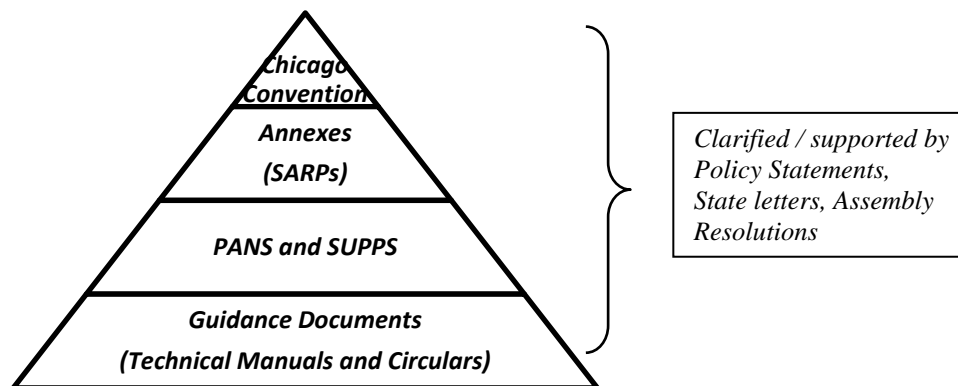
### **1.4.2 Procedures for Air Navigation Services (PANS)**

1.4.2.1 PANS are approved by the Council for worldwide application. They contain, for the most part, operating procedures regarded as not yet having attained a sufficient degree of maturity for adoption as SARPs, as well as material of a more permanent character which is considered too detailed for incorporation in an Annex, or is susceptible to frequent amendment, for which the processes of the Convention would be too cumbersome.

1.4.2.2 PANS do not have the same status as the Standards and Recommended Practices. While the latter are adopted by Council in pursuance of Article 37 of the Convention on International Civil Aviation, subject to the full procedure of Article 90, the PANS are approved by the Council and recommended to Contracting States for worldwide application.

- 1.4.2.3 While the PANS may contain material which may eventually become SARPs when it has reached the maturity and stability necessary for adoption as such, they may also comprise material prepared as an amplification of the basic principles in the corresponding SARPs, and designed particularly to assist the user in the application of those SARPs.
- 1.4.3 **Regional Supplementary Procedures (SUPPS)**
- SUPPS have a status similar to that of PANS in that they are approved by the Council, but only for application in the respective regions. They are prepared in consolidated form, since certain of the procedures apply to overlapping regions or are common to two or more regions.
- 1.4.4 **Technical Manuals** provide guidance and information in amplification of the SARPs and PANS, the implementation of which they are designed to facilitate.
- 1.4.5 **Air Navigation Plans** detail requirements for facilities and services for international air navigation in the respective ICAO Air Navigation Regions. They are prepared on the authority of the Secretary General on the basis of recommendations of regional air navigation meetings and of the Council action thereon. The plans are amended periodically to reflect changes in requirements and in the status of implementation of the recommended facilities and services.
- 1.4.6 **ICAO Circulars** make available specialized information of interest to Contracting States. This includes studies on technical subjects.

**Figure 1-1 – Hierarchy of ICAO technical document**



## 1.5 SARPs and Global Rule Standardization

- 1.5.1 Article 37 of the Chicago Convention requires ICAO to adopt and amend SARPs and states the purpose of, and the matters to be dealt with in, that action. It also requires each contracting State to collaborate in securing the highest practicable degree of uniformity in regulations and practices in all matters in which such uniformity will facilitate and

improve air navigation. SARPs provide the regulatory and operational framework for Contracting States to build a civil aviation safety system based on mutual trust and recognition.

- 1.5.2 The uniform implementation of ICAO SARPs is a fundamental tenet of the Convention on International Civil Aviation (the Chicago Convention) and forms the foundation of a safe global aviation system. Standardization therefore refers to this uniform and consistent implementation of SARPs.

*Note. – ICAO is a specialized agency of the United Nations and has 191 sovereign states as its members. The most important legislative function performed by ICAO consists of the formulation and adoption of SARPs for aviation safety, security, regularity and efficiency, as well as for aviation environmental protection. Furthermore, SARPs adopted by ICAO are of a regulatory character and are expected to be included in national regulations in highest practical degree by contracting States regulators.*

- 1.5.3 Standardization contributes to a sustainable aviation safety strategy. At the highest level, implementation of ICAO provisions enhances safety in aviation operations through the development and implementation of effective and harmonized regulations at the national, regional and global level. Similarly, adherence to industry's best practice serves to enhance standardization for activities conducted by service providers. States are obligated to provide timely notification to ICAO when adopting regulations or practices differing from those established by ICAO SARPs.

## **1.6 General Policies on Formulation of SARPs and PANS**

- 1.6.1 The main policies and practices governing the formulation of SARPs and PANS are set forth in Appendix B to the Assembly Resolution containing the consolidated statement of continuing ICAO policy and associated practices related specifically to air navigation .

- 1.6.2 Rules for the formulation of SARPs and PANS are contained in Part II of the Directives to Divisional-type Air Navigation Meetings (Doc 8143).

*Note. — The other policies and practices governing the development of SARPs and/or guidance material relating each domain of environmental protection, facilitation, or security can be found in diverse Assembly Resolutions respectively.*

### **1.6.3 Drafting in clear, simple and concise language**

SARPs and PANS shall be drafted in clear, simple and concise language. SARPs shall consist of broad, mature and stable provisions specifying functional and performance requirements that provide for the requisite levels of safety, regularity and efficiency.

#### 1.6.4 **Consistency between SARPs and PANS**

The Council should ensure that provisions of SARPs and PANS are completely consistent with each other. Furthermore, the Council should endeavour to improve the processing, presentation and usefulness of ICAO documents containing SARPs, PANS and other related provisions, especially for complex systems and their associated applications. To that end the Council should promote the development and upkeep of broad system-level, functional and performance requirements.

#### 1.6.5 **Effect of Annex amendments on other regulatory documents**

Whenever an amendment to an Annex is being prepared, consideration is given to the effect of that amendment upon other Annexes, PANS or other regulatory documents. In addition, consideration should be given to the preparation of relevant guidance material in a timely manner. The Secretariat should ensure that the necessary coordination is carried out.

### 1.7 **Abbreviations**

**AIRAC.** Aeronautical Information Regulation and Control

**ANB.** Air Navigation Bureau

**ANC.** Air Navigation Commission

**AVSECP.** Aviation Security Panel

**CAEP.** Committee on Aviation Environmental Protection

**CNS.** Communication, Navigation and Surveillance

**EFOD.** Electronic Filing of Differences

**ICAO.** International Civil Aviation Organization

**PANS.** Procedures for Air Navigation Services

**SARPs.** Standards and Recommended Practices

**SUPPS.** Regional Supplementary Procedures

### 1.8 **References**

Doc 7300/9 – Convention on International Civil Aviation

Doc 10022 – Assembly Resolutions

ICAO Annexes 1 to 19 inclusive

PANS (Procedures for Air Navigation Services)

Doc 7030 – Regional Supplementary Procedures

Doc 9713 – International Civil Aviation Vocabulary

Doc 9673 – Air Navigation Plan

Doc 7231 – ICAO Publications Regulations

Doc 8146 – Rules of Procedures for Standing Committees of the Council

Doc 7984 – Directives for Panels of the Air Navigation Commission

Doc 8143 – Directives to Divisional-type Air Navigation Meetings and Rules of Procedure for their Conduct

Doc 9482 – Directives for Panels of the Air Transport Committee

Directives for the Committee on Aviation and Environmental Protection ( C-WP/13732, C-DEC 193/5)

Directives for Panels of the Committee on Unlawful Interference (C-WP/13928, C-DEC199/1)

ANB Secretariat Instructions

C-DEC 156 (C-WP/11091)

Air Navigation Commission Procedures and Practices

ANC Minutes 194-6 (AN-WP/8827)

## PART 2. STRUCTURE AND COMPONENTS OF ANNEXES AND PANS

### 2.1 Annexes

2.1.1 There are currently nineteen Annexes to the Convention as follows.

Annex
Annex 1 (Personnel Licensing)
Annex 2 (Rules of the Air)
Annex 3 (Meteorological Service for International Air Navigation)
Annex 4 (Aeronautical Charts)
Annex 5 (Units of Measurement to be Used in Air and Ground Operations)
Annex 6, Parts I, II & III (Operation of Aircraft)
Annex 7 (Aircraft Nationality and Registration Marks)
Annex 8 (Airworthiness of Aircraft)
Annex 9 (Facilitation)
Annex 10, Volumes I, II, III, IV and V (Aeronautical Telecommunications)
Annex 11 (Air Traffic Services)
Annex 12 (Search and Rescue)
Annex 13 (Aircraft Accident and Incident Investigation)
Annex 14 (Aerodromes)
Annex 15 (Aeronautical Information Services)
Annex 16 Volumes I & II (Environmental Protection)
Annex 17 (Security)
Annex 18 (The Safe Transport of Dangerous Goods by Air)
Annex 19 (Safety Management)

2.1.2 Structure and contents of Annexes

An Annex is made up of the following structure and component parts, not all of which, however, are necessarily found in every Annex:

- a) Table of contents
  - Includes lists of abbreviations and referenced documents
- b) Foreword
  - Historical background
  - Applicability
  - Action by Contracting States
  - Status of Annex components
  - Selection of language
  - Editorial practices
  - Table of amendments



- c) International Standards and Recommended Practices
  - Definitions
  - Standards and Recommended Practices
  - Appendices ( if any)
- d) Attachments (if any)

*Note. - These elements are described in the Directives to Divisional-type Air Navigation Meetings and Rules of Procedure for their Conduct (Doc 8143, Part II) more fully below.*

2.1.3 These components are described more fully in the table below.

Annex component	Annex sub-component	Description of component/sub-component
a) Table of contents	—	<p>In addition to a normal table of contents, this section of an Annex may contain a list of abbreviations and acronyms found in the Annex and a list of other documents referred to therein, if such lists are appropriate and useful.</p> <p>This section of an Annex does not have to be approved by the ANC or Council, although it is desirable to advise the ANC when a list of abbreviations or documents is added for the first time.</p>
b) Foreword	Historical background	<p>This contains a broad outline of the development of the Annex since it was first adopted, including a brief description of significant amendments.</p> <p>New text is only added to this part of the Foreword in the event of a major amendment. Table A, always placed at the end of the Foreword, is part of the Historical Background.</p> <p>It contains a list of amendments and is updated every time the Annex is amended.</p> <p>The table has a standard format containing four columns. The first column contains the amendment number; the second column indicates the source(s) of the amendment (e.g. panel meeting, divisional meeting, Air Navigation Commission); the third column contains a brief list of the subjects amended; and the fourth column shows the dates on which the amendment was adopted, became effective and became applicable.</p>

	Applicability	<p>This describes the general applicability of the Annex and rarely, if ever, needs to be amended in an existing Annex.</p> <p>Each amendment to the Annex has a specific applicability date which is shown in Table A of the Foreword, and specific Standards or Recommended Practices in the Annex, or groups thereof, may have associated applicability dates attached to them.</p>
	Action by Contracting States	<p>This contains several sub sections with information on topics such as the notification of differences, promulgation of information, use of the Annex text in national regulations, as well as specific actions which may be relevant for a particular Annex.</p> <p>This part of the Foreword is rarely, if ever, amended in existing Annexes.</p>
	Status of Annex components	This is a standard text explaining the status of Standards, Recommended Practices, Forewords etc. This text does not change.
	Selection of language	This indicates the languages in which the Annex is available. The text is only changed if the Annex becomes available in an additional language.
	Editorial practices	This explains the editorial practices used to distinguish between Standards, Recommended Practices and Notes. The text is standard and does not need to be amended.
	Table of amendments	Self-explanatory.
c) International Standards and Recommended Practices	Definitions	<p>Definitions of terms used in the Standards and Recommended Practices which are not self-explanatory in that they do not have accepted dictionary meanings. A definition does not have independent status but is an essential part of each Standard and Recommended Practice in which the term is used, since a change in the meaning of the term would affect the specification.</p> <p><i>Note. – Drafting rules for Definitions are contained in Part 4, Section 1 of this document.</i></p>
	Standards and Recommended Practices	<p>There are Standards and Recommended Practices in an Annex which constitute rule of law through the Chicago Convention and form a regulatory framework for global aviation.</p> <p><b>Standard:</b> Any specification for physical characteristics, configuration, material, performance, personnel or procedure, the uniform application of which is recognized as necessary for the safety or regularity of international air</p>

		<p>navigation and to which Contracting States will conform in accordance with the Convention; in the event of impossibility of compliance, notification to the Council is compulsory under Article 38.</p> <p><b><i>Recommended Practices:</i></b> Any specification for physical characteristics, configuration, material, performance, personnel or procedure, the uniform application of which is recognized as desirable in the interest of safety, regularity or efficiency of international air navigation, and to which Contracting States will endeavour to conform in accordance with the Convention.</p> <p>Standards are printed in normal typeface. Recommended Practices are printed in italic typeface and are preceded by the word “Recommendation” in bold type.</p> <p><i>Note1. – It should be noted that Annex 9 has the different definition of a SARP as follows:</i></p> <p><b><i>Standard:</i></b> Any specification, the uniform observance of which has been recognized as practicable and as necessary to facilitate and improve some aspect of international air navigation, which has been adopted by the Council pursuant to Article 54 (l) of the Convention, and in respect of which non-compliance must be notified by Contracting States to the Council in accordance with Article 38.</p> <p><b><i>Recommended Practice:</i></b> Any specification, the observance of which has been recognized as generally practicable and as highly desirable to facilitate and improve some aspect of international air navigation, which has been adopted by the Council pursuant to Article 54 (l) of the Convention, and to which Contracting States will endeavour to conform in accordance with the Convention.</p> <p><i>Note2. – Drafting rules for Standards and Recommended Practices are contained in Part 4, Section 1 of this document.</i></p>
	Appendices (if any)	<p>These contain material which is an integral part of a Standard or Recommended Practice but which is considered too specifically technical or too voluminous to be appropriately accommodated within the main body of SARPs.</p> <p>In Annexes which, by their nature, contain a large volume of detailed technical specifications, the ANC has agreed that</p>

		<p>such material should in the future be placed in an appendix, especially where it does not contain regulatory requirements, it contains detailed information on procedures and it is of an evolutionary character and consequently subject to change.</p> <p>The objective is to make it possible to consider such Appendices, which primarily address the aviation industry, as being standalone documents.</p> <p><i>Note. – Drafting rules for Appendices are contained in Part 4, Section 1 of this document.</i></p>
	Tables, Figures, Diagrams and Illustrations	<p>These add to or illustrate a Standard or Recommended Practices and are referred to therein. They form part of the associated Standard or Recommended Practice and have the same status.</p>
d) Notes	—	<p>These are included in the text, where appropriate, to give factual information or references bearing on the Standards or Recommended Practices in question, but not constituting part of the Standards or Recommended Practices.</p> <p><i>Note. – Drafting rules for Notes are contained in Part 4, Section 1 of this document.</i></p>
e) Introductions	—	<p>Explanatory material introduced at the beginning of parts, chapters or sections of the Annex to assist in the understanding of the application of the text</p>
f) Attachments (if any)	—	<p>Material supplementary to the SARPs, but prepared for guidance in their application, may be placed at the end of an Annex as an Attachment.</p> <p>However, such material should only be included in an Annex if it is not appropriate to include it in a manual or other document. Attachments are printed on green paper.</p> <p><i>Note. – Drafting rules for Attachments are contained in Part 4, Section 1 of this document.</i></p>

#### 2.1.4 Adoption and approval of components and elements

2.1.4.1 Standards and Recommended Practices are adopted by the Council under the provisions of the Convention. They include *Standard, Recommended Practice, Appendices, Definitions, Tables and Figures*.

2.1.4.2 Forewords, Instructions, Notes, Attachments are approved by the Council for publication in association with the SARPs.

## 2.2 Procedures for Air Navigation Services (PANS)

2.2.1 There are currently five PANS documents as follows:

PANS
PANS-ATM (Doc 4444) — Air Traffic Management
PANS-OPS (Doc 8168) — Aircraft Operations
PANS-ABC (Doc 8400) — ICAO Abbreviations and Codes
PANS-TRG (Doc 9868) — Training
PANS-Aerodromes (Doc 9981) — Aerodromes

2.2.2 Most PANS are structured as follows:

- a) Table of contents
- b) Foreword
  - Historical background or Introduction
  - Scope and purpose of the document
  - Status
  - Implementation
  - Publication of differences
  - Promulgation of information
- c) Procedures for Air Navigation Services
- d) Appendices
- e) Attachments

2.2.3 These components are described more fully in the table below.

PANS component	PANS sub-component	Description of component/sub-component
a) Table of contents	—	Self-explanatory
b) Foreword	Historical background or Introduction	This contains a brief history of the development of the PANS and includes Table A containing a list of Amendments. This table is similar to that appearing in the Annexes and is always placed at the end of the Foreword.
	Scope and purpose of the document	This section indicates the relationship of the PANS to specific Annexes, where appropriate, and any other necessary commentary on the contents of the document.

	Status	This section contains a standard paragraph explaining the status of PANS relative to annexes. It may also indicate that the material is in amplification of existing SARPs and that it may be upgraded to the status of SARPs when it becomes sufficiently mature, if such is in fact the case.
	Implementation	This section contains a standard text with additional remarks related to the subject of the specific PANS.
	Publication of differences	This is a standard section explaining the position regarding the notification of differences from the PANS.
	Promulgation of information	This is a standard text referring to the provisions of Annex 15 relating to the promulgation of information.
	Table of amendments	Self-explanatory.
c) Procedures for Air Navigation Services	—	This is the main body of the document containing the detailed procedures. It is usually divided into Parts. The first Part normally contains definitions and may contain other information of a general nature.
d) Appendices	—	As in Annexes, these contain material with the same status as that in the body of the PANS but which is too voluminous or whose technical content is such that it is more conveniently placed in an appendix.
e) Attachments	—	These contain guidance material included to supplement the provisions of the main body of the PANS, but having a lesser status. Attachments are printed on green paper.

#### 2.2.4 Approval of PANS

PANS amendments are only subject to approval and not to adoption by the Council, as in the case of Annexes. Although the Council is required to approve amendments to PANS, it has delegated powers to the ANC to approve them, subject to approval by the President of the Council after their circulation to the Representatives on the Council.

*Note. – The relevant decision was taken during the 8<sup>th</sup> and 12<sup>th</sup> meetings of the 156<sup>th</sup> Session (156/8 & 12, C-WP/11091).*

#### 2.2.5 The processes and procedures relating to the management of PANS are generally the same as those for Annexes.

### 2.3 Specific Instructions

#### 2.3.1 Technical Instructions for the Safe Transport of Dangerous Goods

The Technical Instructions for the Safe Transport of Dangerous Goods (TI) are the

detailed provisions which support the broad requirements of Annex 18. While in themselves the TIs do not have the status of SARPs or PANS, the TIs do have a special status conferred on them by paragraph 2.2.1 of Annex 18 which states:

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

2.3.2 As this Standard indicates, the Council has established a special procedure for the amendment and periodic reissue of the TI.

*Note. – It should be noted that the proposals for adoption of or amendment to TI are not circulated to States or International organizations for comments before the adoption by the Council.*

## PART 3. TYPE OF STANDARDS

### 3.1 General introduction

- 3.1.1 The overall goal of standards and recommended practices (SARPs) in ICAO Annexes is to ensure and enhance the safety, regularity and efficiency of the global aviation system. The SARPs can achieve this in at least two basic ways. They can prescribe exactly what actions must be taken to achieve the goal (prescriptive approach) or they can incorporate the required goal into the language of the rule, specifying the desired level of safety, regularity and efficiency performance and allowing the State or service provider to decide how to achieve that level (performance-based approach).
- 3.1.2 All SARPs fall somewhere along a spectrum in terms of how much detail is specified and what is left to interpretation and often may have prescriptive and performance based elements.

### 3.2 Prescriptive approach

- 3.2.1 Prescriptive SARPs define how activities are to be undertaken (e.g., what equipment, techniques or materials to use, what qualifications must be held, where the function may be performed). Typically there is only one solution and it is relatively easy to confirm compliance.
- 3.2.2 While prescriptive standards can often be the best solution for achieving harmonized procedures among all Contracting States there are a number of limitations to their effectiveness. The prescriptive standards tend to be based on past experience which may become less relevant over time, possibly bringing elevated safety risk. They prescribe the minimum requirement and this often becomes the maximum that is actually done, with attention focused on compliance rather than the management of safety risk. In addition, prescriptive standards can limit innovation by not allowing the mitigation of the underlying safety risks in new and innovative ways.

**Example: Annex 1 – Private pilot licence**

*2.3.3.1.1 The applicant shall have completed not less than 40 hours of flight time, or 35 hours if completed during a course of approved training, as a pilot of aeroplanes appropriate to the class rating sought.*

**Example: Annex 2 – Right-of-way**

*3.2.2.2 Approaching head-on. When two aircraft are approaching head-on or approximately so and there is danger of collision, each shall alter its heading to*



the right.

**Example: ANNEX6, Part I – Ground Proximity Warning System (GPWS)**

6.15.1 All turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5 700 kg or authorized to carry more than nine passengers shall be equipped with a ground proximity warning system.

6.15.2 All turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 15 000 kg or authorized to carry more than 30 passengers shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.

### 3.3 Performance-based approach

- 3.3.1 A performance-based SARP specifies the performance or outcome required but leaves the method of achieving that outcome up to the discretion of the regulated entity.

*Note. – Performance-based Standards include specifications on how the required performance can be achieved. In addition, ICAO gives priority to make use of specifications developed by other recognized Standards-making organizations subject to the adequacy of a verification and validation process.*

- 3.3.2 While performance-based standards provide the greatest flexibility to allow development of effective solutions that will meet the required performance target there are a number of limitations to their use. The key difficulty with performance-based SARPs is the ability to demonstrate compliance i.e. measuring or assessing actual performance of the solution against the SARP performance target. Establishing good performance criteria that allow easy confirmation of compliance can be difficult.

- 3.3.3 Loosely specified performance-based standards, by definition, create uncertainty for both regulators and regulated entities with respect to enforcement and compliance issues. Moreover, regulators who are accustomed to enforcing relatively straightforward prescriptive standards are frequently uncomfortable with the discretion inherent in loosely specified performance-based standards.

**Example: ANNEX 6, Part I – Fatigue Risk Management System (FRMS)**

4.10.5 States that approve an operator's FRMS shall establish a process to ensure that an FRMS provides a level of safety equivalent to, or better than, the prescriptive fatigue management regulations. As part of this process, the State of

*the Operator shall:*

- a) require that the operator establish maximum values for flight times and/or flight duty periods(s) and duty period(s), and minimum values for rest periods. These values shall be based upon scientific principles and knowledge, subject to safety assurance processes, and acceptable to the State of the Operator;*
- b) mandate a decrease in maximum values and an increase in minimum values in the event that the operator's data indicates these values are too high or too low, respectively; and*
- c) approve any increase in maximum values or decrease in minimum values only after evaluating the operator's justification for such changes, based on accumulated FRMS experience and fatigue-related data.*

*4.10.6 Where an operator implements an FRMS to manage fatigue-related safety risks, the operator shall, as a minimum:*

- a) incorporate scientific principles and knowledge within the FRMS;*
- b) identify fatigue-related safety hazards and the resulting risks on an ongoing basis;*
- c) ensure that remedial actions, necessary to effectively mitigate the risks associated with the hazards, are implemented promptly;*
- d) provide for continuous monitoring and regular assessment of the mitigation of fatigue risks achieved by such actions; and*
- e) provide for continuous improvement to the overall performance of the FRMS.*

*Note.— Detailed requirements for an FRMS are in Appendix 7.*

**Example: Annex 16 – Environmental Protection**

*2.4.1 The maximum noise levels of those aeroplanes covered by 2.1.1, when determined in accordance with the noise evaluation method of Appendix 1, shall not exceed the following:*

- a) at lateral and approach noise measurement points: 108 EPNdB for aeroplanes with maximum certificated take-off mass of 272 000 kg or over, decreasing linearly with the logarithm of the mass at the rate of 2 EPNdB per halving of the mass down to 102 EPNdB at 34 000 kg, after which the limit remains constant;*

- b) *at flyover noise measurement point: 108 EPNdB for aeroplanes with maximum certificated take-off mass of 272 000 kg or over, decreasing linearly with the logarithm of the mass at the rate of 5 EPNdB per halving of the mass down to 93 EPNdB at 34 000 kg, after which the limit remains constant.*

### 3.4 Hybrid approach

- 3.4.1 To allow for the utilization of the best aspects of both prescriptive and performance-based SARPs, it is possible in some cases to adopt a hybrid approach. The prescriptive text establishes a minimum standard that must be complied with but a performance based standard is included to allow alternative solutions based on defined performance criteria. In these cases the performance-based standard should not allow a lower level of operational or safety performance than that required by the prescriptive requirement.

**Example: Annex 6 – Alternate aerodromes**

4.3.4 *Alternate aerodromes*

4.3.4.1 *Take-off alternate aerodrome*

4.3.4.1.1 *A take-off alternate aerodrome shall be selected and specified in the operational flight plan if either the meteorological conditions at the aerodrome of departure are below the operator's established aerodrome landing minima for that operation or if it would not be possible to return to the aerodrome of departure for other reasons.*

4.3.4.1.2 *The take-off alternate aerodrome shall be located within the following flight time from the aerodrome of departure:*

- a) *for aeroplanes with two engines, one hour of flight time at a one-engine-inoperative cruising speed, determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass; or*
- b) *for aeroplanes with three or more engines, two hours of flight time at an all engines operating cruising speed, determined from the aircraft operating manual, calculated in ISA and still-air conditions using the actual take-off mass; or*
- c) *for aeroplanes engaged in extended diversion time operations (EDTO) where an alternate aerodrome meeting the distance criteria of a) or b) is not available, the first available alternate aerodrome located within the distance of*

*the operator's approved maximum diversion time considering the actual take-off mass.*

*4.3.4.1.3 For an aerodrome to be selected as a take-off alternate the available information shall indicate that, at the estimated time of use, the conditions will be at or above the operator's established aerodrome operating minima for that operation.*

*4.3.4.2 En-route alternate aerodromes En-route alternate aerodromes, required by 4.7 for extended diversion time operations by aeroplanes with two turbine engines, shall be selected and specified in the operational and air traffic services (ATS) flight plans.*

*4.3.4.3 Destination alternate aerodromes*

*4.3.4.3.1 For a flight to be conducted in accordance with the instrument flight rules, at least one destination alternate aerodrome shall be selected and specified in the operational and ATS flight plans, unless:*

- a) the duration of the flight from the departure aerodrome, or from the point of in-flight re-planning, to the destination aerodrome is such that, taking into account all meteorological conditions and operational information relevant to the flight, at the estimated time of use, a reasonable certainty exists that:
 
  - 1) the approach and landing may be made under visual meteorological conditions; and*
  - 2) separate runways are usable at the estimated time of use of the destination aerodrome with at least one runway having an operational instrument approach procedure; or**
- b) the aerodrome is isolated. Operations into isolated aerodromes do not require the selection of a destination alternate aerodrome(s) and shall be planned in accordance with 4.3.6.3 d) 4);
 
  - 1) for each flight into an isolated aerodrome a point of no return shall be determined; and*
  - 2) a flight to be conducted to an isolated aerodrome shall not be continued past the point of no return unless a current assessment of meteorological conditions, traffic and other operational conditions indicate that a safe landing can be made at the estimated time of use.**

*4.3.4.3.2 Two destination alternate aerodromes shall be selected and specified in the operational and ATS flight plans when, for the destination aerodrome:*

- a) meteorological conditions at the estimated time of use will be below the operator's established aerodrome operating minima for that operation; or*
- b) meteorological information is not available.*

*4.3.4.4 Notwithstanding the provisions in 4.3.4.1, 4.3.4.2 and 4.3.4.3, the State of the Operator may, based on the results of a specific safety risk assessment conducted by the operator which demonstrates how an equivalent level of safety will be maintained, approve operational variations to alternate aerodrome selection criteria. The specific safety risk assessment shall include at least the:*

- a) capabilities of the operator;*
- b) overall capability of the aeroplane and its systems;*
- c) available aerodrome technologies, capabilities and infrastructure;*
- d) quality and reliability of meteorological information;*
- e) identified hazards and safety risks associated with each alternate aerodrome variation; and*
- f) specific mitigation measures.*

## **PART 4. FORMULATION OF PROPOSALS FOR SARPS AND PANS**

### **4.1 Annexes to the Convention**

#### **4.1.1 Standards and Recommended Practices (SARPs)**

- 4.1.1.1 To qualify as a Standard, the specification must be such that its uniform application by all Contracting States is necessary in the interests of safety or regularity of international air navigation. However, the applicability of the Standard may be made subject to the existence of certain specified conditions, such as characteristics of terrain, flight stages, density of traffic, climatological conditions, etc.
- 4.1.1.2 To qualify as a Recommended Practice, a specification must be such that its uniform application by all Contracting States is recognized as desirable, but not essential, in the interests of safety, regularity or efficiency of international air navigation.
- 4.1.1.3 In case of lack of agreement on the details of a specification necessary for safety, the minimum agreed requirements essential for the safety of international air navigation shall be extracted from the specification and recommended separately for the status of Standards.
- 4.1.1.4 The following rules shall be observed in the drafting of SARPs:
- a) *A Standard* shall contain a statement specifying an obligation by means of “shall”. If the obligation applies only under specified conditions, the Standard shall contain subsidiary statements specifying precisely those conditions. For subsidiary statements verbs such as “may” and “need not” are acceptable.
  - b) *A Recommended Practice* shall contain the same elements as a Standard but “should” shall be used instead of “shall” in the main statement specifying the recommendation. The word “Recommendation” shall prefix the text of a Recommended Practice.
  - c) The text of SARPs shall not depend upon or include references to material of lower status in a manner that would give a higher status to that material.
  - d) SARPs shall be drafted in language which is clear and simple and does not introduce ambiguity.
  - e) Duplication of SARPs may be avoided by the use of cross referencing notes. However, where continuity is essential, some duplication is acceptable.

#### **4.1.2 Definitions**

4.1.2.1 Definitions are included in Annexes to simplify the drafting of texts, to obviate the need for repetition and to assist in the interpretation of terms which are used in SARPs and have a particular technical meaning.

4.1.2.2 A definition constitutes an essential part of the SARPs in which it is used, since a change in the meaning of the definition would affect the specifications. It has no independent status.

4.1.2.3 The following rules shall be observed in the drafting of definitions in an Annex:

- a) Definitions shall explain the meaning of terms in their normal usage in the Annex. They shall not comprise statements which are in the nature of specifications.
- b) The number of definitions introduced into an Annex shall be kept to a minimum and they should be grouped at the beginning of the Annex under the title “Definitions”.
- c) Terms which are being used in their normal dictionary meaning or whose meanings are generally known shall not be defined.
- d) Terms already defined in an Annex shall always be used when applicable, and the same term shall always be used to express the same meaning.
- e) When it is necessary to define a term not already defined, the implication on other Annexes in which the term might also find application shall be considered.

*Note. - Definitions are normally grouped together to form the first chapter of the main part of the Annex. All definitions appearing in Annexes and PANS are collected from time to time and published in the International Civil Aviation Vocabulary, Volumes I & II (Doc 9713) which should always be checked before a new definition is developed.*

#### **4.1.3 Appendices**

4.1.3.1 As an Appendix forms part of SARPs, it shall always be the subject of an enabling clause within SARPs.

4.1.3.2 An Appendix shall be drafted to conform to the enabling specification. If the enabling specification is a Standard, then the associated Appendix shall be phrased throughout in mandatory form, although alternatives to the verbs “shall” and “shall not” may be used. If an enabling specification is a Recommended Practice, the associated Appendix shall not

include any expressions used for denoting a standard status.

#### **4.1.4 Tables, Figures, Diagrams and Illustrations**

- 4.1.4.1 SARPs may be expressed in text with tables, figures or diagrams. Where it is necessary that a specification is presented in a figure, diagram or illustration then text shall state a SARP is contained in the table, figure or diagram. Tables, figures or diagrams should be monochromatic line draws where possible.

*Note. – Where not possible to use monochromatic representations, a figure or diagram should be drawn taking into account the “colour vision deficiency”.*

- 4.1.4.2 These may include numerical format, maps, graphs, or other pictorial material. All details, such as captions, numbers, place names, and keys, must be completely legible.

- 4.1.4.3 Tables should be used when they are the most efficient means of presenting information in an easily comprehensible form. Each table should be referred to explicitly within the text. Tables may be used, for example:

- a) to supplement, clarify, summarize or substitute for text;
- b) to avoid repetition; or
- c) to compare differences or similarities.

#### **4.1.5 Notes**

- 4.1.5.1 Notes are used in association with specifications but they do not form part thereof. A note may introduce a subject, draw attention to a particular point, make a useful reference or even clarify the intent of a Standard or Recommended Practice. However, such a Standard or Recommended Practice shall be self-supporting and the deletion of the associated note shall not alter the obligations or exhortations specified in that Standard or Recommended Practice. Therefore, expressions such as “shall”, “should” or “is desirable” shall not appear in the text of notes.

- 4.1.5.2. Where a note elaborating on or explaining a SARP appears to be needed, the specification in question should be re-examined with a view to redrafting it to make it self-contained.

- 4.1.5.3 Notes applicable to a whole chapter should be placed at the beginning of that chapter as introductory notes; likewise if they apply to a whole section. If they apply to a single specification they should be placed after that specification. Notes are printed in italic type.



- 4.1.5.4 The number of notes shall be kept to a minimum and their text should always be concise.

*Note. – Not to deteriorate the context of a SARP, it should be minimize the reliance on “Notes” to clarify the meaning of a SARP*

#### **4.1.6 Attachments**

- 4.1.6.1 Material supplementary to the SARPs, prepared for guidance in their application, may be placed at the end of the Annex proper under the title “Attachment”. However, such material shall be included in an Annex only when it is not appropriate to include it in manuals or other documents which are issued under the authority of the Secretary General.

- 4.1.6.2 An Attachment has the same status as a Note. It is not subject to precise drafting rules and may take the form most suitable for its purpose. However, the use of the verb “shall” should be avoided except when it occurs in a direct quotation.

- 4.1.6.3 If more than one Attachment is included in an Annex, they should be identified by letters. Each Attachment should be referred to the specification from which it stems.

*Note. – Drafters need to consider the different development process between the text in an Attachment and the text in a Technical Manual. As part of an Annex, the text of an Attachment is to be reviewed by the ANC, to be consulted to States as same as a SARP amendment, while guidance material in a Technical Manual is prepared and issued under the authority of the Secretary General of ICAO.*

#### **4.1.7 Dates of applicability**

- 4.1.7.1 If in the development of SARPS the drafter finds it necessary to recommend applicability dates other than those resulting from normal processing, the drafter should explain the reasons for its recommendation.

*Note. – Practice on determination of effective dates, common applicability dates and exceptional applicability dates of amendments are contained in Appendix C*

#### **4.1.8 Units of measurement**

- 4.1.8.1 In the text of SARPs, units of measurement shall be expressed in International System of Units (SI) as specified in Annex 5. In those cases where Table 3-4 of Annex 5 permits the use of a non-SI alternative unit, both the primary and alternative unit shall be given. The alternative units shall be expressed to the same order of accuracy as the primary unit and

shown in parentheses following the primary unit.

- 4.1.8.2 When including units of measurement in the text of SARPs, the words should be used instead of symbol unless exceptional reason exists or any benefit is expected by doing so.

*Note. – For instance, the unit Degree, Minutes (') and Seconds (") in the text should be spelled out in words, whereas in Tables, Figures, Diagrams and Illustrations, it should be expressed using numerals along with its respective symbols, i.e., 0° to 72°; 30'; 5".*

## **4.2 Procedures for Air Navigation Services (PANS)**

- 4.2.1 The comprise, for the most part, operating practices as well as material:

- a) which may eventually become Standards when it has achieved the maturity and stability necessary for adoption as such;
- b) considered too detailed for SARPs; and
- c) amplifying the basic principles contained in corresponding SARPs to assist in their application.

*Note. – PANS may contain potential Annex material. Some PANS have been found suitable for classification as SARPs, for example, MET PANS disappeared with the adoption of related SARPs (A4-WP/12).*

- 4.2.2 To qualify for PANS status, the procedure shall be agreed as suitable for application on a world-wide basis, although the need to apply it in a given area may be subject to regional agreement.

- 4.2.3 The following rules shall be observed in the drafting of PANS:

- a) The verb “shall” is to be used where uniform application is essential;
- b) The verb “should” is to be used where variation in detail would not be an impediment to successful application.

*Note. - In principle, the duplication of specifications in Annexes and PANS should be avoided. Instead, use is made of cross-referencing. When it is necessary to provide continuity in the presentation in order to facilitate the application of an Annex, some duplication may be acceptable.*

### 4.3 Miscellaneous

#### 4.3.1 Subject words in a sentence

4.3.1.1 In a sentence that imposes a duty, obligation, requirement or prohibition or that grants a permission or privilege, a proper word should be placed as the subject of the sentence on which a duty, obligation, requirement or prohibition is imposed or to which a permission or privilege is granted as appropriate to the context. Moreover, it should be noted that the sentence must clearly indicate to whom it is addressed to as SARPs and PANS have a relatively large audience.

4.3.1.2 In line with the Section 4.19, in a sentence the subject word should be in singular form in principle and also be consistent with the following examples unless exceptional reason exists or any benefit is expected by doing so.

*Note1. - the indefinite article “a/an” is normally used before general, non-specific nouns or to indicate membership in a group; that it should be used in instances when referring to operators in general and not to a specific operator. The article “the” is generally used before singular or plural nouns that were specific or particular.*

*Note2. - Most common examples of inconsistent usage of subject words in a sentence across Annexes are as follow:*

Current Practices	Recommended Form
<ul style="list-style-type: none"> <li>- Contracting States; States; A Contracting State; Each Contracting State; Each State; A State</li> </ul>	<ul style="list-style-type: none"> <li>- The State or Each State</li> </ul>
<ul style="list-style-type: none"> <li>- Flight crew; Flight crew members; The flight crew</li> <li>- A pilot-in-command; The pilot-in-command;</li> <li>- A pilot; All pilot; Pilots; The pilot</li> <li>- An operator; Operators; The operator</li> <li>- All aeroplanes; An aeroplane; Aeroplanes; The aeroplane; Each aeroplane</li> <li>- An aerodrome; All aerodromes; Aerodromes; The aerodrome</li> <li>- An applicant; Applicants; The applicant</li> </ul>	<ul style="list-style-type: none"> <li>- The Flight crew</li> <li>- The pilot-in-command</li> <li>- The pilot-in-command</li> <li>- The pilot</li> <li>- The operator</li> <li>- The aeroplane</li> <li>- The aerodrome</li> <li>- The applicant</li> </ul>

<ul style="list-style-type: none"> <li>- An aircraft; Aircraft; All aircraft; The aircraft; Each aircraft</li> <li>- A flight information region; Flight information regions;</li> <li>- A control area ; Control areas; The control area(s)</li> <li>- An air traffic services unit; Air traffic services units; The air traffic services unit; ATS units</li> <li>- An air traffic control clearance; A clearance; Air traffic control clearances</li> <li>- A controller; Controllers; The controller</li> <li>- Vehicles; a vehicle</li> <li>- Examiners; An examiner</li> </ul>	<ul style="list-style-type: none"> <li>- The aircraft</li> <li>- The flight information regions</li> <li>- The control area</li> <li>- The air traffic service unit</li> <li>- The air traffic control clearance</li> <li>- The controller</li> <li>- The vehicle</li> <li>- The examiner</li> </ul>
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#### **4.3.2 Determining material for inclusion in the body and appendices**

4.3.2.1 In principle, high level regulatory material should be placed in the body of the Annex while detailed technical specifications should be included in the appendices unless exceptional reason exists or any benefit is expected by doing so.

4.3.2.2 In the specific case of Annex 10 and CNS systems, the following guidelines should be observed.

a) the body of the Annex should include material which will be important to States in preparing their basic legislation, for drafting contracts with service providers and for the overall procurement, validation and acceptance of systems and services, including:

- 1) the general definition of terms;
- 2) general end to end system characteristics and performance requirements; and
- 3) a statement on the need for compliance with the detailed specifications in the associated appendix.

b) the appendix should include material related to the design, implementation and operation of specific elements of a system, such as:

- 1) specific definitions of technical terms;
- 2) abbreviations;
- 3) architecture;
- 4) functions;

- 5) processes;
- 6) message formats;
- 7) protocols; and
- 8) technical specifications.

4.3.2.3 All the normal considerations concerning the drafting and presentation of SARPs also apply to Appendices. If more than one Appendix is included in an Annex they should be identified by letters. Each Appendix should be referred to the specification in the body of the Annex from which it stems.

*Note. – Material in appendices has the same status as SARPs in the main body of an Annex. Appendices comprise of material grouped separately for convenience but forming part of SARPs adopted by the Council. With this respect, the detailed guidelines determining material for inclusion in the body and appendices are contained in Appendix D of this document (in accordance with ANC Min. 168-11 and Resolution A35-14).*

### **4.3.3 Cross-references - Material of ICAO origin**

4.3.3.1 The purposes of any citation are to identify briefly provisions or guidance material in an unambiguous manner and to provide finding aids for the reader. In addition, in most cases any description or indication of the subject matter or content of the referenced provision can assist a reader in understanding the workings of the provision at hand and its relationship to the cited provisions or guidance material.

4.3.3.2 However, numerous cross-references can confuse users and make them less attentive to the message of a provision. It is better to organize the material so the drafter can eliminate the need for cross-references. If a cross-reference refers to brief material, then simply repeat that material and remove the cross-reference.

4.3.3.3 If the drafter believes cross-references must be included, consider putting them at the end of the text, like a reference, rather than in the middle. This is less disruptive to the readers and less annoying. It gives readers a chance to absorb your main message before your references elaborate on it. Be sure that the reference the drafter inserts clearly describes the referenced material. That way, readers can decide if they need to read it to know how the provisions affect them.

4.3.3.4 Consideration needs to be given that any other SARPs are not to be diluted by referencing.

4.3.3.5 Consideration needs be given that any material of an Annex (i.e., Definitions; Standards and Recommended Practices; Appendices; Tables; Figures, Diagrams and Illustrations) can be directly referenced within the text of a SARP, whereas guidance material of an Annex (i.e., Foreword; Notes; Introductions; Attachments) are mainly incorporated in the note or other equivalent material within an Annex.

**Example: Normative reference**

(ANNEX1) 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.*

(ANNEX1) 1.2.9.4 *As of 5 March 2008, aeroplane, airship, helicopter and powered-lift pilots, air traffic controllers and aeronautical station operators shall demonstrate the ability to speak and understand the language used for radiotelephony communications to the level specified in the language proficiency requirements in Appendix 1.*

(ANNEX2) 3.1.9 *Remotely piloted aircraft*  
*A remotely piloted aircraft shall be operated in such a manner as to minimize hazards to persons, property or other aircraft and in accordance with the conditions specified in Appendix 4.*

(ANNEX6,Part I) 6.7.1 *An aeroplane intended to be operated at flight altitudes at which the atmospheric pressure is less than 700 hPa in personnel compartments shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the oxygen supplies required in 4.3.9.1.*

**4.3.4 Cross-references – Material of non-ICAO origin**

4.3.4.1 ICAO has a long existing practice of utilizing material from other standards-making organizations. Material developed by other standards-making organizations can be cross-referenced in ICAO documentation. Consideration needs to be given that the cross-reference has taken place in the form of a Note.

4.3.4.2 Drafters need to consider that the material of non-ICAO origin can be cross-referenced *only if* ICAO finds that the reference meets the established ICAO policy.

*Note. - Assembly resolution A38-11 encouraged ICAO to utilize the work of other, recognized standards-making organizations subject to verification and validation process.*

**4.3.5 Determining criteria for applicable aircraft**

4.3.5.1 In a sentence imposing a duty, obligation, requirement or prohibition or that grants a permission or privilege to certain aircraft, the lowest limit is normally set forth in terms of a maximum certificated take-off mass and/or seating capacity. The lowest limit should be

set forth properly and consistently considering the regulatory impact.

*Note. – They are normally expressed as “...of a maximum certificated take-off mass in excess of 5 500 kg or with a passenger seating capacity greater than 19 passengers shall...”.*

## PART 5. PLAIN WRITING

### 5.1 General introduction

5.1.1 The drafter of ICAO provisions needs to be clear and concise in their writing. This is important because Contracting States are expected to align with these provisions. If they can't understand what is written, it could lead to confusion and confusion can lead to inconsistent implementation, inefficiency and risk.

5.1.2 Another consideration is the need to communicate clearly across boundaries of language and culture. ICAO works in six official languages. Beyond these, there are many other languages. The work of interpreters and translators is made much easier when documents are written in plain language. The work of States is also made much easier. Everyone benefits when care is taken to write Standards and Recommended Practices (SARPs) and PANS provisions that can be understood.

5.1.3 Writing in plain language does not mean “dumbing down” the provisions. It means writing in clear, concise and easy to understand language. It is often more difficult to express provisions in this manner because some provisions are necessarily complex. The guidance below is intended to help in this regard.

### 5.2 Write in the Active Voice

5.2.1 Write in the active voice. Active voice makes it clear who is supposed to do what. It eliminates ambiguity about responsibilities. In an active sentence, the person or agency that is acting is the subject of the sentence. By contrast, passive voice obscures who is responsible for what. Interpretation and translation are made more difficult. In a passive sentence, the person or item that is acted upon is the subject of the sentence. Passive sentences often do not identify who is performing the action.

Don't say	But say
The report shall be submitted within ten days.	The operator shall submit the report within ten days.

5.2.2 There may however be instances where active voice may convey the incorrect intent. For example, the active voice of the provision “*The procedure should be approved by the regulator*” would be “*The regulator should approve the procedure*”. Although not intended, the active voice could be read as the regulator being obliged to approve the procedure. So while active voice is preferred, sometimes the use of passive voice may be appropriate.



### 5.3 Verbs

5.3.1 The simplest and strongest form of a verb is present tense. The use of conditional or future tense makes it harder for the reader to understand your meaning.

5.3.2 Avoid hidden verbs. A hidden verb is a verb converted into a noun. Hidden verbs come in two forms. Some have endings such as *-ment*, *-tion*, *-sion*, and *-ance* or link with verbs such as *achieve*, *effect*, *give*, *have*, *make*, *reach*, and *take*.

Don't say	But say
...make an application for...	...apply for...
...carry out a review of...	...review...

5.3.3 “Shall”, “Should” and “May” have specific meanings in the SARPs and therefore should be used deliberately in accordance with circumstances specified in 4.1.1.4 for SARPs and in 4.2.3 for PANS.

5.3.4 Do not use phrases such as “where applicable”, “where appropriate”, “when necessary” or “where adequate” when using “shall” as it creates confusion as to whether or not the standard applies.

Don't say in a Standard	But say
Application of the ADS-C climb and descend procedure requires ongoing monitoring.	The air traffic service unit shall monitor continuously the application of the ADS-C climb and descend procedure.
The pilot shall be informed, when appropriate, what the vector is to accomplish and the limit of the vector shall be specified.	The air traffic service unit should inform the pilot what the vector is to accomplish and the limit of the vector. Add a Note explaining when the above Recommended Practice may not be appropriate.

5.3.5 “May” means something is permitted but not required. If an obligation applies only under specified conditions, the Standard shall contain subsidiary statements specifying precisely those conditions. For subsidiary statements verbs such as “may” and “need not” can be used.

Examples:

[Standard] Each State shall establish, at aerodromes in its territory, such aeronautical meteorological stations as it determines to be necessary. An aeronautical meteorological station may be a separate station or may be combined with a synoptic station.

[Recommendation] *The notification to the aerodrome meteorological office of individual flights should contain the following information except that, in the case of scheduled flights, the requirement for some or all of this information may be waived by agreement between the aerodrome meteorological office and the operator:*

- a) ...
- b) ...

[Standard] The operator shall ensure that pilots-in-command have available on board the aeroplane all the essential information concerning the search and rescue services in the area over which the aeroplane will be flown.

*Note.— This information may be made available to the pilot by means of the operations manual or such other means as is considered appropriate.*

## 5.4 Be Consistent

- 5.4.1 Don't use different words to say the same thing. Avoid variation for the sake of variation. Repeating the precise term might seem boring but readers, interpreters and translators will appreciate the consistency. In legislation drafting, care is often taken to ensure consistency in the use of terms. If different terms are used in Annexes and PANS, States may conclude that ICAO intends for the terms to have different meanings.

## 5.5 Be Positive

- 5.5.1 If the idea can be expressed either positively or negatively, express it positively.

Don't say	But say
A ground system which is not part of the normal control or guidance system	A ground system which is independent of the normal control or guidance system

- 5.5.2 When you write a sentence containing two negatives, they cancel each other out. Avoid such double negatives wherever possible. They can be difficult to understand and to translate.

Don't say	But say
It is not impossible	It is possible

## 5.6 Use Parallel Structure

- 5.6.1 Use consistent grammatical structures so that parallel ideas look parallel.

Don't say	But say
Writing good standards requires you to plan carefully, write several drafts, and revision.	Writing good standards requires you to plan carefully, write several drafts, and revise your work.

## 5.7 Use Short, Simple Words

- 5.7.1 Given a choice between a fancy word and a simple word, choose the simple word. Prefer the short word to the long word.

Don't say	But say
terminate	end
initiate	begin

## 5.8 Write Short Sentences

- 5.8.1 The more complex the sentence, the harder it is to understand and translate. Divide long sentences into short sentences. State only one idea or requirement in each sentence. Remove unnecessary words.
- 5.8.2 If only one or two simple conditions must be met before a requirement applies, state the conditions first and then the requirement. If several complex conditions must be met before a requirement applies, state the requirement first and then state the

conditions. If several conditions must be met before a requirement applies, use a list.

[Examples]

Simple conditions to be met	Standard: When rapidly changing meteorological conditions make it inadvisable to include a weather report in the ATIS, the ATIS message shall indicate that ....
Several complex conditions must be met before a requirement applies	<p>Standard: An upper limit of a control areas shall be established when:</p> <ul style="list-style-type: none"> <li>a) air traffic control service will not be provided above such upper limit; or</li> <li>b) the control area is situated below an upper control area, in which case the upper limit shall coincide with the lower limit of the upper control area.</li> </ul> <p>When established, such upper limit shall coincide with a VFR cruising level of the tables in Appendix 3 to Annex 2.</p>
Use of a list	<p>PANS: Because all navigation facilities and waypoints have accuracy limitations, the geographic point which is identified is not precise, but may be anywhere within an area which surrounds the nominal point. The nominal point can be defined by:</p> <ul style="list-style-type: none"> <li>a) an intersection (see 2.3, “Fix tolerance and fix tolerance area for intersecting fixes”);</li> <li>b) overheading a facility (see 2.5, “Fix tolerance overheading a station”);</li> <li>c) an RNAV waypoint; and</li> <li>d) other kinds of navigation aids (see 2.4, “Fix tolerance for other types of navigation instruments”).</li> </ul>

## 5.9 Write Short Paragraphs

5.9.1 Each paragraph or SARP should address a single topic. Putting each topic in a separate paragraph makes your information easier to digest. If a paragraph is comprised of a

complex process or series of requirements, consider breaking it down into steps.

## **5.10 Brackets**

- 5.10.1 Brackets are used in provisions to indicate acronyms when they first appear, such as Standards and Recommended Practices (SARPs). When developing provisions, limit the use of brackets unless they are needed for mathematical expressions. Provisions that use mathematical expressions will use brackets as they are required in mathematics.

## **5.11 The Forward Slash**

- 5.11.1 The forward slash is used frequently in English but its meaning is not always clear. It is difficult to translate and it can lead to provisions that are not clear. It can mean either and it can mean both. If the forward slash can be avoided, then do so. Avoid the use of the phrase “and/or”

## **5.12 Avoid Noun Clusters**

- 5.12.1 Groups of nouns clustered together are difficult to understand and difficult to translate. They most often appear as a descriptive title.

Don't say	But say
Safety management systems voluntary reporting procedures development.	Development of voluntary reporting procedures in safety management systems.

## **5.13 Numbers and Symbols**

- 5.13.1 Write out numbers from zero to ten. Use Arabic numerals for numbers from 11 onwards. If a section of text contains numbers above and below ten, choose one form of expressing numbers, generally the numerical form. If a sentence begins with a number, write out the number or rewrite the sentence so that the number does not come first. Use a space to separate digits into groups of three.

## **5.14 Use gender-free language**

- 5.14.1 ICAO uses gender-free language. Avoid using “generic” pronouns such as “he”, “she” or “he/she”. Instead, be specific. If you mean pilot, say pilot. If you mean mechanic, say mechanic. One option is to use the plural form:

Don't say	But say
The presenter should submit his biography in advance.	Presenters should submit their biographies in advance.

## 5.15 The use of digits

5.15.1 Digits in ICAO provisions must be unambiguous as to the intended accuracy. This is equally important to those who will apply the requirements and to those who will do the oversight. Make it clear what accuracy is intended. This may sound obvious but consider the following.

If you write 3 % it can be correctly interpreted as anything from 2.5 to 3.4%. The concept of “significant digits” is helpful in understanding accuracy. If you write 3 % you have used one significant digit, which leads to the interpretation mentioned above. If you write 3.0 %, you have used two significant digits and the interpretation is limited to 2.95 – 3.04 %. If you write 3.00%, you have used three significant digits and the accuracy is increased accordingly.

If you write 200 or 5000, this may be considered as only having one significant digit, i.e. it is unclear how exact this number is and what was intended. If in a SARP it is stated “not more than 20%”, this can be perceived by many as not allowing 20.0001% but is that the intention?

5.15.2 How can you make it clear how many significant digits, and thereby what accuracy, you have intended? There are in fact many ways to do this in addition to the use of decimals as given above.

The context may show the number of significant digits, i.e. 185 – 200 will be understood as having three significant digits. The use of tables also gives a clear indication of the intended accuracy. For example, if the first row of a table contains a range like 200 - 209 and the next 210 – 219, it is clear that three significant digits are intended. Another way is to specifically state the tolerance, e.g. 200 m +/- 1% or in absolute terms, e.g. 200 m +/- 2. In engineering documents expressions like  $5,00 \times 10^6$  are often used and this example has three significant digits.

5.15.3 Be clear what accuracy is intended based on your opinion of what accuracy is reasonable for the intended application. Finally, you must make sure that the required accuracy is stated unless the context or other circumstances makes the accuracy obvious.

## 5.16 Working with more than one unit

5.16.1 When expressing digits in more than one unit for the same purpose, Such as metres and feet or km/h and knots, keep these points in mind:

- a) Be as accurate as it is reasonable considering the intended use and the conditions below;
- b) If the conversion between units is to be used in an operational environment you must ensure that the respective units are operationally usable, e.g. feet/metres for visibility requirements or for altitudes/flight levels;
- c) Maintain the accuracy that is intended with the regulation (e.g. +/- 1 metre or +/- 3 ft);
- d) Be consistent within the document and if possible also with other documents

## 5.17 Singular vs. Plural

5.17.1 Use the singular rather than the plural form. The singular includes the plural and is simpler and clearer.

Don't say	But say
Vehicle drivers shall not cross red lights	A vehicle driver shall not cross a red light

5.17.2 Singular words may apply to several States, organizations, operators, service providers, persons or things as well as to one State, organization, operator, service provider, person or thing. It is better form and easier to draft a provision in the singular, unless the plural is exclusively intended or unless it is necessary to make it clear that something applies in the aggregate or to avoid the unintended implication that every person with specified qualifications is entitled to a grant or other benefit.

*Note. – Specific issue on inconsistent usage of subject word in a provision of an Annex is explained in the Section 5.1 of this document.*

## 5.18 Means and Includes

5.18.1 The basic distinction between these two terms is that “means” is exclusive while “include” is not. For example, if a definition says that “the term X means A, B and C” then X means only A, B and C, and nothing else. If the definition says that “the term X

includes A, B and C” then X must include A, B and C but it may also include D or E.

## **5.19 Abbreviations and Acronyms**

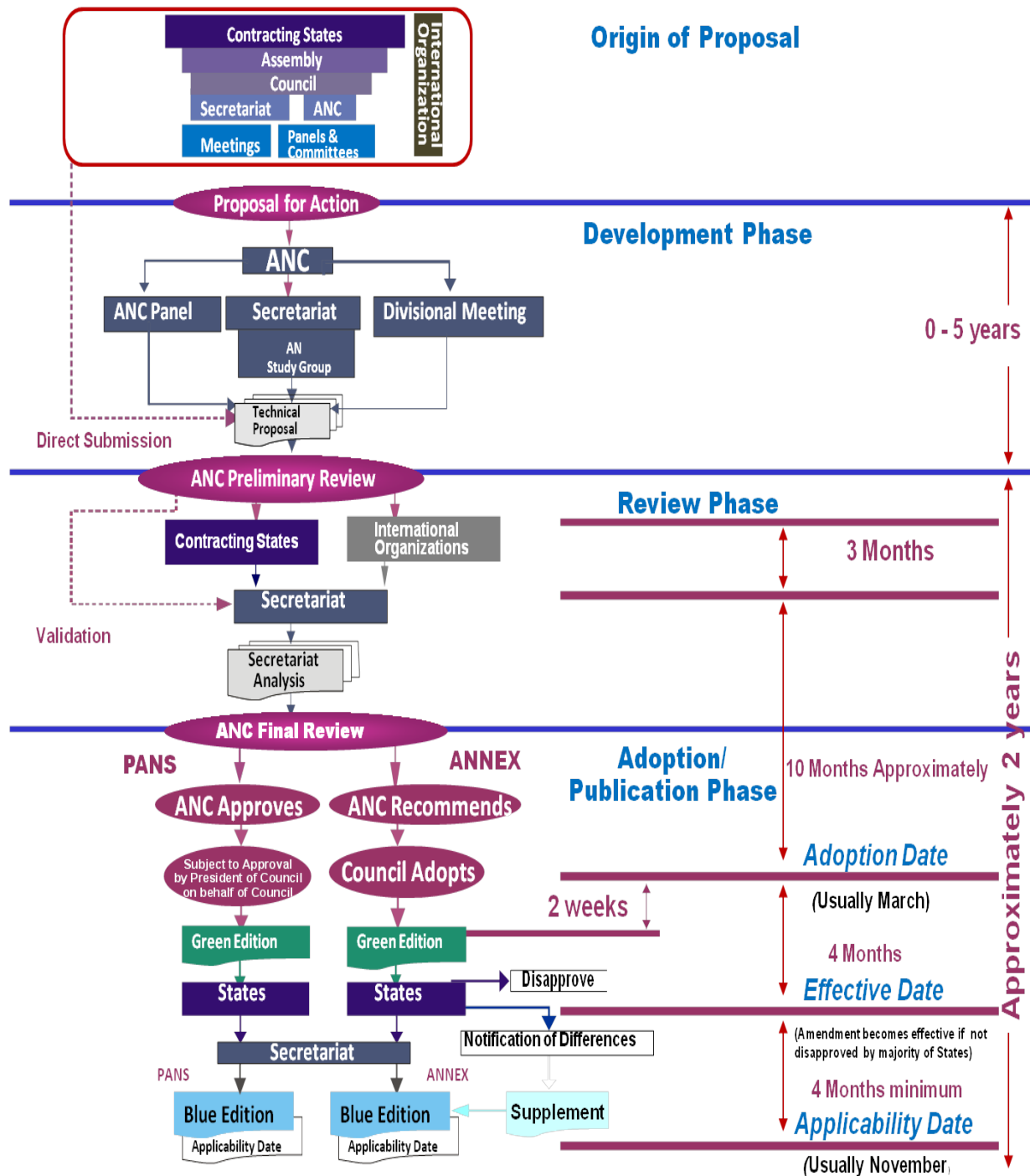
- 5.19.1 The Table of Contents section of most Annexes contain a list of abbreviations and acronyms found in the Annex. If your abbreviation is already in the table of contents, there is no need to define it within the text. Consider adding it to the table of contents if the abbreviation will be used frequently within the document. If it will only be used a few times there is no need to add it to the definitions. In that case always define the abbreviation the first time you use it. For example, “Automated Runway Incursion Warning Systems” (ARIWS) and thereafter use the abbreviation.

## **5.20 Primary intent of a provision**

- 5.20.1 Be clear about the primary intent of a provision. For example, if the intent is to ensure an operator carries out specific checks, it is better to say “The operator shall carry out checks...” rather than “The operator shall establish procedures to carry out checks...” The former focuses on the intent of the provision, while the latter focuses on the need to establish procedures. While the operator does need to establish the necessary procedures in order to carry out the checks, the second formulation detracts from the primary intent of the provision. It should be implicitly understood that procedures will need to be established for the checks to be carried out properly.



## Appendix A – SARPs development process



## Appendix B

### **Assembly Resolution (A38-11): Formulation and implementation of Standards and Recommended Practices (SARPs) and Procedures for Air Navigation Services (PANS) and notification of differences**

*Whereas* Article 37 of the *Convention on International Civil Aviation* requires each Member State to collaborate in securing the highest practicable degree of uniformity in regulations and practices in all matters in which such uniformity will facilitate and improve air navigation;

*Whereas* Article 37 of the Convention requires the Organization to adopt and amend international standards and Recommended Practices and procedures and states the purpose of and the matters to be dealt with in that action, and Articles 38, 54, 57 and 90 contain additional relevant provisions;

*Whereas* in accordance with Article 38 of the Convention any Member State which finds it impractical to comply in all respects with any international standard or procedure or deems it necessary to adopt regulations or practices differing therefrom is obliged to give immediate notification to ICAO;

*Whereas* the Assembly deems it advisable to establish certain policies to be followed in complying with these provisions of the Convention;

*Recognizing* the effective implementation of SARPs and PANS promotes safe, secure and sustainable development of international civil aviation;

*Recognizing* that making differences information easily available to all stakeholders in a timely manner is important to promote safety, regularity and efficiency in international civil aviation;

*Noting* that many Member States experience difficulty in fulfilling their obligations under Articles 37 and 38 of the Convention and keeping pace with frequent amendments to Annexes;

*Recognizing* that up-to-date ICAO technical guidance material provides valuable assistance to Member States in the effective implementation of SARPs, PANS and Regional Plans;

*Recognizing* that substantial resources are required to develop and maintain all ICAO technical guidance material for SARPs and PANS;

*Noting* the increase of the number of notified differences to ICAO; and

*Recognizing* that there is a strong need for all available means to be sought and employed in encouraging and assisting Member States in overcoming their difficulties in implementation of SARPs and PANS;

*The Assembly:*

1. *Calls on* Member States to reaffirm their commitment to abide by the obligations under Articles 37 and 38 of the Convention;
2. *Resolves* that SARPs and PANS shall be amended as necessary to reflect changing requirements and techniques and thus, inter alia, to provide a sound basis for global and regional planning and implementation;

3. *Agrees* that subject to the foregoing clause, a high degree of stability in SARPs shall be maintained to enable the Member States to maintain stability in their national regulations. To this end amendments shall be limited to those significant to safety, regularity and efficiency and editorial amendments shall be made only if essential;
4. *Reiterates* that SARPs and PANS shall be drafted in clear, simple and concise language. SARPs shall consist of broad, mature and stable provisions specifying functional and performance requirements that provide for the requisite levels of safety, regularity and efficiency. Supporting technical specifications, when developed by ICAO, should be translated in all working languages of ICAO in a timely manner and shall be placed in separate documents to the extent possible;
5. *Instructs* the Council to utilize, to the maximum extent appropriate and subject to the adequacy of a verification and validation process, the work of other recognized standards making organizations in the development of SARPs, PANS and ICAO technical guidance material. Material developed by these other standards-making organizations may be deemed appropriate by the Council as meeting ICAO requirements; in this case such material should be referenced in ICAO documentation;
6. *Resolves* that to the extent consistent with the requirements of safety regularity and efficiency, SARPs specifying the provision of facilities and services shall reflect a proper balance between the operational requirements for such facilities and services and the economic implications of providing them;
7. *Instructs* the Council to consult Member States on proposals for the amendment of SARPs and PANS before the Council acts on them, except when the Council may deem urgent action to be necessary. Furthermore, subject to the adequacy of the verification and validation process, technical specifications may be acted upon by the Council without consultation with Member States. Such material shall however be made available to Member States upon request;
8. *Resolves* that the applicability dates of amendments to SARPs and PANS shall be so established as to allow Member States sufficient time for their implementation;
9. *Agrees* that no Annex or PANS document shall be amended more frequently than once per calendar year;
10. *Reminds* Member States of the requirement in Annex 15 to publish any significant differences in their Aeronautical Information Publication (AIP) and to include English text for those parts expressed in plain language;
11. *Encourages* Member States to use the Electronic Filing of Differences (EFOD) System when notifying their differences to ICAO;
12. *Instructs* the Secretary General to continue improving the EFOD system and assist Member States in transitioning from the paper-based processes to the use of the EFOD system;
13. *Directs* the Council to monitor and analyse the differences between the regulations and the practices of Member States and the SARPs and PANS with the aim of encouraging the elimination of those differences that are important for the safety, regularity and efficiency of international air navigation and taking appropriate actions;

14. *Instructs* the Council to explore possibilities to make differences information more easily available to all interested stakeholders and assess appropriate mechanism and form in which this information is made available;
15. *Resolves* that Member States shall be encouraged and assisted in the implementation of SARPs and PANS by all available means and provided as soon as possible with more guidance in respect of the notification and publication of differences;
16. *Calls on* all Member States able to do so to provide requesting States with technical cooperation in the form of financial and technical resources to enable those States to carry out their obligations under Articles 37 and 38 of the Convention;
17. *Instructs* ICAO to establish priorities for the continuing updating of the contents of present ICAO technical guidance material and the development of additional guidance material thus ensuring optimum value for Member States in their planning and implementation of SARPs and PANS;
18. *Resolves* that the associated practices in this Resolution constitute guidance intended to facilitate and ensure implementation of this Resolution; and
19. *Declares* that this resolution supersedes Resolution A37-15, Appendices A, D and E.

#### **Associated practices**

1. The Council should ensure that provisions of SARPs and PANS are completely consistent with each other. Furthermore, the Council should endeavour to improve the processing, presentation and usefulness of ICAO documents containing SARPs, PANS and other related provisions, especially for complex systems and their associated applications. To that end the Council should promote the development and upkeep of broad system-level, functional and performance requirements. The Council should continue seeking the most appropriate means of development, translation, processing and dissemination of technical specifications.
2. Member States should comment fully and in detail on the proposals for amendment of SARPs and PANS or at least should express their agreement or disagreement on their substance. They should be allowed at least three months for this purpose. Furthermore, Member States should receive at least 30 days of notification of the intended approval or adoption of detailed material on which they are not consulted.
3. Member States should be allowed a full three months for notifying disapproval of adopted SARPs amendments; in establishing a date for notifying disapproval the Council should take into account the time needed for transmission of the adopted amendments and for receipt of notifications from States.
4. The Council should ensure that, whenever practicable, the interval between successive common applicability dates of amendments to Annexes and PANS is at least six months.
5. The Council, prior to the adoption and approval of amendments to SARPs and PANS, should take into account feasibility of the implementation of SARPs and PANS by the intended applicability dates.
6. The Council, taking into account the definitions of terms “Standard” and “Recommended Practice”, should ensure that new Annex provisions, uniform application of which is recognized as

necessary, are adopted as Standards, and that those new provisions, uniform application of which is recognized as desirable, are adopted as Recommended Practices.

7. The Council should urge Member States to notify the Organization of any differences that exist between their national regulations and practices and the provisions of SARPs as well as the date or dates by which they will comply with the SARPs. If a Member State finds itself unable to comply with any SARPs, it should inform ICAO of the reason for non-implementation, including any applicable national regulations and practices which are different in character or in principle.

8. Differences from SARPs received should be promptly made available to Member States.

9. In encouraging and assisting Member States in the implementation of SARPs and PANS, the Council should make use of all existing means of ICAO and strengthen partnerships with entities which provide resources and assistance towards development of international civil aviation.

10. Member States should establish internal processes and procedures by which they give effect to the implementation of provisions of SARPs and PANS.

11. ICAO should update and develop guidance material in accordance with the established priorities to adequately cover all technical fields.

*Note. — The other policies and practices governing the development of SARPs and/or guidance material relating each domain of environmental protection, facilitation, or security can be found in diverse Assembly Resolutions respectively. For instance, those related to environmental protection are set out in A38-17/Appendix B, to facilitation in A38-16/Appendix A, and to the aviation security in A38-15/Appendix C.*

## Appendix C – Practice on determination of effective dates, common applicability dates and exceptional applicability dates of amendments

### 1. Determination of effective dates of amendments

- 1.1 In the interests of efficiency and economy, the ANC normally agrees on a common effective date for all amendments to be adopted during a particular Council Session (ANC 102-12). This date is normally four months after the last day of the Council Session when the Council could adopt the last of the amendments scheduled for that Session. In any case, the effective date cannot be earlier than four months after the adoption date of the amendment. This timing is based on existing policy which prescribes that the green edition of an Annex amendment shall be available to States for a full three months before the effective date and on the current arrangements for the reproduction and dispatch of the green edition. The latter calls for the green edition to be available within two weeks after the adoption date and to be dispatched so that it reaches all concerned within two weeks after the date of dispatch.

### 2. Determination of common applicability dates of amendments

- 2.1 The Assembly policy on the subject allows for two common applicability dates for amendments to Annexes and PANS to be established within a year, spaced some six months apart. However, in order to limit the frequency of Annex amendments, the Council agreed that it would establish only one common applicability date for each year and only in very exceptional circumstances would set two common applicability dates.
- 2.2 The determination of the common applicability dates is made following a scrutiny by the ANC of the processing schedules of all amendments concerned. The actual dates are normally chosen from the schedule for the regulation of amendments to aeronautical information (AIRAC - see Annex 15, paragraph 6.1.1 and the associated schedule in the AIS Manual) as the first date which is four months after the effective date of the last amendment intended to be applicable on the common applicability date. In this scrutiny the ANC takes into account the administrative aspects of the processing schedules as reported to it by the Secretary General as well as the technical circumstances associated with the implementation of the respective amendments by States. As a general practice, the AIRAC date in November is often selected as the applicability date.

### 3. Exceptional applicability dates of amendments

- 3.1 The applicability date for an Annex amendment is the common applicability date selected by the Council for the year concerned, generally in the November timeframe. However, should very exceptional circumstances pertain, a different date may be selected. Such a date normally is the first date in the AIRAC schedule following four months after the effective date of the amendment. Furthermore, in special cases, the four-month period between the effective and applicability dates can be extended or shortened as the situation may require.
- 3.2 In all such special cases adequate justification is provided to the ANC which reviews the pertinent circumstances of each amendment before recommending a specific applicability date to the Council. Only very rarely, however, is the period shorter than four months between the effective and applicability dates. With the four-month provision, States receive their full complement of copies of the blue edition only some three months before the applicability date and any curtailment of that period would not provide them adequate time to complete all necessary arrangements to implement the amendment.
- 3.3 An exception is made in the setting of the applicability dates for any amendments to Annex 8 - *Airworthiness of Aircraft* that could affect the design and construction of aircraft. Because of Article 41 of the Convention, these amendments are given an applicability date of three years after the date of adoption.

## Appendix D - Guidelines for the development of SARPs material for complex systems

(Approved by the Air Navigation Commission (171-2))

### 1. Background

- 1.1. The present guidelines are intended to assist the application of the ICAO policy addressing the formulation of SARPs material for complex systems and contained in Appendix A of the consolidated statement of continuing ICAO policies and associated practices related specifically to air navigation.
- 1.2. The intent of the policy is to ensure that ICAO provisions for complex aeronautical systems (such as communication, navigation and surveillance (CNS) systems) can be managed efficiently notwithstanding increasing technical complexity.
- 1.3. To this end, the policy establishes a three-level hierarchical structure of increasingly detailed requirements and specifications for complex systems:

*1st level:* “Core” SARPs in Annexes consisting of broad, mature and stable provisions specifying system-level, functional and performance requirements that provide for the requisite safety levels and interoperability;

*2nd level:* Any technical specifications in appendices to Annexes necessary to achieve requirements of core SARPs; and

*3rd level:* Related detailed technical specifications in separate documents, published by ICAO or other organizations, and referenced in Annexes by means of notes.

### 2. Detailed guidelines

- 2.1. Guidelines for application of the ICAO policy are provided below addressing respectively new SARPs and existing SARPs.

### 3. Guidelines for new SARPs

- 3.1. From the inception of development of ICAO material for a new system, the material should be planned to conform to the three-level structure established by the ICAO policy. The size of the material in the first two levels should be limited to the extent possible, as discussed below.
- 3.2. The material contained in “core” SARPs (first level) should be limited to:
  - a) general definitions of terms;
  - b) general system characteristics and performance requirements; where applicable (Annex 10), high-level radio-frequency characteristics (as required for the purpose of demonstrating conformance with relevant ITU Radio Regulations); and 4-Att 1-2 *ANC Procedural Guidebook*



- c) reference(s) to appendix material (second level) and/or non-SARPs material (third level) as required.
- 3.3 This material is not expected to exceed ten pages per system.
- 3.4 Any additional technical specifications applicable to the system should be contained in the remaining two levels of the structure (appendix to an Annex and other non-Annex material, respectively).
- 3.5 In apportioning the additional specifications between the second and third levels, an effort should be made to limit to the extent possible the size of the material in the second level (appendix), by including in it only those additional provisions that are necessary in practice to achieve interoperability. Such provisions need not include the full amount of technical detail which would be theoretically necessary to ensure the requisite safety levels and interoperability (e.g. definition of all message formats down to the bit level), as long as they identify unequivocally the technology selected and direct users to appropriate technical documents (third level) external to the Annex, by means of notes referencing those documents.
- 3.6 The possibility of dispensing with second level material altogether (by locating in the third level all material that does not fall into the “core” category) should be actively explored, in close coordination with the ICAO bodies that define the applicable operational requirements.
- 3.7 With regard to the identification of appropriate third level material (non-SARPs), two alternatives are available:
  - a) development of additional ICAO documents (other than SARPs), e.g. technical manuals; or
  - b) use of references to external (non-ICAO) material developed by other standards-making organizations.
- 3.8 Selection of the preferred alternative (or of a combination of both) should be conducted on a case-by-case basis at the inception of the development of ICAO SARPs for a new system. The selection should be based on an assessment of the relative advantages and disadvantages of the alternatives. In general, use of references to external material is considered preferable over the development of additional ICAO documents when the following conditions can be met:
  - a) external material is available covering the whole system or individual elements of the system;
  - b) there is international consensus on the external material;
  - c) an adequate validation and verification process has been completed and an appropriate process is in place to ensure that ICAO is made aware of updates to the external material;
  - d) the terminology and content of the applicable SARPs material and those of the



external material are harmonized;

- e) the external material is accessible to the public (e.g. available for sale to the public).  
*Chapter 4, Attachment 1 4-Att 1-3*

- 3.9 If necessary to facilitate the use of external material, consideration should be given to postponing the finalization of ICAO SARPs until the external material is available and stable.
- 3.10 To facilitate the achievement of international consensus on non-ICAO material, the Secretariat should secure full access to the material and reasonable visibility on its development process and endeavour to make the material available to all parties involved in the SARPs development process.
- 3.11 If external material is not available to cover all the elements of a new system, consideration should be given to using the external material to address individual elements of the system (such as airborne elements, radio interface characteristics etc).
- 3.12 If the validation of the external material leads to the identification of content that is inappropriate for reference in association with ICAO SARPs, where practical, consideration should be given to the development of a list of exceptions to the external material, for inclusion in the ICAO material referencing the external material.

#### **4. Guidelines for existing SARPs**

- 4.1 In the case of existing SARPs, developed before the entry into force of the current ICAO policy on formulation of SARPs, and whose structure is not fully aligned with the current policy, a systematic restructuring of the material to match the structure defined in the current policy is in general not recommended. This is because such a restructuring would in principle be inconsistent with the need for a high degree of stability in SARPs (also an element of the ICAO policy), and furthermore would be likely to require substantial effort. Instead, such restructuring should be accomplished gradually by considering specific subjects on a case-by-case basis, if additional benefits can be gained without excessive detriment to stability.
- 4.2 For instance, when developing new SARPs having substantial elements of commonality with existing ones (e.g. new generation technology to complement or replace a previous generation of the same technology), consideration should be given to aligning the structure of the existing SARPs to the new ones to highlight the elements of commonality. Similarly, if the level of detail of existing SARPs for a system or family of systems proves unnecessarily restrictive and technology-specific, thereby preventing the achievement of benefits to safety and efficiency, consideration should be given to replacing the detailed material with broader provisions.

## Appendix E - Words and expressions to avoid

[ PLACE HOLDER ]

