

International Standards
and Recommended Practices



Annex 10
to the Convention on
International Civil Aviation

Aeronautical Telecommunications

Volume V
Aeronautical Radio Frequency
Spectrum Utilization

This edition incorporates all amendments adopted by the Council prior to 28 February 2013 and supersedes, on 14 November 2013, all previous editions of Annex 10, Volume V.

For information regarding the applicability of the Standards and Recommended Practices, see Foreword.

Third Edition
July 2013

International Civil Aviation Organization



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Published in separate English, French, Russian and Spanish editions by the
INTERNATIONAL CIVIL AVIATION ORGANIZATION
999 University Street, Montréal, Quebec, Canada H3C 5H7

For ordering information and for a complete listing of sales agents
and booksellers, please go to the ICAO website at www.icao.int

First edition 1996
Second edition 2001
Third edition 2013

Annex 10, Aeronautical Telecommunications
Volume V, Aeronautical Radio Frequency Spectrum Utilization
Order Number: AN10-5
ISBN 978-92-9249-249-6

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AMENDMENTS

Amendments are announced in the supplements to the *Catalogue of ICAO Publications*; the Catalogue and its supplements are available on the ICAO website at www.icao.int. The space below is provided to keep a record of such amendments.

RECORD OF AMENDMENTS AND CORRIGENDA

[illegible][illegible]

* Amendments 78 to 87 did not affect this volume.

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FOREWORD

Historical background

Standards and Recommended Practices for Aeronautical Telecommunications were first adopted by the Council on 30 May 1949 pursuant to the provisions of Article 37 of the Convention on International Civil Aviation (Chicago 1944) and designated as Annex 10 to the Convention. They became effective on 1 March 1950. The Standards and Recommended Practices were based on recommendations of the Communications Division at its Third Session in January 1949.

Up to and including the Seventh Edition, Annex 10 was published in one volume containing four parts together with associated attachments: Part I — Equipment and Systems, Part II — Radio Frequencies, Part III — Procedures, and Part IV — Codes and Abbreviations.

By Amendment 42, Part IV was deleted from the Annex; the codes and abbreviations contained in that part were transferred to a new document, Doc 8400.

As a result of the adoption of Amendment 44 on 31 May 1965, the Seventh Edition of Annex 10 was replaced by two volumes: Volume I (First Edition) containing Part I — Equipment and Systems, and Part II — Radio Frequencies, and Volume II (First Edition) containing Communication Procedures.

As a result of the adoption of Amendment 70 on 20 March 1995, Annex 10 was restructured to include five volumes: Volume I — *Radio Navigation Aids*; Volume II — *Communication Procedures*; Volume III — *Communication Systems*; Volume IV — *Surveillance Radar and Collision Avoidance Systems*; and Volume V — *Aeronautical Radio Frequency Spectrum Utilization*. By Amendment 70, Volumes III and IV were published in 1995 and Volume V was published in 1996 with Amendment 71.

Table A shows the origin of amendments to Annex 10, Volume V subsequent to Amendment 71, together with a summary of the principal subjects involved and the dates on which the Annex and the amendments were adopted by Council, when they became effective and when they became applicable.

Action by Contracting States

Notification of differences. The attention of Contracting States is drawn to the obligation imposed by Article 38 of the Convention by which Contracting States are required to notify the Organization of any differences between their national regulations and practices and the International Standards contained in this Annex and any amendments thereto. Contracting States are invited to extend such notification to any differences from the Recommended Practices contained in this Annex and any amendments thereto, when the notification of such differences is important for the safety of air navigation. Further, Contracting States are invited to keep the Organization currently informed of any differences which may subsequently occur, or of the withdrawal of any differences previously notified. A specific request for notification of differences will be sent to Contracting States immediately after the adoption of each amendment to this Annex.

The attention of States is also drawn to the provisions of Annex 15 related to the publication of differences between their national regulations and practices and the related ICAO Standards and Recommended Practices through the Aeronautical Information Service, in addition to the obligation of States under Article 38 of the Convention.

Promulgation of information. The establishment and withdrawal of and changes to facilities, services and procedures affecting aircraft operations provided in accordance with the Standards, Recommended Practices and Procedures specified in Annex 10 should be notified and take effect in accordance with the provisions of Annex 15.

Use of the text of the Annex in national regulations. The Council, on 13 April 1948, adopted a resolution inviting the attention of Contracting States to the desirability of using in their own national regulations, as far as practicable, the precise language of those ICAO Standards that are of a regulatory character and also of indicating departures from the Standards, including any additional national regulations that were important for the safety or regularity of air navigation. Wherever possible, the provisions of this Annex have been deliberately written in such a way as would facilitate incorporation, without major textual changes, into national legislation.

Status of Annex components

An Annex is made up of the following component parts, not all of which, however, are necessarily found in every Annex; they have the status indicated:

1.— *Material comprising the Annex proper:*

- a) *Standards and Recommended Practices* adopted by the Council under the provisions of the Convention. They are defined as follows:

Standard: Any specification for physical characteristics, configuration, matériel, performance, personnel or procedure, the uniform application of which is recognized as necessary for the safety or regularity of international air 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.

Recommended Practice: Any specification for physical characteristics, configuration, matériel, 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.

- b) *Appendices* comprising material grouped separately for convenience but forming part of the Standards and Recommended Practices adopted by the Council.
- c) *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.
- d) *Tables and Figures* which add to or illustrate a Standard or Recommended Practice and which are referred to therein, form part of the associated Standard or Recommended Practice and have the same status.

2.— *Material approved by the Council for publication in association with the Standards and Recommended Practices:*

- a) *Forewords* comprising historical and explanatory material based on the action of the Council and including an explanation of the obligations of States with regard to the application of the Standards and Recommended Practices ensuing from the Convention and the Resolution of Adoption;
- b) *Introductions* comprising 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;

- c) *Notes* 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;
- d) *Attachments* comprising material supplementary to the Standards and Recommended Practices, or included as a guide to their application.

Disclaimer regarding patents

Attention is drawn to the possibility that certain elements of Standards and Recommended Practices in this Annex may be the subject of patents or other intellectual property rights. ICAO shall not be responsible or liable for not identifying any or all such rights. ICAO takes no position regarding the existence, validity, scope or applicability of any claimed patents or other intellectual property rights, and accepts no responsibility or liability therefore or relating thereto.

Selection of language

This Annex has been adopted in four languages — English, French, Russian and Spanish. Each Contracting State is requested to select one of those texts for the purpose of national implementation and for other effects provided for in the Convention, either through direct use or through translation into its own national language, and to notify the Organization accordingly.

Editorial practices

The following practice has been adhered to in order to indicate at a glance the status of each statement: *Standards* have been printed in light face roman; *Recommended Practices* have been printed in light face italics, the status being indicated by the prefix **Recommendation**; *Notes* have been printed in light face italics, the status being indicated by the prefix *Note*.

The following editorial practice has been followed in the writing of specifications: for Standards the operative verb “shall” is used, and for Recommended Practices the operative verb “should” is used.

The units of measurement used in this document are in accordance with the International System of Units (SI) as specified in Annex 5 to the Convention on International Civil Aviation. Where Annex 5 permits the use of non-SI alternative units these are shown in parentheses following the basic units. Where two sets of units are quoted it must not be assumed that the pairs of values are equal and interchangeable. It may, however, be inferred that an equivalent level of safety is achieved when either set of units is used exclusively.

Any reference to a portion of this document, which is identified by a number and/or title, includes all subdivisions of that portion.

Table A. Amendments to Annex 10, Volume V

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject(s)</i>	<i>Adopted Effective Applicable</i>
71	Air Navigation Commission; SP COM/OPS/95 Divisional Meeting; third meeting of the Aeronautical Mobile Communications Panel (AMCP)	Introduction of new Volume V consisting of existing Annex material and addition of material relating to the introduction of 8.33 kHz channel spacing and changes to material related to the protection of air-ground communications in the VHF band.	12 March 1996 15 July 1996 7 November 1996
72	Air Navigation Commission; fourth meeting of the Aeronautical Mobile Communications Panel (AMCP)	Definition for VHF digital link; amendment to Table 4-1 (<i>bis</i>).	12 March 1997 21 July 1997 6 November 1997
73	—	No change.	—
74	Air Navigation Commission	Introduction of: a) an inter-pilot air-to-air channel; and b) changes to specifications on emergency locator transmitters.	18 March 1999 19 July 1999 4 November 1999
75	Air Navigation Commission; sixth meeting of the Aeronautical Mobile Communications Panel (AMCP)	Clarification of guidance material on VDL interference immunity performance.	13 March 2000 17 July 2000 2 November 2000
76 (2nd Edition)	Seventh meeting of the Aeronautical Mobile Communications Panel (AMCP)	Integrated voice and data link system (VDL Mode 3); data link satisfying surveillance applications (VDL Mode 4); update of references to the ITU Radio Regulations.	12 March 2001 16 July 2001 1 November 2001
77	Secretariat	Consequential changes resulting from GNSS SARPs which provide for GBAS data broadcast in the band 108 – 117.975 MHz.	27 February 2002 15 July 2002 28 November 2002
78	—	No change.	—
79	—	No change.	—
80	—	No change.	—
81	—	No change.	—
82	—	No change.	—
83	—	No change.	—
84	—	No change.	—

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject(s)</i>	<i>Adopted Effective Applicable</i>
85	—	No change.	—
86	—	No change.	—
87	—	No change.	—
88-A (3rd Edition)	Aeronautical Communications Panel (ACP)	a) Alignment of SARPs with prior updates to the ITU Radio Regulations and Annex 10, Volume III; b) Revision of VHF frequency assignment planning provisions.	27 February 2013 15 July 2013 14 November 2013
88-B	—	No change.	—
89	—	No change.	—