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航空组织

Tel.: +1 514-954-8219 ext. 6710

Ref.: AN 7/63.1.1-17/23

6 March 2017

Subject: Proposals for the amendment of Annex 10, Volume II relating to pronunciation of numbers and PANS-ATM (Doc 4444) relating to remote ATS and ATM procedures

Action required: Comments to reach Montréal by 6 June 2017

Sir/Madam,

1. I have the honour to inform you that the Air Navigation Commission, at the fourth meeting of its 204th Session held on 26 January 2017, considered proposals developed by the fourth meeting of the Air Traffic Management Operations Panel (ATMOPSP/4) to amend Annex 10 — *Aeronautical Telecommunications, Volume II — Communication Procedures including those with PANS status and Procedures for Air Navigation Services — Air Traffic Management (PANS-ATM, Doc 4444)*. The Commission authorized their transmission to Member States and appropriate international organizations for comments.

2. The background of the aforementioned proposals is explained in Attachment A. The proposals for amendment to Annex 10, Volume II and PANS-ATM are contained in Attachments B and C, respectively. A rationale box providing more information has been included immediately following each proposal.

3. May I request that any comments you wish to make on the amendment proposals be dispatched to reach me not later than 6 June 2017. To facilitate the processing of replies with substantive comments, I invite you to submit an electronic version in Word format to icaohq@icao.int. The Air Navigation Commission has asked me to specifically indicate that comments received after the due date may not be considered by the Commission and the Council. In this connection, should you anticipate a delay in the receipt of your reply, please let me know in advance of the due date.

4. In addition, the proposed amendment to Annex 10, Volume II and PANS-ATM is envisaged for applicability on 8 November 2018. Any comments you may have thereon would be appreciated.

5. The subsequent work of the Air Navigation Commission and the Council would be greatly facilitated by specific statements on the acceptability or otherwise of the proposals.

6. Please note that for the review of your comments by the Air Navigation Commission and the Council, replies are normally classified as “agreement with or without comments”, “disagreement with or without comments” or “no indication of position”. If in your reply the expressions “no objections” or “no comments” are used, they will be taken to mean “agreement without comment” and “no indication of position”, respectively. In order to facilitate proper classification of your response, a form has been included in Attachment D which may be completed and returned together with your comments, if any, on the technical content of the proposals in Attachments B and C. Should you have comments on the wording of the amendment proposals in one of the languages other than English, you are invited to provide these in Attachment E. This will facilitate coordination with ICAO Languages and Publications.

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



Fang Liu
Secretary General

Enclosures:

- A — Background information
- B — Proposed amendment to Annex 10
- C — Proposed amendment to PANS-ATM
- D — Response form
- E — Response form for comments on wording

BACKGROUND INFORMATION

**1. PRONUNCIATION OF NUMBERS IN ANNEX 10,
VOLUME II (ATTACHMENT B)**

The proposal maintains and builds upon the current obligation to pronounce digits individually, as a general rule. The initial Standards for the use of “whole hundreds” were commenced in 1987 (Amendment 67) and further refined in the years up to 1995 (Amendment 70). These were limited to altitude, cloud height, visibility, and runway visual range. The proposed amendment is a small extension of the usage of “whole hundreds” and “whole thousands”, based on recent experience gained in some regions.

**2. REMOTE ATS AND ATM PROCEDURES IN PANS-ATM
(ATTACHMENT C)**

2.1 Attachment C (Initial proposals 5 to 8) aims to facilitate the use of envisaged technology in the provision of remote aerodrome control service. The proposals provide a definition of a visual surveillance system to support its use in the provision of aerodrome control service. Procedures are incorporated that specify the capability of the newly defined visual surveillance system to achieve visual observation.

2.2 Other proposals build on recommendations from, inter alia, the Wake Turbulence Study Group (WTSG) and the ICAO Runway Safety Programme.

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ATTACHMENT B to State letter AN 7/63.1.1-17/23

PROPOSED AMENDMENT TO ANNEX 10

AERONAUTICAL TELECOMMUNICATIONS

VOLUME II

(COMMUNICATION PROCEDURES INCLUDING THOSE WITH PANS STATUS)

NOTES ON THE PRESENTATION OF THE PROPOSED AMENDMENT

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

~~Text to be deleted is shown with a line through it.~~

Text to be deleted

New text to be inserted is highlighted with grey shading.

New text to be inserted

~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading.

New text to replace existing text

**TEXT OF PROPOSED AMENDMENT TO THE
INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES
AERONAUTICAL TELECOMMUNICATIONS
ANNEX 10
TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION
VOLUME II
(COMMUNICATION PROCEDURES INCLUDING THOSE WITH PANS STATUS)**

INITIAL PROPOSAL 1

...

**CHAPTER 5. AERONAUTICAL MOBILE SERVICE –
VOICE COMMUNICATIONS**

...

5.2 RADIOTELEPHONY PROCEDURES

...

5.2.1 General

...

5.2.1.4 TRANSMISSION OF NUMBERS IN RADIOTELEPHONY

5.2.1.4.1 TRANSMISSION OF NUMBERS

5.2.1.4.1.1 All numbers, except as prescribed in 5.2.1.4.1.2 to 5.2.1.4.1.6, shall be transmitted by pronouncing each digit separately.

Note.— The following examples illustrate the application of this procedure (see 5.2.1.4.3.1 for pronunciation).

<i>aircraft call signs</i>	<i>transmitted as</i>
CCA 238	Air China two three eight
OAL 242	Olympic two four two
<i>flight levels</i>	<i>transmitted as</i>
FL 180	flight level one eight zero
FL 200	flight level two zero zero
<i>headings</i>	<i>transmitted as</i>
100 degrees	heading one zero zero
080 degrees	heading zero eight zero
<i>wind direction and speed</i>	<i>transmitted as</i>
200 degrees 70 knots	wind two zero zero degrees seven zero knots
160 degrees 18 knots gusting 30 knots	wind one six zero degrees one eight knots gusting three zero knots
<i>transponder codes</i>	<i>transmitted as</i>
2 400	squawk two four zero zero
4 203	squawk four two zero three
<i>runway</i>	<i>transmitted as</i>
27	runway two seven
30	runway three zero
<i>altimeter setting</i>	<i>transmitted as</i>
1 010	QNH one zero one zero
1 000	QNH one zero zero zero

5.2.1.4.1.2 Flight levels shall be transmitted by pronouncing each digit separately except for the case of flight levels in whole hundreds, which shall be transmitted by pronouncing the digit of the whole hundred followed by the word HUNDRED.

Note.— The following examples illustrate the application of this procedure (see 5.2.1.4.3.1 for pronunciation).

<i>flight levels</i>	<i>transmitted as</i>
FL 180	flight level one eight zero
FL 200	flight level two hundred

5.2.1.4.1.3 The altimeter setting shall be transmitted by pronouncing each digit separately except for the case of a setting of 1 000 hPa which shall be transmitted as ONE THOUSAND.

Note.— The following examples illustrate the application of this procedure (see 5.2.1.4.3.1 for pronunciation).

<i>altimeter setting</i>	<i>transmitted as</i>
1009	QNH one zero zero nine
1000	QNH one thousand
993	QNH nine nine three

5.2.1.4.1.4 All numbers used in the transmission of transponder codes shall be transmitted by pronouncing each digit separately except that, when the transponder codes contain whole thousands only, the information shall be transmitted by pronouncing the digit in the number of thousands followed by the word THOUSAND.

Note.— The following examples illustrate the application of this procedure (see 5.2.1.4.3.1 for pronunciation).

<i>transponder codes</i>	<i>transmitted as</i>
2400	squawk two four zero zero
1000	squawk one thousand
2000	squawk two thousand

5.2.1.4.1.25 All numbers used in the transmission of altitude, cloud height, visibility and runway visual range (RVR) information, which contain whole hundreds and whole thousands, shall be transmitted by pronouncing each digit in the number of hundreds or thousands followed by the word HUNDRED or THOUSAND as appropriate. Combinations of thousands and whole hundreds shall be transmitted by pronouncing each digit in the number of thousands followed by the word THOUSAND followed by the number of hundreds followed by the word HUNDRED.

Note.— The following examples illustrate the application of this procedure (see 5.2.1.4.3.1 for pronunciation).

<i>altitude</i>	<i>transmitted as</i>
800	eight hundred
3 400	three thousand four hundred
12 000	one two thousand
<i>cloud height</i>	<i>transmitted as</i>
2 200	two thousand two hundred
4 300	four thousand three hundred
<i>visibility</i>	<i>transmitted as</i>
1 000	visibility one thousand
700	visibility seven hundred
<i>runway visual range</i>	<i>transmitted as</i>
600	RVR six hundred
1 700	RVR one thousand seven hundred

5.2.1.4.1.6 When providing information regarding relative bearing to an object or to conflicting traffic in terms of the 12-hour clock, the information shall be given pronouncing the double digits as TEN, ELEVEN, or TWELVE [O’CLOCK].

5.2.1.4.1.37 Numbers containing a decimal point shall be transmitted as prescribed in 5.2.1.4.1.1 with the decimal point in appropriate sequence being indicated by the word DECIMAL.

Note 1.— The following examples illustrate the application of this procedure:

<i>Number</i>	<i>Transmitted as</i>
100.3	ONE ZERO ZERO DECIMAL THREE
38 143.9	THREE EIGHT ONE FOUR THREE DECIMAL NINE

Editorial Note.— Paragraph 5.2.1.4.1.4 should be renumbered to 5.2.1.4.1.8

...

Origin	Rationale
ATMOPSP/4	<p>In order to avoid the repetition of zeros in a specific set of circumstances, the proposal allows the use of whole hundreds and whole thousands for flight levels, altimeter settings and transponder codes. The section is reorganized to present those instances in a logical sequence, articulating them with specific examples.</p> <p>Finally, a Standard is introduced to ensure that relative bearings using the 12-hour clock message are expressed in a normative manner.</p>

ATTACHMENT C to State letter AN 7/63.1.1-17/23

PROPOSED AMENDMENT TO PANS-ATM (DOC 4444)

NOTES ON THE PRESENTATION OF THE AMENDMENT

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

~~Text to be deleted is shown with a line through it.~~

Text to be deleted

New text to be inserted is highlighted with grey shading.

New text to be inserted

~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading.

New text to replace existing text

**TEXT OF PROPOSED AMENDMENT TO
PROCEDURES FOR
AIR NAVIGATION SERVICES
AIR TRAFFIC MANAGEMENT**

INITIAL PROPOSAL 1

Chapter 4

GENERAL PROVISIONS FOR AIR TRAFFIC SERVICES

...

4.9 WAKE TURBULENCE CATEGORIES

...

4.9.1 Wake turbulence categories of aircraft

...

Note 1.— Helicopters produce vortices when in flight and there is some evidence that, per kilogram of gross mass, their vortices are more intense than those of fixed-wing aircraft. When hovering in ground effect or air taxiing, helicopters generate downwash producing high velocity outwash vortices to a distance approximately three times the diameter of the rotor.

...

Origin	Rationale
ATMOPSP/WTSG	The addition to the note provides complementary information on the effect of vortices produced by helicopters when those are hovering or air taxiing. The three diameter distance underscores the information applied in a significant number of States worldwide and is considered by the WTSG to be relevant to operations.

INITIAL PROPOSAL 2

Chapter 7

PROCEDURES FOR AERODROME CONTROL SERVICE

...

7.6 CONTROL OF AERODROME TRAFFIC

...

7.6.3 Traffic on the manoeuvring area

7.6.3.1 CONTROL OF TAXIING AIRCRAFT

...

7.6.3.1.3.2 Aircraft shall not be permitted to line up and hold on the approach end of a runway-in-use whenever another aircraft is effecting a landing, until the landing aircraft has passed the point of intended holding.

Note.—See Figure 7-2

...

~~Figure 7-2. Method of holding aircraft (see 7.6.3.1.3.2)~~

...

Origin	Rationale
ATMOPSP/4	Figure 7-2 is not consistent with Annex 14, which references distance from the runway centreline. The values mentioned in Figure 7-2 have also not been updated. For consistency, it is recommended that the note be deleted.

INITIAL PROPOSAL 3

Chapter 8

ATS SURVEILLANCE SERVICES

...

8.6 GENERAL PROCEDURES

...

8.6.5 Vectoring

8.6.5.1 Vectoring shall be achieved by issuing to the pilot specific headings which will enable the aircraft to maintain the desired track. When vectoring an aircraft, a controller shall comply with the following:

...

- b) when an aircraft is given its initial vector diverting it from a previously assigned route, the pilot ~~shall~~ should be informed what the vector is to accomplish, and the limit of the vector ~~shall~~ should be specified when the assigned heading is such that a loss of communications may result in a safety risk (e.g. to ... position, for ... approach);

Note.— Annex 19 — Safety Management defines a safety risk as the predicted probability and severity of the consequences or outcomes of a hazard.

...

Origin	Rationale
ATMOPSP/4	<p>This amendment allows for flexibility in the specification of the limit of a vector. The proposal will ensure that due consideration is given to specifying the limit of a vector only when it is necessary. This will strengthen the requirement in locations where it needs to be applied and alleviate it in locations where its application is not warranted.</p> <p>In a number of States, including those belonging to European Air Navigation Planning Group (EANPG), controllers are not obligated to systematically specify the limit of a vector but, rather, to focus on the purpose for the vector.</p>

INITIAL PROPOSAL 4

Chapter 12

PHRASEOLOGIES

12.1 COMMUNICATIONS PROCEDURES

...

12.2 GENERAL

...

12.2.6 Phraseologies for the movement of vehicles, ~~other than tow tractors~~, on the manoeuvring area shall be the same as those used for the movement of aircraft, with the exception of taxi instructions, in which case the word “PROCEED” shall be substituted for the word “TAXI” when communicating with vehicles.

...

Origin	Rationale
ATMOPSP/4	The ICAO Runway Safety Programme has identified a number of instances where phraseology in the PANS-ATM should be improved, including the differentiation of phraseology between tow-tractors and other vehicles. Paragraph 12.3.4.5 contains specific phrases to initiate towing operations; however, in all other instances and for all operational purposes, a tow-tractor is simply another vehicle operating on the manoeuvring area.

Note.— Proposals five to eight relate to remote air traffic services (ATS) operations

INITIAL PROPOSAL 5

Chapter 1

DEFINITIONS

...

Visual surveillance system. An electro-optical system providing an electronic visual presentation of traffic and any other information necessary to maintain situational awareness at an aerodrome and its vicinity.

...

Origin	Rationale
ATMOPSP/4	The provision of remote aerodrome control service relies on the use of a dedicated system. Such a system needs a definition, as associated procedures are envisaged to frame the provision of remote services. The definition covers the complete system and the full range of existing technologies to date.

INITIAL PROPOSAL 6

Chapter 7

PROCEDURES FOR AERODROME CONTROL SERVICE

...

7.1 FUNCTIONS OF AERODROME CONTROL TOWERS

7.1.1 General

...

7.1.1.2 Aerodrome controllers shall maintain a continuous watch on all flight operations on and in the vicinity of an aerodrome as well as vehicles and personnel on the manoeuvring area. Watch shall be maintained by visual observation, augmented in low visibility conditions when available by an ATS surveillance system when available. Traffic shall be controlled in accordance with the procedures set forth

herein and all applicable traffic rules specified by the appropriate ATS authority. If there are other aerodromes within a control zone, traffic at all aerodromes within such a zone shall be coordinated so that traffic circuits do not conflict.

Note.— Provisions for the use of an ATS surveillance system in the aerodrome control service are contained in Chapter 8, Section 8.10.

7.1.1.2.1 Visual observation shall be achieved through direct out-of-the-window observation, or through indirect observation utilizing a visual surveillance system which is specifically approved for the purpose by the appropriate ATS authority.

Note.— Guidance material on the implementation of the remote tower concept for single mode of operation can be found in the Annex to European Aviation Safety Agency (EASA) Executive Director Decision 2015/014/R (3 July 2015).

...

Origin	Rationale
ATMOPSP/4	Remotely operated towers would offer a cost effective alternative to traditional solutions and would provide increased flexibility as well as a the possibility to extend opening hours, sufficient or increased capacity and safety through the use of digital enhancements in low visibility. It gives the air navigation service provider (ANSP) the flexibility of selecting the locations of the facility providing aerodrome control service. What was before constrained to be installed in a physical tower that needed to have clear line-of-sight to the runway and manoeuvring area, can now be replaced by a remote facility situated anywhere. Its application has been to control smaller airports from one central location to gain operational synergies and also to provide a contingency solution for bigger-sized airports.

INITIAL PROPOSAL 7

Insert new text as follows:

7.12 USE OF A VISUAL SURVEILLANCE SYSTEM IN AERODROME CONTROL SERVICE

7.12.1 Capabilities

7.12.1.1 Visual surveillance systems used in the provision of remote aerodrome control services shall have an appropriate level of reliability, availability and integrity. The possibility of system failures or significant system degradations which may cause complete or partial interruptions of service shall be very remote. Backup facilities or alternative operational procedures shall be provided.

Note.— A visual surveillance system will normally consist of a number of integrated elements, including sensor(s), data transmission links, data processing systems and situation displays.

7.12.1.2 Visual surveillance systems should have the capability to receive, process and display, in an integrated manner, data from all connected resources.

7.12.2 Functions

7.12.2.1 When approved by and subject to conditions prescribed by the appropriate ATS authority, visual surveillance systems may be used in the provision of aerodrome control service to perform the functions listed in 7.1.

7.12.2.2 The level of service to be provided shall be commensurate with the technical capabilities of the system.

End of new text.

Editorial Note.— Renumber the following sections accordingly.

7.123 PROCEDURES FOR LOW VISIBILITY OPERATIONS

...

Origin	Rationale
ATMOPSP/4	<p>The structure of this new section is modelled after Section 8.1 of the PANS-ATM relating to ATS surveillance systems. It articulates the capabilities of the system, defining the qualities the system should have (reliability, resilience to failure), and its functions, establishing a direct link between the capabilities of the system and the level of service provided.</p> <p>The requirements are expressed using a performance-based approach. Prescriptive requirements would be inadequate to frame the capabilities of an emerging technology relying on systems that are constantly being improved and are used in a variety of ways, accounting for local factors.</p>

INITIAL PROPOSAL 8

Chapter 11

AIR TRAFFIC SERVICES MESSAGES

...

11.4 MESSAGE TYPES AND THEIR APPLICATION

...

11.4.2 Movement and control messages

...

11.4.2.6 CONTROL MESSAGES

...

11.4.2.6.3 FLOW CONTROL MESSAGES

Note 1.— Provisions governing the control of air traffic flow are set forth in Annex 11, 3.7.5 and in Chapter 3, 3.2.5.2 of this document. Attention is drawn, however, to the guidance material contained in the ~~Air Traffic Services Planning Manual (Doc 9426) regarding flow control.~~ Manual on Collaborative Air Traffic Flow Management (Doc 9971).

...

Origin	Rationale
ATMOPSP/4	The <i>Manual on Collaborative Air Traffic Flow Management</i> (Doc 9971) is now the appropriate reference for ATFM guidance.

ATTACHMENT D to State letter AN 7/63.1.1-17/23

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

To: The Secretary General
 International Civil Aviation Organization
 999 Robert-Bourassa Boulevard
 Montréal, Quebec
 Canada, H3C 5H7

(State) _____

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

	<i>Agreement without comments</i>	<i>Agreement with comments*</i>	<i>Disagreement without comments</i>	<i>Disagreement with comments</i>	<i>No position</i>
Amendment to Annex 10 — <i>Aeronautical Telecommunications, Volume II — Communication Procedures including those with PANS status</i> (Attachment B refers)					
Amendment to the <i>Procedures for Air Navigation Services — Air Traffic Management</i> (PANS-ATM, Doc 4444) (Attachment C refers)					

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

Signature: _____ Date: _____

ATTACHMENT E to State letter AN 7/63.1.1-17/23

**RESPONSE FORM FOR COMMENTS ON THE WORDING OF THE
AMENDMENT PROPOSALS IN ONE OF THE LANGUAGES
OTHER THAN ENGLISH**

(State) _____

1. Do you have comments on the wording of the amendment proposals in one of the languages other than English?

Yes No

2. If yes, please indicate your comments in the space provided below (*provide additional sheets if required*):

	<i>Reference/ Paragraph No.</i>	<i>Comments</i>
Amendment to Annex 10 — <i>Aeronautical Telecommunications, Volume II — Communication Procedures including those with PANS status</i> (Attachment B refers)		
Amendment to the <i>Procedures for Air Navigation Services — Air Traffic Management</i> (PANS-ATM, Doc 4444) (Attachment C refers)		

— END —