



Republic of the Philippines
CIVIL AVIATION AUTHORITY OF THE PHILIPPINES

MEMORANDUM CIRCULAR NO.: 28-2020

TO : ALL CONCERNED

FROM : DIRECTOR GENERAL

SUBJECT : AMENDMENT TO PHILIPPINE CIVIL AVIATION REGULATIONS - AIR NAVIGATION SERVICES (CAR-ANS) PART 15 INCORPORATING AMENDMENT 41 TO ICAO ANNEX 15 AND OTHER SUPPLEMENTARY AMENDMENTS

REFERENCE:

1. Philippine Civil Aviation Regulations- Air Navigation Services Part 15, Issue 4 Amendment No. 5
2. ICAO Annex 15; Amendment 41
3. CAAP Regulations Amendment Procedures
4. Board Resolution No. 2012-054 dated 28 September 2012

Pursuant to the powers vested in me under the Republic Act 9497, otherwise known as the Civil Aviation Authority Act of 2008 and in accordance with the Board Resolution No.: 2012-054 dated 28 September 2012, I hereby approve the incorporation of ICAO Annex 15 Amendment No. 41 and other supplementary amendments to the Philippine Civil Aviation Regulations – Air Navigation Services (CAR-ANS) Part 15.

ORIGINAL REGULATION SUBJECT FOR REVIEW AND REVISION:

CAR-ANS PART 15 Governing AERONAUTICAL INFORMATION SERVICES

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FOREWORD

This Civil Aviation Regulation was formulated and issued by the Civil Aviation Authority of the Philippines (CAAP), prescribing ~~guidelines and procedures~~ rules and regulations in the handling of aeronautical information in order to ensure the flow of such information/data necessary for the safety, regularity and efficiency of international air navigation.

Guidance material on the organization and operation of aeronautical information services is contained in the Aeronautical Information Services Manual (ICAO Doc. 8126).

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I. PURPOSE

This Civil Aviation Regulation provides the ~~procedures for~~ rules and regulations in governing the provision of aeronautical information services provided by the Republic of in the Philippines.

II. AUTHORITY

The ~~procedures~~ regulations contained herein are issued by authority of the Director General of the Civil Aviation Authority of the Philippines and will be complied with by all concerned.

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III. APPLICABILITY

The ~~procedures~~ regulations embodied herein shall apply to all those involved in flight operations, including flight crews, flight planning and flight simulators, and the air traffic services units responsible for flight information service and the services responsible for pre-flight information.

IV. REPEALING PROVISIONS

All previous Administrative Orders, Memorandum Circulars or part thereof as they pertain to aeronautical information services which are inconsistent with the provisions of this Civil Aviation Regulation are hereby repealed, amended or modified accordingly.

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VI. DISTRIBUTION

This Civil Aviation Regulation will be distributed to all ~~air traffic services facilities, and those involved in flight operations,~~ aeronautical information services providers and those involved in AIS related activities.

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15.1 GENERAL

In compliance with the ICAO SARPS as contained in Annex 15, the object of the aeronautical information services (AIS) is to ensure the flow of aeronautical data and aeronautical information necessary for global air traffic management (ATM) system safety, regularity, economy and efficiency in an environmentally sustainable manner. The role and importance of aeronautical data and aeronautical information changed significantly with the implementation of area navigation (RNAV), performance-based navigation (PBN), airborne computer-based navigation systems, performance-based communication (PBC), performance-based surveillance (PBS), data link systems and satellite voice communications (SATVOICE). Corrupt, erroneous, late or missing aeronautical data and aeronautical information can potentially affect the safety of air navigation.

This CAR-ANS Part 15 Governing Aeronautical Information Services is to be used in conjunction with the Procedures for Air Navigation Services — ICAO Abbreviations and Codes (PANS-ABC, ICAO Doc 8400).

This CAR-ANS Part 15 Governing Aeronautical Information Services is to be used in conjunction with the ~~Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066)~~. Manual of Standards for Aeronautical Information Services (MOS-AIS).

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15.1.1 DEFINITIONS

When the following terms are used in the CAR-ANS Part 15 Governing Aeronautical Information Services, they have the following meanings:

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Bare Earth – Surface of the earth including bodies of water, and permanent ice and snow, and excluding vegetation and man-made objects.

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Navigation specification. A set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications:

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Note 1 – The Performance-based Navigation (PBN) Manual (ICAO Doc 9613), Volume II, contains detailed guidance on navigation specifications.

Note 2 – The term RNP, previously defined as “a statement of the navigation performance necessary for operation within a defined airspace”, has been removed from this Annex as the concept of RNP has been overtaken by the concept of PBN. The term RNP in this Annex is now solely used in the context of navigation specifications that require performance monitoring and alerting, e.g. RNP 4 refers to the aircraft and operating requirements, including a 4 NM lateral performance with on-board performance monitoring and alerting that are detailed in ICAO Doc 9613.

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Route Stage – A route or portion of a route flown without an intermediate landing.

SNOWTAM (Applicable as of 04 November 2021) - A special series NOTAM given in a standard format providing a surface condition report notifying the presence or cessation of hazardous conditions due to snow, ice, slush, frost, standing water or water associated with snow, slush, ice or frost on the movement area.

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15.1.2 Common reference systems for air navigation

15.1.2.1 Horizontal reference system

15.1.2.1.1 The World Geodetic System — 1984 (WGS-84) shall be used as the horizontal (geodetic) reference system for international air navigation. Consequently, published aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum.

Note.— Comprehensive guidance material concerning WGS-84 is contained in the World Geodetic System — 1984 (WGS-84) Manual (ICAO Doc 9674).

15.1.2.1.2 In precise geodetic applications and some air navigation applications, temporal changes in the tectonic plate motion and tidal effects on the Earth’s crust shall should be modelled and estimated. To reflect the temporal effect, an epoch shall should be included with any set of absolute station coordinates.

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Note 2.— The set of geodetic coordinates of globally distributed permanent GPS tracking stations for the most recent realization of the WGS-84 reference frame (WGS-84 (G1150)) is provided in ICAO Doc 9674. For each permanent GPS tracking station, the accuracy of an individually estimated position in WGS-84 (G1150) has been in the order of 1 cm (1σ).

Note 3.— Another precise worldwide terrestrial coordinate system is the International Earth Rotation Service (IERS) Terrestrial Reference System (ITRS), and the realization of ITRS is the

IERS Terrestrial Reference Frame (ITRF). Guidance material regarding the ITRS is provided in Appendix C of ICAO Doc 9674. The most current realization of the WGS-84 (G1150) is referenced to the ITRF 2000 epoch. The WGS-84 (G1150) is consistent with the ITRF 2000 and in practical realization the difference between these two systems is in the one to two centimeter range worldwide, meaning WGS-84 (G1150) and ITRF 2000 are essentially identical.

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15.1.2.2.3 At those geographical positions where the accuracy of EGM-96 does not meet the accuracy requirements for elevation and geoid undulation on the basis of EGM-96 data, regional, national or local geoid models containing high resolution (short wavelength) gravity field data shall be developed and used. When a geoid model other than the EGM-96 model is used, a description of the model used, including the parameters required for height transformation between the model and EGM-96, shall be provided in the Aeronautical Information Publication (AIP).

Note.— Specifications concerning determination and reporting (accuracy of field work and data integrity) of elevation and geoid undulation at specific positions at aerodromes/heliports are given in the PANS-~~AIM (Doc 10066)~~ MOS-AIS, Appendix 1.

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15.1.3 Miscellaneous specifications

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15.1.3.3 Units of measurement used in the origination, processing and distribution of aeronautical data and aeronautical information shall ~~shall~~ **should** be consistent to the table contained in AIP Philippines GEN 2.1.

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15.2 RESPONSIBILITIES AND FUNCTIONS

15.2.1 State responsibilities

15.2.1.1 The Civil Aviation Authority of the Philippines shall:

a) provide an aeronautical information services (AIS); or

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15.2.2 AIS responsibilities and functions

15.2.2.1 An AIS shall ensure that aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation are made available in a form suitable for the operational requirements of the air traffic management (ATM) community, including:

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Note.— A description of the ATM community is contained in the Global Air Traffic Management Operational Concept (ICAO Doc 9854).

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15.2.3 Exchange of aeronautical data and aeronautical information

15.2.3.1 All elements of aeronautical information products provided by other States shall be addressed to AIS ~~Operations Philippines~~ office. ~~Such an~~ **This** office shall be qualified to deal with requests for aeronautical data and aeronautical information provided by other States.

15.2.3.2 Formal arrangements shall should be established between those parties providing aeronautical data and aeronautical information on behalf of the States AIS Philippines and their users in relation to the provision of the service.

Note.— Guidance material on such formal arrangements is contained in the *Aeronautical Information Services Manual (ICAO Doc 8126)*.

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~~15.2.3.4 Exchange of aeronautical data and aeronautical information has been established by connecting the NOF and AIS Operations (AIS OPS) of CAAP Central Office with Manila Aeronautical Fixed Service (AFS) Station~~ Whenever practicable, direct contact between AIS shall be established in order to facilitate the international exchange of aeronautical data and aeronautical information.

15.2.3.5 Except as provided in 15.2.3.7, one copy of each of the following aeronautical information products (where available) that have been requested by the AIS of a Contracting State shall be made available by the originating State AIS Philippines and provided in the mutually agreed form(s), without charge, even where authority for publication/storage and distribution has been delegated to a non-governmental agency:

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15.2.3.6 The exchange of more than one copy of the elements of aeronautical information products, and other air navigation documents, including those containing air navigation legislation and regulations, shall should be subject to bilateral agreement between the participating Contracting States and entities.

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15.2.3.8 The procurement of aeronautical data and aeronautical information, including the elements of aeronautical information products, and other air navigation documents, including those containing air navigation legislation and regulations, by States other than Contracting States and by other entities shall should be subject to separate agreement between the participating States and entities.

15.2.3.9 Globally interoperable aeronautical data and aeronautical information exchange models shall be used for the provision of data sets.

Note 1.— Specifications concerning globally interoperable aeronautical data and aeronautical information exchange models are contained in the ~~Procedures for Air Navigation Services — Aeronautical Information Management (PANS AIM, Doc 10066)~~. MOS-AIS.

Note 2.— Guidance material on globally interoperable aeronautical data and aeronautical information exchange models is contained in ICAO Doc 8126.

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15.2.4 15.2.4 Copyright

Note.— In order to protect the investment in the products of a State's Philippines' AIS as well as to ensure better control of their use, States CAAP may wish to apply copyright to those products in accordance with their national laws.

15.2.4.1 Any aeronautical information product which has been granted copyright protection by the originating State and provided to another State in accordance with 15.2.3 shall only be made available to a third party on the condition that the third party is made aware that the product is

copyright protected and provided that it is appropriately annotated that the product is subject to copyright by the originating State.

15.2.4.2 When aeronautical data and aeronautical information are provided to a **other** State in accordance with 15.2.3.7, the receiving State shall not provide the digital data sets of ~~the providing State~~ **Philippines' AIS** to any third party without the consent of the ~~providing State~~ **Philippines' AIS**.

15.2.5 Cost recovery

The overhead cost of collecting and compiling aeronautical data and aeronautical information ~~shall~~ **should** be included in the cost basis for airport and air navigation services charges, as appropriate, in accordance with the principles contained in ICAO's Policies on Charges for Airports and Air Navigation Services (**ICAO Doc 9082**).

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15.3. AERONAUTICAL INFORMATION MANAGEMENT

15.3.1 Information management requirements

The information management resources and processes established by an aeronautical information services (AIS) shall be adequate to ensure the timely collection, processing, storing, integration, exchange and delivery of quality-assured aeronautical data and aeronautical information within the air traffic management (ATM) system.

15.3.2 Data quality specifications

15.3.2.1 Data accuracy

The order of accuracy for aeronautical data shall be in accordance with its intended use.

*Note.— Specifications concerning the order of accuracy (including confidence level) for aeronautical data are contained in the ~~Procedures for Air Navigation Services—Aeronautical Information Management (PANS-AIM, Doc 10066)~~, **MOS-AIS, Appendix 1**.*

15.3.2.2 Data resolution

The order of resolution of aeronautical data shall be commensurate with the actual data accuracy.

*Note 1.— Specifications concerning the resolution of aeronautical data are contained in the ~~PANS-AIM (Doc 10066)~~, **MOS-AIS, Appendix 1**.*

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15.3.2.3 Data integrity

15.3.2.3.1 The integrity of aeronautical data shall be maintained throughout the data chain from origination to distribution to the next intended user.

*Note.— Specifications concerning the integrity classification related to aeronautical data are contained in the ~~PANS-AIM (Doc 10066)~~, **MOS-AIS, Appendix 1**.*

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15.3.4.2 Digital data error detection techniques shall be used in order to maintain the integrity levels as specified in 15.3.2.3.

Note.— Detailed specifications concerning digital data error detection techniques are contained in the ~~PANS-*AIM* (Doc-10066)~~, *MOS-AIS*.

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15.3.5 Use of automation

15.3.5.1 Automation shall be applied in order to ensure the quality, efficiency and cost-effectiveness of aeronautical information services.

Note.— Guidance material on the development of databases and the establishment of data exchange services is contained in *ICAO Doc 8126*.

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15.3.6 Quality management system

15.3.6.1 Quality management systems shall be implemented and maintained encompassing all functions of an AIS, as outlined in 15.2.2. The execution of such quality management systems shall be made demonstrable for each function stage.

Note.— Guidance material is contained in the Manual on the Quality Management System for Aeronautical Information Services (*ICAO Doc 9839*) (*planned for development by November 2019*).

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15.4 SCOPE OF AERONAUTICAL DATA AND AERONAUTICAL INFORMATION

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15.4.1 Scope of aeronautical data and aeronautical information

15.4.1.1 The aeronautical data and aeronautical information to be received and managed by the aeronautical information services (AIS) shall include at least the following sub-domains:

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Note 1.— Detailed specifications concerning the content of each sub-domain are contained in the ~~Procedures for Air Navigation Services—Aeronautical Information Management (PANS-*AIM*, Doc-10066)~~, *MOS-AIS*, Appendix 1.

...

15.4.1.2 Determination and reporting of aeronautical data shall be in accordance with the accuracy and integrity classification required to meet the needs of the end-user of aeronautical data.

Note.— Specifications concerning the accuracy and integrity classification related to aeronautical data are contained in the ~~PANS-*AIM* (Doc-10066)~~, *MOS-AIS*, Appendix 1.

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15.4.2.2 Metadata collection shall be applied throughout the aeronautical information data chain, from origination to distribution to the next intended user.

Note.— Detailed specifications concerning metadata are contained in the ~~PANS-*AIM* (Doc-10066)~~, *MOS-AIS*.

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15.5 AERONAUTICAL INFORMATION PRODUCTS AND SERVICES

15.5.1 General

15.5.1.1 Aeronautical information shall be provided in the form of aeronautical information products and associated services.

Note.— *Specifications concerning the order of resolution of aeronautical data provided for each aeronautical information product are contained in the ~~Procedures for Air Navigation Services—Aeronautical Information Management (PANS- AIM, Doc 10066)~~, MOS-AIS, Appendix 1.*

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15.5.2 Aeronautical information in a standardized presentation

15.5.2.1 Aeronautical information provided in a standardized presentation shall include the aeronautical information publication (AIP), AIP Amendments, AIP Supplements, AIC, NOTAM and aeronautical charts.

Note 1.— *Detailed specifications about AIP, AIP Amendments, AIP Supplements, AIC and NOTAM are contained in the ~~PANS- AIM (Doc 10066)~~, MOS-AIS.*

Note 2.— *Cases where digital data sets may replace the corresponding elements of the standardized presentation are detailed in the ~~PANS- AIM (Doc 10066)~~, MOS-AIS.*

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15.5.2.1.2 The AIP, AIP Amendment, AIP Supplement and AIC when provided as an electronic document (eAIP) ~~shall~~ **should** allow for both displaying on electronic devices and printing on paper.

...

15.5.2.3.1 A checklist of valid AIP Supplements shall be regularly provided.

Note.— *Detailed specifications concerning the frequency for providing checklists of valid AIP Supplements are contained in the ~~PANS- AIM (Doc 10066)~~, MOS-AIS.*

...

15.5.2.4.4 A checklist of currently valid AIC shall be regularly provided.

Note.— *Detailed specifications concerning the frequency for providing checklists of valid AIC are contained in the ~~PANS- AIM (Doc 10066)~~, MOS-AIS.*

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15.5.2.5.4 Electronic aeronautical charts ~~shall~~ **should** be provided based on digital databases and the use of geographic information systems.

15.5.2.5.5 The chart resolution of aeronautical data shall be that as specified for a particular chart.

Note.— *Specifications concerning the chart resolution for aeronautical data are contained in the ~~PANS- AIM (Doc 10066)~~, MOS-AIS, Appendix 1.*

15.5.2.6 NOTAM

Note.1 — *Detailed specifications for NOTAM, including formats for ASHTAM, are contained in the ~~PANS- AIM (Doc 10066)~~, MOS-AIS.*

A checklist of valid NOTAM shall be regularly provided.

Note.2 — Detailed specifications concerning the frequency for providing checklists of valid NOTAM are contained in the ~~PANS AIM (Doe 10066)~~ MOS-AIS.

15.5.3 Digital data sets

15.5.3.1 General

15.5.3.1.1 Digital data shall be in the form of the following data sets:

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Note.— Detailed specifications concerning the content of the digital data sets are contained in the ~~PANS AIM (Doe 10066)~~ MOS-AIS.

15.5.3.1.2 Each data set shall be provided to the next intended user together with at least the minimum set of metadata that ensures traceability.

Note.— Detailed specifications concerning metadata are contained in the ~~PANS AIM (Doe 10066)~~ MOS-AIS.

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15.5.3.2.1 An AIP data set ~~shall~~ **should** be provided covering the extent of information as provided in the AIP.

15.5.3.2.2 When it is not possible to provide a complete AIP data set, the data subset(s) that are available ~~shall~~ **should** be provided.

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15.5.3.3 Terrain and obstacle data sets

Note 1.— Numerical requirements for terrain and obstacle data sets are contained in the ~~PANS AIM (Doe 10066)~~ MOS-AIS, Appendices 1 and 8.

Note 2.— Requirements for terrain and obstacle data collection surfaces are contained in the ~~PANS AIM (Doe 10066)~~ MOS-AIS, Appendix 8.

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15.5.3.3.1 The coverage areas for terrain and obstacle data sets shall be specified as:

— Area 1: the entire territory of the Philippines;

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— Area 3: the area bordering an aerodrome movement area that extends horizontally from the edge of a runway to 90 m from the runway ~~centre~~ **center** line and 50 m from the edge of all other parts of the aerodrome movement area; and

— Area 4: the area extending 900 m prior to the runway threshold and 60 m each side of the extended runway ~~centre~~ **center** line in the direction of the approach on a precision approach runway, Category II or III.

15.5.3.3.2 Where the terrain at a distance greater than 900 m (3 000 ft) from the runway threshold is mountainous or otherwise significant, the length of Area 4 ~~shall~~ **should** be extended to a distance not exceeding 2 000 m (6 500 ft) from the runway threshold.

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15.5.3.3.3.4 For aerodromes regularly used by international civil aviation, additional terrain data ~~shall~~ **should** be provided within Area 2 as follows:

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15.5.3.3.3.5 Arrangements ~~shall~~ **should** be made for coordinating the provision of terrain data for adjacent aerodromes where their respective coverage areas overlap to assure that the data for the same terrain is correct.

15.5.3.3.3.6 For those aerodromes located near territorial boundaries, arrangements ~~shall~~ **should** be made among States concerned to share terrain data.

15.5.3.3.3.7 For aerodromes regularly used by international civil aviation, terrain data ~~shall~~ **should** be provided for Area 3.

...

15.5.3.3.3.9 Where additional terrain data is collected to meet other aeronautical requirements, the terrain data sets ~~shall~~ **should** be expanded to include this additional data.

...

15.5.3.3.4.5 For aerodromes regularly used by international civil aviation, obstacle data shall be provided for:

a) Area 2a for those obstacles that penetrate an obstacle data collection surface outlined by a rectangular area around a runway that comprises the runway strip plus any clearway that exists. The Area 2a obstacle collection surface shall have a height of 3 m above the nearest runway elevation measured along the runway ~~centre~~ **center** line, and for those portions related to a clearway, if one exists, at the elevation of the nearest runway end;

...

15.5.3.3.3.4.6 For aerodromes regularly used by international civil aviation, obstacle data ~~shall~~ **should** be provided for Areas 2b, 2c and 2d for obstacles that penetrate the relevant obstacle data collection surface specified as follows:

...

15.5.3.3.3.4.7 Arrangements ~~shall~~ **should** be made for coordinating the provision of obstacle data for adjacent aerodromes where their respective coverage areas overlap to assure that the data for the same obstacle is correct.

15.5.3.3.3.4.8 For those aerodromes located near territorial boundaries, arrangements ~~shall~~ **should** be made ~~among~~ **with** States concerned to share obstacle data.

15.5.3.3.4.9 For aerodromes regularly used by international civil aviation, obstacle data ~~shall~~ **should** be provided for Area 3 for obstacles that penetrate the relevant obstacle data collection surface extending a half-~~metre~~ **meter** (0.5 m) above the horizontal plane passing through the nearest point on the aerodrome movement area.

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15.5.3.3.4.11 Where additional obstacle data is collected to meet other aeronautical requirements, the obstacle data sets ~~shall~~ **should** be expanded to include this additional data.

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15.5.3.4.2 Aerodrome mapping data sets ~~shall~~ **should** be made available for aerodromes regularly used by international civil aviation.

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15.5.3.4.1.3 Global communication networks such as the Internet ~~shall~~ **should**, whenever practicable, be employed for the provision of aeronautical information products.

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15.5.4.2.7 Selective distribution lists shall ~~shall~~ should be used when practicable.

Note.— *Guidance material relating to selective distribution lists is contained in the Aeronautical Information Services Manual (ICAO Doc 8126).*

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15.5.5.2 Aeronautical information provided for pre-flight planning purposes shall include information of operational significance from the elements of aeronautical information products.

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Note 2.— *A recapitulation of valid NOTAM of operational significance and other information of urgent character may be made available to flight crews in the form of plain-language pre-flight information bulletins (PIB). Guidance material on the preparation of PIB is contained in ICAO Doc 8126.*

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15.5.6.2 The arrangements specified in 15.5.6.1 shall ensure that such information is made available to the aeronautical information services (AIS) for distribution as the circumstances necessitate.

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15.5.6.4 The information about presence of wildlife hazards shall be made available to the aeronautical information services for distribution as the circumstances necessitate.

15.6 AERONAUTICAL INFORMATION UPDATES

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15.6.2 Aeronautical information regulation and control (AIRAC)

15.6.2.1 Information concerning the following circumstances shall be distributed under the regulated system (AIRAC), i.e. basing establishment, withdrawal or significant changes upon a series of common effective dates at intervals of 28 days, including 8 November 2018:

a) limits (horizontal and vertical), regulations and procedures applicable to:

...

j) aerodrome operating minima if published ~~by a State~~.

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15.6.2.3 Information provided under the AIRAC system shall be made available by the aeronautical information services (AIS) so as to reach recipients at least 28 days in advance of the effective date.

...

15.6.2.7 Whenever major changes are planned and where advance notice is desirable and practicable, information shall be made available by the AIS so as to reach recipients at least 56 days in advance of the effective date. This shall be applied to the establishment of, and premeditated major changes in, the circumstances listed below, and other major changes if deemed necessary:

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Note.— *Guidance material on what constitutes a major change is included in the Aeronautical Information Services Manual (ICAO Doc 8126).*

15.6.3 Aeronautical information product updates

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15.6.3.2 NOTAM

15.6.3.2.1 When an AIP Amendment or an AIP Supplement is published in accordance with AIRAC procedures, a Trigger NOTAM shall be originated.

Note.— Detailed specifications concerning the Trigger NOTAM are contained in the *Procedures for Air Navigation Services—Aeronautical Information Management (PANS-AIM, Doc 10066): MOS-AIS*.

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15.6.3.2.3 A NOTAM shall be originated and issued concerning the following information:

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h) occurrence or correction of major defects or impediments in the ~~manoeuvring~~ maneuvering area;

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m) presence of hazards ~~not otherwise promulgated~~, which affect air navigation (including obstacles, military exercises and operations, intentional and unintentional radio frequency interferences, rocket launches, displays, fireworks, sky lanterns, rocket debris, races and major parachuting events ~~outside promulgated sites~~);

n) conflict zones which affect air navigation (to include information that is as specific as possible regarding the nature and extent of threats of that conflict and its consequences for civil aviation);

Note.— Guidance related to conflict zones is contained in the Risk Assessment Manual for Civil Aircraft Operations Over or Near Conflict Zones (ICAO Doc 10084).

o) planned laser emissions, laser displays and search lights if pilots' night vision is likely to be impaired;

p) erecting or removal of, or changes to, obstacles to air navigation in the take-off/climb, missed approach, approach areas and runway strip;

q) establishment or discontinuance (including activation or deactivation) as applicable, or changes in the status of prohibited, restricted or danger areas;

r) establishment or discontinuance of areas or routes or portions thereof where the possibility of interception exists and where the maintenance of guard on the VHF emergency frequency 121.5 MHz is required;

s) allocation, cancellation or change of location indicators;

t) changes in aerodrome/heliport rescue and firefighting category provided (see CAAP MOS-Aerodromes);

u) presence or removal of, or significant changes in, hazardous conditions due to snow, slush, ice, radioactive material, toxic chemicals, volcanic ash deposition or water on the movement area;

v) outbreaks of epidemics necessitating changes in notified requirements for inoculations and quarantine measures;

⤵ w) observations or forecasts of space weather phenomena, the date and time of their occurrence, the flight levels where provided and portions of the airspace which may be affected by the phenomena;

⤵ x) an operationally significant change in volcanic activity, the location, date and time of volcanic eruptions and/or horizontal and vertical extent of volcanic ash cloud, including direction of movement, flight levels and routes or portions of routes which could be affected;

⤵ y) release into the atmosphere of radioactive materials or toxic chemicals following a nuclear or chemical incident, the location, date and time of the incident, the flight levels and routes or portions thereof which could be affected and the direction of movement;

⤵ z) establishment of operations of humanitarian relief missions, such as those undertaken under the auspices of the United Nations, together with procedures and/or limitations which affect air navigation; and

⤵ aa) implementation of short-term contingency measures in cases of disruption, or partial disruption, of ATS and related supporting services.

Note 1.— See CAR-ANS Part 11, 11.2.31 and Attachment 11C.

Note 2.— Specifications concerning the timely promulgation of information by NOTAM are contained in MOS-AIS.

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15.6.3.3.3 When made available as a completely reissued data set, the differences from the previously issued complete data set ~~shall~~ **should** be indicated.

15.6.3.3.4 When temporary changes of short duration are made available as digital data (digital NOTAM), they ~~shall~~ **should** use the same aeronautical information model as the complete data set.

— END —

NEW/AMENDED REGULATION AFTER REVISION:

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In compliance with the ICAO SARPS as contained in Annex 15, the object of the aeronautical information services (AIS) is to ensure the flow of aeronautical data and aeronautical information necessary for global air traffic management (ATM) system safety, regularity, economy and efficiency in an environmentally sustainable manner. The role and importance of aeronautical data and aeronautical information changed significantly with the implementation of area navigation (RNAV), performance-based navigation (PBN), airborne computer-based navigation systems, performance-based communication (PBC), performance-based surveillance (PBS), data link systems and satellite voice communications (SATVOICE). Corrupt, erroneous, late or missing aeronautical data and aeronautical information can potentially affect the safety of air navigation.

This CAR-ANS Part 15 Governing Aeronautical Information Services is to be used in conjunction with the Procedures for Air Navigation Services — ICAO Abbreviations and Codes (PANS-ABC, ICAO Doc 8400).

This CAR-ANS Part 15 Governing Aeronautical Information Services is to be used in conjunction with the Manual of Standards for Aeronautical Information Services (MOS-AIS).

...

15.1.1 DEFINITIONS

When the following terms are used in the CAR-ANS Part 15 Governing Aeronautical Information Services, they have the following meanings:

...

Bare Earth – Surface of the Earth including bodies of water and permanent ice and snow, and excluding vegetation and man-made objects.

...

Navigation specification. A set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications:

...

Note 1 – The Performance-based Navigation (PBN) Manual (ICAO Doc 9613), Volume II, contains detailed guidance on navigation specifications.

Note 2 – The term RNP, previously defined as “a statement of the navigation performance necessary for operation within a defined airspace”, has been removed from this Annex as the concept of RNP has been overtaken by the concept of PBN. The term RNP in this Annex is now solely used in the context of navigation specifications that require performance monitoring and alerting, e.g. RNP 4 refers to the aircraft and operating requirements, including a 4 NM lateral performance with on-board performance monitoring and alerting that are detailed in ICAO Doc 9613.

...

Route Stage – A route or portion of a route flown without an intermediate landing.

SNOWTAM (Applicable as of 04 November 2021) - A special series NOTAM given in a standard format providing a surface condition report notifying the presence or cessation of hazardous conditions due to snow, ice, slush, frost, standing water or water associated with snow, slush, ice or frost on the movement area.

...

15.1.2 Common reference systems for air navigation

15.1.2.1.1 The World Geodetic System — 1984 (WGS-84) shall be used as the horizontal (geodetic) reference system for international air navigation. Consequently, published aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum.

Note.— Comprehensive guidance material concerning WGS-84 is contained in the World Geodetic System — 1984 (WGS-84) Manual (ICAO Doc 9674).

15.1.2.1.2 In precise geodetic applications and some air navigation applications, temporal changes in the tectonic plate motion and tidal effects on the Earth’s crust should be modelled and estimated. To reflect the temporal effect, an epoch should be included with any set of absolute station coordinates.

...

Note 2.— The set of geodetic coordinates of globally distributed permanent GPS tracking stations for the most recent realization of the WGS-84 reference frame (WGS-84 (G1150)) is provided in ICAO Doc 9674. For each permanent GPS tracking station, the accuracy of an individually estimated position in WGS-84 (G1150) has been in the order of 1 cm (1 σ).

Note 3.— Another precise worldwide terrestrial coordinate system is the International Earth Rotation Service (IERS) Terrestrial Reference System (ITRS), and the realization of ITRS is the IERS Terrestrial Reference Frame (ITRF). Guidance material regarding the ITRS is provided in Appendix C of ICAO Doc 9674. The most current realization of the WGS-84 (G1150) is referenced to the ITRF 2000 epoch. The WGS-84 (G1150) is consistent with the ITRF 2000 and in practical realization the difference between these two systems is in the one to two

centimeter range worldwide, meaning WGS-84 (G1150) and ITRF 2000 are essentially identical.

...

15.1.2.2.3 At those geographical positions where the accuracy of EGM-96 does not meet the accuracy requirements for elevation and geoid undulation on the basis of EGM-96 data, regional, national or local geoid models containing high resolution (short wavelength) gravity field data shall be developed and used. When a geoid model other than the EGM-96 model is used, a description of the model used, including the parameters required for height transformation between the model and EGM-96, shall be provided in the Aeronautical Information Publication (AIP).

Note.— Specifications concerning determination and reporting (accuracy of field work and data integrity) of elevation and geoid undulation at specific positions at aerodromes/heliports are given in the MOS-AIS, Appendix 1.

...

15.1.3 Miscellaneous specifications

...

15.1.3.3 Units of measurement used in the origination, processing and distribution of aeronautical data and aeronautical information should be consistent to the table contained in AIP Philippines GEN 2.1.

...

15.2 RESPONSIBILITIES AND FUNCTIONS

15.2.1 State responsibilities

15.2.1.1 The Civil Aviation Authority of the Philippines shall:

a) provide an aeronautical information services (AIS); or

...

15.2.2 AIS responsibilities and functions

15.2.2.1 An AIS shall ensure that aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation are made available in a form suitable for the operational requirements of the air traffic management (ATM) community, including:

...

Note.— A description of the ATM community is contained in the Global Air Traffic Management Operational Concept (ICAO Doc 9854).

...

15.2.3 Exchange of aeronautical data and aeronautical information

15.2.3.1 All elements of aeronautical information products provided by other States shall be addressed to AIS Philippines office. This office shall be qualified to deal with requests for aeronautical data and aeronautical information provided by other States.

15.2.3.2 Formal arrangements should be established between AIS Philippines and their users in relation to the provision of the service.

Note.— Guidance material on such formal arrangements is contained in the Aeronautical Information Services Manual (ICAO Doc 8126).

...

15.2.3.4 Whenever practicable, direct contact between AIS shall be established in order to facilitate the international exchange of aeronautical data and aeronautical information.

15.2.3.5 Except as provided in 15.2.3.7, one copy of each of the following aeronautical information products (where available) that have been requested by the AIS of a Contracting State shall be made available by the AIS Philippines and provided in the mutually agreed form(s), without charge, even where authority for publication/storage and distribution has been delegated to a non-governmental agency:

...

15.2.3.6 The exchange of more than one copy of the elements of aeronautical information products, and other air navigation documents, including those containing air navigation legislation and regulations, should be subject to bilateral agreement between the participating Contracting States and entities.

...

15.2.3.8 The procurement of aeronautical data and aeronautical information, including the elements of aeronautical information products, and other air navigation documents, including those containing air navigation legislation and regulations, by States other than Contracting States and by other entities should be subject to separate agreement between the participating States and entities.

15.2.3.9 Globally interoperable aeronautical data and aeronautical information exchange models shall be used for the provision of data sets.

Note 1.— Specifications concerning globally interoperable aeronautical data and aeronautical information exchange models are contained in the MOS-AIS.

Note 2.— Guidance material on globally interoperable aeronautical data and aeronautical information exchange models is contained in ICAO Doc 8126.

...

15.2.4 Copyright

Note.— In order to protect the investment in the products of a Philippines' AIS as well as to ensure better control of their use, CAAP may wish to apply copyright to those products in accordance with their national laws.

15.2.4.1 Any aeronautical information product which has been granted copyright protection and provided to another State in accordance with 15.2.3 shall only be made available to a third party on the condition that the third party is made aware that the product is copyright protected and provided that it is appropriately annotated that the product is subject to copyright.

15.2.4.2 When aeronautical data and aeronautical information are provided to other State in accordance with 15.2.3.7, the receiving State shall not provide the digital data sets of Philippines' AIS to any third party without the consent of the Philippines' AIS.

15.2.5 Cost recovery

The overhead cost of collecting and compiling aeronautical data and aeronautical information should be included in the cost basis for airport and air navigation services charges, as appropriate, in accordance with the principles contained in ICAO's Policies on Charges for Airports and Air Navigation Services (ICAO Doc 9082).

...

15.3. AERONAUTICAL INFORMATION MANAGEMENT

15.3.1 Information management requirements

The information management resources and processes established by an aeronautical information services (AIS) shall be adequate to ensure the timely collection, processing, storing, integration, exchange and delivery of quality-assured aeronautical data and aeronautical information within the air traffic management (ATM) system.

15.3.2 Data quality specifications

15.3.2.1 Data accuracy

The order of accuracy for aeronautical data shall be in accordance with its intended use.

Note.— Specifications concerning the order of accuracy (including confidence level) for aeronautical data are contained in the MOS-AIS, Appendix 1.

15.3.2.2 Data resolution

The order of resolution of aeronautical data shall be commensurate with the actual data accuracy.

Note 1.— Specifications concerning the resolution of aeronautical data are contained in the MOS-AIS, Appendix 1.

...

15.3.2.3 Data integrity

15.3.2.3.1 The integrity of aeronautical data shall be maintained throughout the data chain from origination to distribution to the next intended user.

Note.— Specifications concerning the integrity classification related to aeronautical data are contained in the MOS-AIS, Appendix 1.

...

15.3.4.2 Digital data error detection techniques shall be used in order to maintain the integrity levels as specified in 15.3.2.3.

Note.— Detailed specifications concerning digital data error detection techniques are contained in the MOS-AIS.

...

15.3.5 Use of automation

15.3.5.1 Automation shall be applied in order to ensure the quality, efficiency and cost-effectiveness of aeronautical information services.

Note.— Guidance material on the development of databases and the establishment of data exchange services is contained in ICAO Doc 8126.

...

15.3.6 Quality management system

15.3.6.1 Quality management systems shall be implemented and maintained encompassing all functions of an AIS, as outlined in 15.2.2. The execution of such quality management systems shall be made demonstrable for each function stage.

Note.— *Guidance material is contained in the Manual on the Quality Management System for Aeronautical Information Services (ICAO Doc 9839).*

...

15.4 SCOPE OF AERONAUTICAL DATA AND AERONAUTICAL INFORMATION

...

15.4.1 Scope of aeronautical data and aeronautical information

15.4.1.1 The aeronautical data and aeronautical information to be received and managed by the aeronautical information services (AIS) shall include at least the following sub-domains:

...

Note 1.— *Detailed specifications concerning the content of each sub-domain are contained in the MOS-AIS, Appendix 1.*

...

15.4.1.2 Determination and reporting of aeronautical data shall be in accordance with the accuracy and integrity classification required to meet the needs of the end-user of aeronautical data.

Note.— *Specifications concerning the accuracy and integrity classification related to aeronautical data are contained in the MOS-AIS, Appendix 1.*

...

15.4.2.2 Metadata collection shall be applied throughout the aeronautical information data chain, from origination to distribution to the next intended user.

Note.— *Detailed specifications concerning metadata are contained in the MOS-AIS.*

...

15.5 AERONAUTICAL INFORMATION PRODUCTS AND SERVICES

15.5.1 General

15.5.1.1 Aeronautical information shall be provided in the form of aeronautical information products and associated services.

Note.— *Specifications concerning the order of resolution of aeronautical data provided for each aeronautical information product are contained in the MOS-AIS, Appendix 1.*

...

15.5.2 Aeronautical information in a standardized presentation

15.5.2.1 Aeronautical information provided in a standardized presentation shall include the aeronautical information publication (AIP), AIP Amendments, AIP Supplements, AIC, NOTAM and aeronautical charts.

Note 1.— *Detailed specifications about AIP, AIP Amendments, AIP Supplements, AIC and NOTAM are contained in the MOS-AIS.*

Note 2.— *Cases where digital data sets may replace the corresponding elements of the standardized presentation are detailed in the MOS-AIS.*

...

15.5.2.1.2 The AIP, AIP Amendment, AIP Supplement and AIC when provided as an electronic document (eAIP) should allow for both displaying on electronic devices and printing on paper.

...

15.5.2.3.1 A checklist of valid AIP Supplements shall be regularly provided.

Note.— Detailed specifications concerning the frequency for providing checklists of valid AIP Supplements are contained in the MOS-AIS.

...

15.5.2.4.4 A checklist of currently valid AIC shall be regularly provided.

Note.— Detailed specifications concerning the frequency for providing checklists of valid AIC are contained in the MOS-AIS.

...

15.5.2.5.4 Electronic aeronautical charts should be provided based on digital databases and the use of geographic information systems.

15.5.2.5.5 The chart resolution of aeronautical data shall be that as specified for a particular chart.

Note.— Specifications concerning the chart resolution for aeronautical data are contained in the MOS-AIS, Appendix 1.

15.5.2.6 NOTAM

Note 1. — Detailed specifications for NOTAM, including formats for ASHTAM, are contained in the MOS-AIS.

A checklist of valid NOTAM shall be regularly provided.

Note 2. — Detailed specifications concerning the frequency for providing checklists of valid NOTAM are contained in the MOS-AIS.

15.5.3 Digital data sets

15.5.3.1 General

15.5.3.1.1 Digital data shall be in the form of the following data sets:

...

Note.— Detailed specifications concerning the content of the digital data sets are contained in the MOS-AIS.

15.5.3.1.2 Each data set shall be provided to the next intended user together with at least the minimum set of metadata that ensures traceability.

Note.— Detailed specifications concerning metadata are contained in the MOS-AIS.

...

15.5.3.2.1 An AIP data set should be provided covering the extent of information as provided in the AIP.

15.5.3.2.2 When it is not possible to provide a complete AIP data set, the data subset(s) that are available should be provided.

...

15.5.3.3 Terrain and obstacle data sets

Note 1.— Numerical requirements for terrain and obstacle data sets are contained in the MOS-AIS, Appendices 1 and 8.

Note 2.— Requirements for terrain and obstacle data collection surfaces are contained in the MOS-AIS, Appendix 8.

...

15.5.3.3.1 The coverage areas for terrain and obstacle data sets shall be specified as:

— Area 1: the entire territory of the Philippines;

...

— Area 3: the area bordering an aerodrome movement area that extends horizontally from the edge of a runway to 90 m from the runway center line and 50 m from the edge of all other parts of the aerodrome movement area; and

— Area 4: the area extending 900 m prior to the runway threshold and 60 m each side of the extended runway center line in the direction of the approach on a precision approach runway, Category II or III.

15.5.3.3.2 Where the terrain at a distance greater than 900 m (3 000 ft) from the runway threshold is mountainous or otherwise significant, the length of Area 4 should be extended to a distance not exceeding 2 000 m (6 500 ft) from the runway threshold.

...

15.5.3.3.3.4 For aerodromes regularly used by international civil aviation, additional terrain data should be provided within Area 2 as follows:

...

15.5.3.3.3.5 Arrangements should be made for coordinating the provision of terrain data for adjacent aerodromes where their respective coverage areas overlap to assure that the data for the same terrain is correct.

15.5.3.3.3.6 For those aerodromes located near territorial boundaries, arrangements should be made among States concerned to share terrain data.

15.5.3.3.3.7 For aerodromes regularly used by international civil aviation, terrain data should be provided for Area 3.

...

15.5.3.3.3.9 Where additional terrain data is collected to meet other aeronautical requirements, the terrain data sets should be expanded to include this additional data.

...

15.5.3.3.4.5 For aerodromes regularly used by international civil aviation, obstacle data shall be provided for:

a) Area 2a for those obstacles that penetrate an obstacle data collection surface outlined by a rectangular area around a runway that comprises the runway strip plus any clearway that exists. The Area 2a obstacle collection surface shall have a height of 3 m above the nearest runway elevation measured along the runway center line, and for those portions related to a clearway, if one exists, at the elevation of the nearest runway end;

...

15.5.3.3.3.4.6 For aerodromes regularly used by international civil aviation, obstacle data should be provided for Areas 2b, 2c and 2d for obstacles that penetrate the relevant obstacle data collection surface specified as follows:

...

15.5.3.3.3.4.7 Arrangements should be made for coordinating the provision of obstacle data for adjacent aerodromes where their respective coverage areas overlap to assure that the data for the same obstacle is correct.

15.5.3.3.3.4.8 For those aerodromes located near territorial boundaries, arrangements should be made with States concerned to share obstacle data.

15.5.3.3.4.9 For aerodromes regularly used by international civil aviation, obstacle data should be provided for Area 3 for obstacles that penetrate the relevant obstacle data collection surface extending a half-meter (0.5 m) above the horizontal plane passing through the nearest point on the aerodrome movement area.

...

15.5.3.3.4.11 Where additional obstacle data is collected to meet other aeronautical requirements, the obstacle data sets should be expanded to include this additional data.

...

15.5.3.4.2 Aerodrome mapping data sets should be made available for aerodromes regularly used by international civil aviation.

...

15.5.3.4.1.3 Global communication networks such as the Internet should, whenever practicable, be employed for the provision of aeronautical information products.

...

15.5.4.2.7 Selective distribution lists should be used when practicable.

Note.— Guidance material relating to selective distribution lists is contained in the Aeronautical Information Services Manual (ICAO Doc 8126).

...

15.5.5.2 Aeronautical information provided for pre-flight planning purposes shall include information of operational significance from the elements of aeronautical information products.

...

Note 2.— A recapitulation of valid NOTAM of operational significance and other information of urgent character may be made available to flight crews in the form of plain-language pre-flight information bulletins (PIB). Guidance material on the preparation of PIB is contained in ICAO Doc 8126.

...

15.5.6.2 The arrangements specified in 15.5.6.1 shall ensure that such information is made available to the aeronautical information services (AIS) for distribution as the circumstances necessitate.

...

15.5.6.4 The information about presence of wildlife hazards shall be made available to the aeronautical information services for distribution as the circumstances necessitate.

CHAPTER 15.6 AERONAUTICAL INFORMATION UPDATES

...

15.6.2 Aeronautical information regulation and control (AIRAC)

15.6.2.1 Information concerning the following circumstances shall be distributed under the regulated system (AIRAC), i.e. basing establishment, withdrawal or significant changes upon a series of common effective dates at intervals of 28 days, including 8 November 2018:

a) limits (horizontal and vertical), regulations and procedures applicable to:

...

j) aerodrome operating minima if published.

...

15.6.2.3 Information provided under the AIRAC system shall be made available by the aeronautical information services (AIS) so as to reach recipients at least 28 days in advance of the effective date.

...

15.6.2.7 Whenever major changes are planned and where advance notice is desirable and practicable, information shall be made available by the AIS so as to reach recipients at least 56 days in advance of the effective date. This shall be applied to the establishment of, and premeditated major changes in, the circumstances listed below, and other major changes if deemed necessary:

...

Note.— Guidance material on what constitutes a major change is included in the Aeronautical Information Services Manual (ICAO Doc 8126).

15.6.3 Aeronautical information product updates

...

15.6.3.2 NOTAM

15.6.3.2.1 When an AIP Amendment or an AIP Supplement is published in accordance with AIRAC procedures, a Trigger NOTAM shall be originated.

Note.— Detailed specifications concerning the Trigger NOTAM are contained in the MOS-AIS.

15.6.3.2.3 A NOTAM shall be originated and issued concerning the following information:

...

h) occurrence or correction of major defects or impediments in the maneuvering area;

...

m) presence of hazards not otherwise promulgated, which affect air navigation (including obstacles, military exercises and operations, intentional and unintentional radio frequency interferences, rocket launches, displays, fireworks, sky lanterns, rocket debris, races and major parachuting events);

n) conflict zones which affect air navigation (to include information that is as specific as possible regarding the nature and extent of threats of that conflict and its consequences for civil aviation);

Note.— Guidance related to conflict zones is contained in the Risk Assessment Manual for Civil Aircraft Operations Over or Near Conflict Zones (ICAO Doc 10084).

o) planned laser emissions, laser displays and search lights if pilots' night vision is likely to be impaired;

- p) erecting or removal of, or changes to, obstacles to air navigation in the take-off/climb, missed approach, approach areas and runway strip;
- q) establishment or discontinuance (including activation or deactivation) as applicable, or changes in the status of prohibited, restricted or danger areas;
- r) establishment or discontinuance of areas or routes or portions thereof where the possibility of interception exists and where the maintenance of guard on the VHF emergency frequency 121.5 MHz is required;
- s) allocation, cancellation or change of location indicators;
- t) changes in aerodrome/heliport rescue and firefighting category provided (see CAAP MOS-Aerodromes);
- u) presence or removal of, or significant changes in, hazardous conditions due to snow, slush, ice, radioactive material, toxic chemicals, volcanic ash deposition or water on the movement area;
- v) outbreaks of epidemics necessitating changes in notified requirements for inoculations and quarantine measures;
- w) observations or forecasts of space weather phenomena, the date and time of their occurrence, the flight levels where provided and portions of the airspace which may be affected by the phenomena;
- x) an operationally significant change in volcanic activity, the location, date and time of volcanic eruptions and/or horizontal and vertical extent of volcanic ash cloud, including direction of movement, flight levels and routes or portions of routes which could be affected;
- y) release into the atmosphere of radioactive materials or toxic chemicals following a nuclear or chemical incident, the location, date and time of the incident, the flight levels and routes or portions thereof which could be affected and the direction of movement;
- z) establishment of operations of humanitarian relief missions, such as those undertaken under the auspices of the United Nations, together with procedures and/or limitations which affect air navigation; and
- aa) implementation of short-term contingency measures in cases of disruption, or partial disruption, of ATS and related supporting services.

Note 1.— See CAR-ANS Part 11, 11.2.31 and Attachment 11C.

Note 2.— Specifications concerning the timely promulgation of information by NOTAM are contained in Chapter 6 of the MOS-AIS.

15.6.3.3.3 When made available as a completely reissued data set, the differences from the previously issued complete data set should be indicated.

15.6.3.3.4 When temporary changes of short duration are made available as digital data (digital NOTAM), they should use the same aeronautical information model as the complete data set.

“End of Amendment”

- i. Separability Clause.** - If, for any reason, any provision of this Memorandum Circular is declared invalid or unconstitutional, the other part or parts thereof which are not affected thereby shall continue to be in full force and effect.
- ii. Repealing Clause.** - All orders, rules, regulations and issuances, or parts thereof which are inconsistent with this Memorandum Circular are hereby repealed, superseded or modified accordingly.
- iii. Determination of changes.** – To highlight the amendments and/or revisions in the Memorandum Circular, the deleted text shall be shown with strikethrough and the new inserted text shall be highlighted with grey shading, as illustrated below:
 1. Text deleted: ~~Text to be deleted is shown with a line through it.~~
 2. New text inserted: New text is highlighted with grey shading.
 3. New text replacing existing text: ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is highlighted with grey shading.
- iv. Effectivity Clause.** - This Memorandum Circular shall take effect fifteen (15) days following completion of its publication in a newspaper of general circulation or the Official Gazette and a copy filed with the U.P. Law Center - Office of the National Administrative Register. The amendment shall be incorporated to Philippine CAR-ANS in the next regular Amendment Cycle.

So Ordered. Signed this 13 day of October 2020, at the Civil Aviation Authority of the Philippines, MIA Road, Pasay City, Metro Manila, 1301.


CAPTAIN JIM C. SYDIONGCO
Director General