

Update of ICAO SARP Changes Adopted in 2016

The following is a summary of changes to ICAO Standards and Recommended Practices (SARPS) adopted by the ICAO Council in 2016 relevant to Business and General Aviation. After Council adoption, the changes became *effective* July 11, 2016. For the most part, unless otherwise indicated, the changes become *applicable* November 10, 2016. The noteworthy distinction between *effective* and *applicable* is that when the changes become *effective* they are available for States to implement. The date of applicability is the date where it is assumed that no difference will exist between the requirements of the SARP and the State's own practices.

If there is a difference, then the State is obligated to notify ICAO and to publish the difference in the State aeronautical publications. Since many changes can involve legislative changes or extensive infrastructure implementations, timing of the applicability date can be an issue. Most often the applicability date is in November of the same year as adoption/effective dates. Occasionally, certain changes are recognised as needing a deferred date.

It should be noted that the changes to the Annexes for the most part, are not applicable to the operator until actioned in the State legislative framework or otherwise implemented in infrastructure. The main exceptions are standards governing the conduct of flights over the high seas (outside 12NM territorial sea) where State sovereignty no longer governs.

Flight Recorders and CVR [Annex 6 Part II] (Applicable 7 October 2019)

Both Annex 6 Parts I and II were amended concerning protection of flight recorder recordings in normal operations. This is intended to address situations outside normal Aircraft Accident and Incident Investigation-type investigations (Annex 13). The amendment covers the use of cockpit voice recorders (CVRs) and airborne image recorders (AIRs) which should be limited to safety-related purposes with appropriate safeguards, for inspections of flight recorder systems, or when associated recordings or transcripts are sought for criminal proceedings. This is implemented into the Annex as an exception to the protections accorded to CVRs and AIRs in order to allow competent authorities to access and use these types of recordings and their transcripts without restriction in cases where criminal offences are committed and crew members involved may not have consented to such use (e.g. cases of hijacking). Likewise, the use of flight data recorders (FDRs), aircraft data recording systems (ADRS) as well as Class B and C AIR and airborne image recording systems (AIRS) should be limited to airworthiness or maintenance purposes, including flight data analysis programmes, with appropriate protections accorded by Annex 19 — Safety Management. Two paragraphs in Annex 6 Part II are affected:

- Protection of CVR, CARS, Class A AIR and Class A AIRS recordings (para 3.3.2.1)

Other than the investigation of an accident or incident as per Annex 13, use is limited to safety-related purposes with appropriate safeguards, for inspections of flight recorder systems, or when associated recordings or transcripts are sought for criminal proceedings

- Protection of FDR, ADRS as well as Class B and Class C AIR and AIRS transcripts (para 3.3.2.2)

Other than the investigation of an accident or incident as per Annex 13, use is limited to airworthiness or maintenance purposes, including flight data analysis programmes, with appropriate protections accorded by Annex 19.

Cockpit Voice Recorder [Annex 6 Part II]

Annex 6 Part II was amended concerning carriage requirements of flight recorders. The change addresses the extension of CVR recording duration to twenty-five hours which will allow to capture pre-flight and post-flight crew activities even for long-haul flights. Furthermore, the amendment allows for harmonization with FDR duration requirements.

The specific change requires that all aeroplanes of a maximum certificated take-off mass of over 27 000 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2021 shall be equipped with a CVR capable of retaining the information recorded during at least the last twenty-five hours of its operation (new para 3.6.3.2.2)

Required Communications Performance (RCP) [Annex 6 Part II]

The amendment concerning Performance Based Communications and Surveillance (PBCS) is intended to clarify existing provisions concerning required communication performance (RCP) and add a provision for surveillance equipment and performance-based surveillance (PBS). Specifically, the change seeks to ensure that:

- the aircraft communication and surveillance systems meet the RCP and required surveillance performance (RSP) specification(s); and
- the operator participates in monitoring programmes established by the ANSPs (per Annex 11) through which system performance against RCP/RSP specifications continues to be monitored and any deficiencies identified are resolved.

The actual amendment addresses Specific Approvals, operational credit(s) for operations with aeroplanes equipped with automatic landing systems (in addition to HUD, EVS, SVS, CVS), and equipage and operational criteria (State of registry)

This is reflected in a new section 2.5.3 in Annex 6 Part II as follows:

2.5.3.1 An aeroplane shall be provided with surveillance equipment which will enable it to operate in accordance with the requirements of air traffic services.

2.5.3.2 For operations where surveillance equipment is required to meet an RSP specification for performance-based surveillance (PBS), an aeroplane shall, in addition to the requirements specified in 2.5.3.1:

- a) be provided with surveillance equipment which will enable it to operate in accordance with the prescribed RSP specification(s);
- b) have information relevant to the aeroplane RSP specification capabilities listed in the flight manual or other aeroplane documentation approved by the State of Design or State of Registry; and

- c) where the aeroplane is operated in accordance with a MEL, have information relevant to the aeroplane RSP specification capabilities included in the MEL.

Note 1. — Information on surveillance equipment is contained in the Aeronautical Surveillance Manual (Doc 9924).

Note 2. — Information on RSP specifications for performance-based surveillance is contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).

2.5.3.3 The State of the Registry shall establish criteria for operations where an RSP specification for PBS has been prescribed.

2.5.3.4 In establishing criteria for operations where an RSP specification for PBS has been prescribed, the State of Registry shall require that the operator/owner establish:

- a) normal and abnormal procedures, including contingency procedures;
- b) flight crew qualification and proficiency requirements, in accordance with appropriate RSP specifications;
- c) a training programme for relevant personnel consistent with the intended operations; and
- d) appropriate maintenance procedures to ensure continued airworthiness, in accordance with appropriate RSP specifications.

2.5.3.5 The State of Registry shall ensure that, in respect of those aeroplanes mentioned in 2.5.3.2, adequate provisions exist for:

- a) receiving the reports of observed surveillance performance issued by monitoring programmes established in accordance with Annex 11, Chapter 3, 3.3.5.2; and
- b) taking immediate corrective action for individual aircraft, aircraft types or operators, identified in such reports as not complying with the RSP specification

PBN (Annex 6 Part II)

The Annex 6 Part II provisions relating to Performance Based Navigation (PBN) have been revised to align with the current PBN framework and provide for necessary for the simplification of the PBN approval process. The changes will be needed to be implemented by States and include a framework in the form of a template, similar to the commercial air transport operations specifications (OPSPECS) template, that would standardize specific approvals (letters of authorization) for general aviation. The specific approval template would not be exclusively for PBN but would also support other provisions that require a specific approval thereby facilitating harmonization. The change also includes updated guidance material in the attachments and correction of inconsistencies in relation to EVS.

The principle change is an addition to Section 2.5.2 of Annex 6 Part II (Navigation equipment) as repeated below:

2.5.2.2 For operations where a navigation specification for performance-based navigation (PBN) has been prescribed, an aeroplane shall, in addition to the requirements specified in 2.5.2.1:

- a) be provided with navigation equipment which will enable it to operate in accordance with the prescribed navigation specification(s); and
- b) ~~be authorized by the State of Registry for such operations.~~ have information relevant to the aeroplane navigation specification capabilities listed in the flight manual or other Aeroplane documentation approved by the State of the Design or State of Registry; and
- c) where the aeroplane is operated in accordance with a MEL, have information relevant to the aeroplane navigation specification capabilities included in the MEL.

~~Note.— Information on performance-based navigation, and guidance concerning the implementation and operational approval process, are~~ Guidance on aeroplane documentation is contained in the Performance-based Navigation (PBN) Manual (Doc 9613). ~~This document also contains a comprehensive list of references to other documents produced by States and international bodies concerning navigation systems.~~

2.5.2.3 The State of Registry shall establish criteria for operations where a navigation specification for PBN has been prescribed.

2.5.2.4 In establishing criteria for operations where a navigation specification for PBN has been prescribed, the State of Registry shall require that the operator/owner establish:

- a) normal and abnormal procedures including contingency procedures;
- b) flight crew qualification and proficiency requirements in accordance with the appropriate navigation specifications;
- c) training for relevant personnel consistent with the intended operations; and
- d) appropriate maintenance procedures to ensure continued airworthiness in accordance with the appropriate navigation specifications.

Note 1.— Guidance on safety risks and mitigations for PBN operations, in accordance with Annex 19, are contained in the Performance-based Navigation (PBN) Operational Approval Manual (Doc 9997).

Note 2.— Electronic navigation data management is an integral part of normal and abnormal procedures.

2.5.2.5 The State of Registry shall issue a specific approval for operations based on PBN authorization required (AR) navigation specifications.

Note.— Guidance on specific approvals for PBN authorization required (AR) navigation specifications is contained in the Performance-based Navigation (PBN) Operational Approval Manual (Doc 9997)

Additionally, the Annex now has a new appendix (2.4) providing a template for General Aviation Specific Approvals:

SPECIFIC APPROVAL				
ISSUING AUTHORITY and CONTACT DETAILS¹				
Issuing Authority ¹ _____				
Address _____				
Signature: _____		Date ² : _____		
Telephone: _____		Fax: _____		E-mail: _____
OWNER/OPERATOR				
Name ³ : _____		Address: _____		
Telephone: _____		Fax: _____		E-mail: _____
Aircraft model ⁴ and registration marks:				
SPECIFIC APPROVAL	YES	NO	DESCRIPTION ⁵	REMARKS
Low visibility operations				
Approach and landing	<input type="checkbox"/>	<input type="checkbox"/>	CAT ⁶ : _____ RVR: _____ m DH: _____ ft	
Take-off	<input type="checkbox"/>	<input type="checkbox"/>	RVR ⁷ : _____ m	
Operational credit(s)	<input type="checkbox"/>	<input type="checkbox"/>	⁸	
RVSM	<input type="checkbox"/>	<input type="checkbox"/>		
AR navigation specifications for PBN operations	<input type="checkbox"/>	<input type="checkbox"/>	⁹	
Other ¹⁰	<input type="checkbox"/>	<input type="checkbox"/>		

Notes.—

1. Civil aviation authority name and contact details, including the telephone country code and email if available.
2. Issuance date of the specific approval (dd-mm-yyyy) and signature of the authority representative.
3. Owner or operator's name and address.
4. Insert the aeroplane make, model and series, or master series, if a series has been designated. The CAST/ICAO taxonomy is available at: <http://www.intlaviationstandards.org/>.
5. List in this column the most permissive criteria for each approval or the approval type (with appropriate criteria).
6. Insert the applicable precision approach category (CAT II, IIIA, IIIB or IIIC). Insert the minimum RVR in metres and decision height in feet. One line is used per listed approach category.
7. Insert the approved minimum take-off RVR in metres. One line per approval may be used if different approvals are granted.
8. List the airborne capabilities (i.e. automatic landing, HUD, EVS, SVS, CVS) and associated operational credit(s) granted.
9. Performance-based navigation (PBN): one line is used for each PBN AR navigation specification approval (e.g. RNP AR APCH), with appropriate limitations listed in the "Description" column.
10. Other specific approvals or data can be entered here, using one line (or one multi-line block) per approval (e.g. specific approach operations approval, MNPS).

Runway Surface Condition - Global Reporting Format [Annexes 3, 8, 11, 14 (Vol I), and 15] (Applicable 5 November 2020)

A significant amendment made across several Annexes addresses how runway surface conditions are reported and their effect on aircraft performance are considered. The specific change seeks to more closely align a more detailed and harmonised *Global Reporting Format* with the performance information available in the aircraft flight manuals. The changes largely reflect work accomplished by the FAA TALPA-ARC initiative.

This change required coordination across Annexes dealing with Aircraft Certification, Airports, Meteorology, Aeronautical Information Services, and of course Aircraft Operations. The change is implemented as a change in SNOWTAM format as well as requirements for manufactures to provide more detailed performance information relevant to operation on contaminated runways. At the present time, the direction to manufactures pertains to those aeroplanes intended to be operated in accordance with 5.2 of Annex 6, Part I certified after March 2nd, 2019, however the means of reporting and dissemination of information are intended for global application. Because of the complexity of implementation, the applicability date is deferred to November 5, 2020. States auctioning the new requirements should provide for:

- Implementation of an enhanced reporting format for assessing and reporting runway surface conditions, designed to report runway surface conditions in a standardized manner such that flight crew are able to accurately determine aeroplane take-off and landing performance; and
- Recommending reporting when the runway braking action encountered is not as good as reported.

Runway Surface Condition Changes -- Flight operations [Annex 6 Part II] (Applicable 5 November 2020)

SECTION 2 - GENERAL AVIATION OPERATIONS

New section 2.2.4.2.2

2.2.4.2.2 Recommendation.—The pilot-in-command should report runway braking action when the runway braking action encountered is not as good as reported.

Note.— The procedures for making special air-reports regarding runway braking action are contained in the Procedures for Air Navigation Services — Air Traffic Management (PANS-ATM, Doc 4444), Chapter 4, and Appendix 1, Instructions for air-reporting by voice communication.

New section 2.2.4.4

2.2.4.4 Aeroplane operating procedures for landing performance

Recommendation.— *An approach to land should not be continued below 300 m (1 000 ft) above aerodrome elevation unless the pilot-in-command is satisfied that, with the runway surface condition information available, the aeroplane performance information indicates that a safe landing can be made.*

Note 1.— The procedures for using runway surface condition information on board aircraft are contained in the PANS-Aerodromes (Doc 9981) and in the performance section of the aeroplane flight

manual, and for aeroplanes certificated in accordance with Annex 8, Part IIIB, the Aeroplane Performance Manual (Doc 10064).

Note 2. — Guidance on development of aeroplane performance information for aeroplanes certificated in accordance with Annex 8, Part IIIB is contained in the Aeroplane Performance Manual (Doc 10064).

SECTION 3 - LARGE AND TURBOJET AEROPLANES

New section 3.4.4.5

3.4.4.5 Aeroplane operating procedures for landing performance

An approach to land shall not be continued below 300 m (1 000 ft) above aerodrome elevation unless the pilot-in-command is satisfied that, with the runway surface condition information available, the aeroplane performance information indicates that a safe landing can be made.

Note 1. — The procedures for using runway surface condition information on board aircraft are contained in the PANS-Aerodromes (Doc 9981) and in the performance section of the aeroplane flight manual, and for aeroplanes certificated in accordance with Annex 8, Part IIIB, the Aeroplane Performance Manual (Doc 10064).

Note 2. — Guidance on development of aeroplane performance information for aeroplanes certificated in accordance with Annex 8, Part IIIB is contained in the Aeroplane Performance Manual (Doc 10064).

Runway Surface Condition Changes -- Aeroplane Performance Operating Limitations (para 3.5.2.5) [Annex 6 Part II] (Applicable 5 November 2020)

Applicable to aeroplanes certificated in accordance with Parts IIIA and IIIB of Annex 8 (aircraft over 5700 kg)

Factors to be considered to include all factors that significantly affect the performance of the aeroplane:

- Mass
- operating procedures
- the pressure altitude appropriate to the elevation of the aerodrome
- the slope of the runway
- the ambient temperature
- surface condition of runway at the expected time of use

Safety Management (Annex 19)

Amendment 1 to Annex 19 is intended to address the integration of State safety management responsibilities, enhanced safety management system (SMS) provisions, and provisions for the protection of safety data and safety information and its related sources. The State Safety Program (SSP) processes are streamlined by clarifying the role of the State Safety Oversight (SSO) system critical elements (CEs) as

the foundation required for an effective SSP. The revised set of provisions is expected to support States in achieving SSP implementation in a more efficient manner.

To give States time to assess needed changes to SSPs, the applicability date is deferred until 7 November 2019.

In summary, the changes:

- upgrade State safety programme (SSP) provisions integrated with the State safety oversight (SSO) system critical elements (CEs);
- enhance existing safety management system (SMS) provisions;
- extend an SMS to organizations responsible for the type design and/or manufacture of engines and propellers;
- upgrade the provisions for the protection of safety data, safety information and related sources
- Update Appendix 2 - Framework For a Safety Management System (SMS); and
- Update the guidance (principles) pertaining to the protection of safety data, safety information and related sources (new Appendix 3).

An abridged synopsis of amended elements pertinent to Business Aviation Operations follows:

New Definitions [Annex 19]

Hazard. A condition or an object with the potential to cause or contribute to an aircraft incident or accident.

Safety data. A defined set of facts or set of safety values collected from various aviation related sources, which is used to maintain or improve safety.

Note.— Such safety data is collected from proactive or reactive safety-related activities, including but not limited to:

- a) accident or incident investigations;*
- b) safety reporting;*
- c) continuing airworthiness reporting;*
- d) operational performance monitoring;*
- e) inspections, audits, surveys; or*
- f) safety studies and reviews.*

Safety information. Safety data processed, organized or analysed in a given context so as to make it useful for safety management purposes.

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

Safety oversight. A function performed by a State to ensure that individuals and organizations performing an aviation activity comply with safety-related national laws and regulations.

Safety performance target. The State or service provider's planned or intended objective target for a safety performance indicator(s) over a given period that aligns with the safety objectives.

Surveillance. The State activities through which the State proactively verifies through inspections and audits that aviation licence, certificate, authorization or approval holders continue to meet the established requirements and function at the level of competency and safety required by the State.

Safety Management – International General Aviation [Annex 19]

4.2 International general aviation — aeroplanes

Note.— *Guidance on the implementation of an SMS for international general aviation is contained in the Safety Management Manual (SMM) (Doc 9859) and industry codes of practice.*

4.2.1 The SMS of an international general aviation operator, conducting operations of large or turbojet aeroplanes in accordance with Annex 6, Part II, Section 3, shall be commensurate with the size and complexity of the operation and meet the criteria established by the State of Registry. (emphasis added by IBAC)

Note 1.— *Further provisions related to the criteria to be established by the State of Registry can be found in Chapter 3.*

Note 2.— *Guidance concerning the responsibilities of the State of Registry in connection with lease, charter and interchange operations is contained in the Manual of Procedures for Operations Inspection, Certification and Continued Surveillance (Doc 8335). Guidance concerning the transfer of State of Registry responsibilities to the State where the aircraft operator has its principal place of business or, if it has no such place of business, its permanent address in accordance with Article 83 bis is contained in the Manual on the Implementation of Article 83 bis of the Convention on International Civil Aviation (Doc 10059).*

4.2.2 Recommendation.— *The SMS should as a minimum include:*

- a) *a process to identify actual and potential safety hazards and assess the associated risks;*
- b) *a process to develop and implement remedial action necessary to maintain an acceptable level of safety; and*
- c) *provision for continuous monitoring and regular assessment of the appropriateness and effectiveness of safety management activities.*

Safety Management – Data and Information [Annex 19] (New Appendix 3)

- New requirement for States to establish safety data collection and processing systems
- Mandatory safety reporting to include reporting of incidents
- Voluntary safety reporting to capture safety information not addressed by mandatory reporting

- Protection of data and information captured by voluntary reporting (recommended for mandatory)
- Provisions for exchange and sharing

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