

MEMORANDUM CIRCULAR NO.: 05-15

**TO : ALL CONCERNED**

**FROM : THE DIRECTOR GENERAL**

**SUBJECT : AMENDMENT TO PHILIPPINE CIVIL AVIATION REGULATIONS  
- AIR NAVIGATION SERVICES (CAR-ANS) PART 11  
INCORPORATING AMENDMENT 49 TO ICAO ANNEX 11**

**REFERENCE:**

1. Philippine Civil Aviation Regulations- Air Navigation Services
2. ICAO Annex 11
3. ICAO Annex 11; Amendment 49
4. Regulations Amendment Procedures
5. 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 11 Amendment No. 49 to the Philippine Civil Aviation Regulations – Air Navigation Services (CAR-ANS) Part 11.

**ORIGINAL REGULATION:**

**PART 11.1 – DEFINITIONS**

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**Cyclic redundancy check (CRC).** A mathematical algorithm applied to the digital expression of data that provides a level of assurance against loss or alteration of data.

...

**Integrity (aeronautical data).** A degree of assurance that an aeronautical data and its value has not been lost or altered since the data origination or authorized amendment.

...

**Rescue coordination centre.** A unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region.

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

**State Safety programme.** An integrated set of regulations and activities aimed at improving safety.

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*"The Future is in the Skies"*



## CHAPTER 11.2. GENERAL

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### 11.2.19 Aeronautical data

11.2.19.2 The CAAP shall ensure that integrity of aeronautical data is maintained throughout the data process from survey/origin to the next intended user. Aeronautical data integrity requirements shall be based upon the potential risk resulting from the corruption of data and upon the use to which the data item is put. Consequently, the following classifications and data integrity level shall apply. Based on the applicable integrity classification, the validation procedure shall:

a) critical data, integrity level  $1 \times 10^{-8}$ : there is a high probability when using corrupted critical data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe;

b) essential data, integrity level  $1 \times 10^{-5}$ : there is a low probability when using corrupted critical data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe; and

c) routine data, integrity level  $1 \times 10^{-3}$ : there is a very low probability when using corrupted critical data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe.

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### 11.2.27 Safety management

11.2.27.1 CAAP shall establish a safety program in order to achieve an acceptable level of safety in civil aviation.

*Note. A framework for the implementation and maintenance of a State safety program is contained in Attachment 11D and guidance on a State safety program is contained in the Safety Management Manual (SMM) (Doc 9859).*

11.2.27.2 The acceptable level of safety to be achieved shall be established by the CAAP.

*Note. Guidance on defining an acceptable level of safety is contained in the Safety Management Manual (SMM) (Doc 9859).*

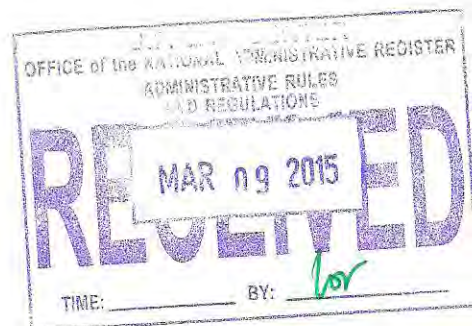
11.2.27.3 CAAP shall require, as part of their State safety program, that an air traffic services provider implement a safety management system acceptable to the CAAP that, as a minimum:

- a) identifies safety hazards;
- b) ensures the implementation of remedial action necessary to maintain agreed safety performance;
- c) provides for continuous monitoring and regular assessment of the safety performance; and
- d) aims at a continuous improvement of the overall performance of the safety management system.

11.2.27.4 A safety management system shall clearly define lines of safety accountability throughout the air traffic service provider, including a direct accountability for safety on the part of senior management.

*Note. - The framework for the implementation and maintenance of a safety management system is contained in Appendix 11.6. Guidance on safety management systems is contained in the ATS Safety Management Systems Manual and associated procedures are contained in the ATS Manual of Operations.*

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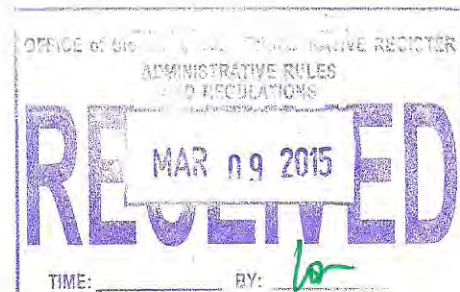
## APPENDIX 11.5. AERONAUTICAL DATA QUALITY REQUIREMENTS

**Table 1. Latitude and longitude**

Latitude and longitude	Accuracy Data type	Integrity classification
Flight information region boundary points.....	2 km declared	1 × 10 <sup>-3</sup> routine
P, R, D areas boundary points (outside CTA/CTR boundaries).....	2 km declared	1 × 10 <sup>-3</sup> routine
P, R, D areas boundary points (inside CTA/CTR boundary) .....	100 m calculated	1 × 10 <sup>-5</sup> essential
CTA/CTR boundary points.....	100 m calculated	1 × 10 <sup>-5</sup> essential
En-route nav aids and fixes, holding, STAR/SID points.....	100 m surveyed/calculated	1 × 10 <sup>-5</sup> essential
Obstacles in Area 1 (the entire State territory).....	50 m surveyed	1 × 10 <sup>-3</sup> routine
Obstacles in Area 2 (the part outside the aerodrome/heliport boundary).....	5 m surveyed	1 × 10 <sup>-5</sup> essential
Final approach fixes/points and other essential fixes/points comprising the instrument approach procedure.....	3 m surveyed/calculated	1 × 10 <sup>-5</sup> essential
...		

**Table 2. Elevation/altitude/height**

Elevation/altitude/height	Accuracy Data type	Integrity classification
Threshold crossing height, precision, approaches.....	0.5 m or 1 ft calculated	1 × 10 <sup>-8</sup> critical
Obstacle clearance altitude/height (OCA/H).....	As specified in PANS-OPS (Doc 8168)	1 × 10 <sup>-5</sup> essential
Obstacles en-route, elevations.....	3 m (10 ft) surveyed	1 × 10 <sup>-3</sup> routine
Distance measuring equipment (DME), elevation.....	30 m (100 ft) surveyed	1 × 10 <sup>-5</sup> essential
Instrument approach procedures altitude.....	As specified in PANS-OPS (Doc 8168)	1 × 10 <sup>-5</sup> essential
Minimum altitudes.....	50 m or 100 ft calculated	1 × 10 <sup>-3</sup> routine





**Table 3. Declination and magnetic variation**

Declination/ variation	Accuracy Data type	Integrity classification
VHF NAVAID station declination used for technical line-up.....	1 degree surveyed	1 × 10 <sup>-5</sup> essential
NDB NAVAID magnetic variation.....	1 degree surveyed	1 × 10 <sup>-3</sup> routine

**Table 4. Bearing**

Bearing	Accuracy Data type	Integrity classification
Airway segments.....	1/10 degree calculated	1 × 10 <sup>-3</sup> routine
En-route and terminal fix formations.....	1/10 degree calculated	1 × 10 <sup>-3</sup> routine
Terminal arrival/departure route segments.....	1/10 degree calculated	1 × 10 <sup>-3</sup> routine
Instrument approach procedure fix formations.....	1/100 degree calculated	1 × 10 <sup>-5</sup> essential

**Table 5. Length/distance/dimension**

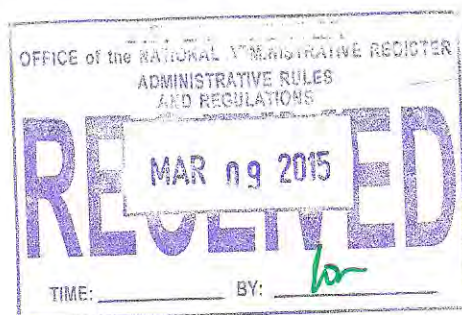
Length/distance/dimension	Accuracy Data type	Integrity classification
Airway segments.....	1/10 km or 1/10 NM calculated	1 × 10 <sup>-3</sup> routine
En-route fix formations distance.....	1/10 km or 1/10 NM calculated	1 × 10 <sup>-3</sup> routine
Terminal arrival/departure route segments length.....	1/100 km or 1/100 NM calculated	1 × 10 <sup>-5</sup> essential
Terminal and instrument approach procedure Fix formations distance.....	1/100 km or 1/100 NM calculated	1 × 10 <sup>-5</sup> essential

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**APPENDIX 11.6. FRAMEWORK FOR SAFETY AMANAGEMENT SYSTEMS (SMS)**

(See 11.2.27.4)

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**ATTACHMENT 11D. – FRAMEWORK FOR THE STATE SAFETY PROGRAMME  
(SSP)**

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**AMENDED REGULATION:**

**PART 11.1 – DEFINITIONS**

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***Cyclic redundancy check (CRC).*** A mathematical algorithm applied to the digital expression of data that provides a level of assurance against loss or alteration of data.

***Danger area.*** An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times.

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***Integrity (aeronautical data).*** A degree of assurance that an aeronautical data and its value has not been lost or altered since the data origination or authorized amendment.

***Integrity classification (aeronautical data).*** Classification based upon the potential risk resulting from the use of corrupted data. Aeronautical data is classified as:

a) routine data: there is a very low probability when using corrupted routine data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe;

b) essential data: there is a low probability when using corrupted essential data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe; and

c) critical data: there is a high probability when using corrupted critical data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe.

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***Printed communications.*** Communications which automatically provide a permanent printed record at each terminal of a circuit of all messages which pass over such circuit.

***Prohibited area.*** An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited.

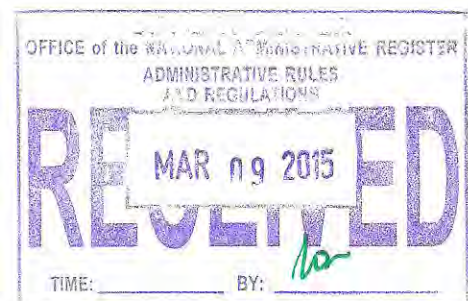
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***Rescue coordination centre.*** A unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region.

***Restricted area.*** An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions.

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





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## CHAPTER 11.2. GENERAL

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### 11.2.19 Aeronautical data

11.2.19.2 The CAAP shall ensure that integrity of aeronautical data is maintained throughout the data process from survey/origin to the next intended user. Based on the applicable integrity classification, the validation procedure shall:

- a) for routine data: avoid corruption throughout the processing of the data;
- b) for essential data: assure corruption does not occur at any stage of the entire process and may include additional processes as needed to address potential risks in the overall system architecture to further assure data integrity at this level; and
- c) for critical data: assure corruption does not occur at any stage of the entire process and include additional integrity assurance procedures to fully mitigate the effects of faults identified by thorough analysis of the overall system architecture as potential data integrity risks.

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### 11.2.27 Safety management

*Note.* – Annex 19 includes the safety management provisions applicable to ATS providers. Further guidance is contained in the Safety Management Manual (SMM) (Doc 0959) and associated procedures are contained in the PANS-ATM (Doc 4444).

11.2.27.1 Any significant safety-related change to the ATS system, including the implementation of a reduced separation minimum or a new procedure, shall only be effected after a safety assessment has demonstrated that an acceptable level of safety will be met and users have been consulted. When appropriate, the responsible authority shall ensure that adequate provision is made for post-implementation monitoring to verify that the defined level of safety continues to be met.

*Note.* - When, due to the nature of the change, the acceptable level of safety cannot be expressed in quantitative terms, the safety assessment may rely on operational judgment.

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### 11.2.32 Identification and delineation of prohibited, restricted and danger areas.

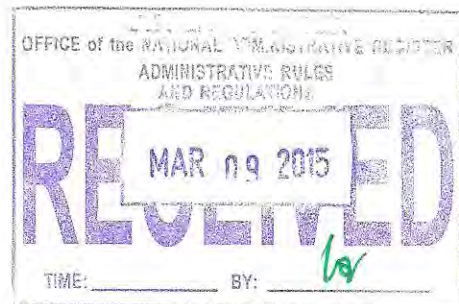
11.2.32.1 Each prohibited area, restricted area, or danger area established by a State shall, upon initial establishment, be given an identification and full details shall be promulgated.

*Note.*— See CAR-ANS Part 15, Appendix 15A, ENR 5.1.

11.2.32.2 The identification so assigned shall be used to identify the area in all subsequent notifications pertaining to that area.

11.2.32.3 The identification shall be composed of a group of letters and figures as follows:

- a) nationality letters for location indicators assigned to the state or territory which has established the airspace.
- b) A letter P for prohibited area, R for restricted area and D for danger area as appropriate; and



c) A number, unduplicated within the State or territory concerned.

*Note.— Nationality letters are those contained in Location Indicators (Doc 7910).*

11.2.32.4 To avoid confusion, identification numbers shall not be reused for a period of at least one year after cancellation of the area to which they refer.

11.2.32.5 *When a prohibited, restricted or danger area is established, the area should be as small as practicable and be contained within simple geometrical limits, so as to permit ease of reference by all concerned.*

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## APPENDIX 11.5. AERONAUTICAL DATA QUALITY REQUIREMENTS

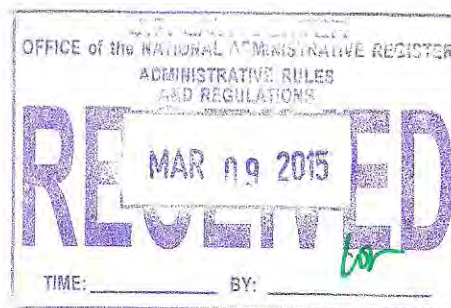
**Table 1. Latitude and longitude**

Latitude and longitude	Accuracy Data type	Integrity classification
Flight information region boundary points.....	2 km declared	routine
P, R, D area boundary points (outside CTA/CTR boundaries).....	2 km declared	routine
P, R, D area boundary points (inside CTA/CTR boundary) .....	100 m calculated	essential
CTA/CTR boundary points.....	100 m calculated	essential
En-route nav aids and fixes, holding, STAR/SID points.....	100 m surveyed/calculated	essential
Obstacles in Area 1 (the entire State territory).....	50 m surveyed	routine
Obstacles in Area 2 (the part outside the aerodrome/heliport boundary).....	5 m surveyed	essential
Final approach fixes/points and other essential fixes/points comprising the instrument approach procedure.....	3 m surveyed/calculated	essential

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**Table 2. Elevation/altitude/height**

Elevation/altitude/height	Accuracy Data type	Integrity classification
Threshold crossing height (Reference datum height), precision approaches.....	0.5 m calculated	critical
Obstacle clearance altitude/height (OCA/H).....	As specified in PANS-OPS (Doc 8168)	essential





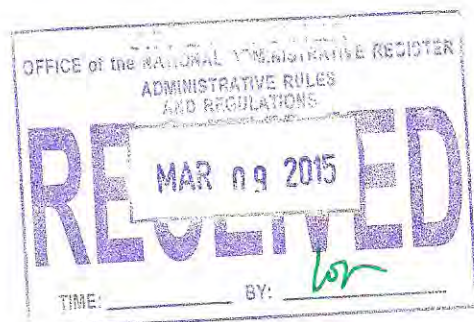
Obstacles in Area 1 (the entire State territory), elevations.....	30 m surveyed	routine
Obstacles in Area 2 (the part outside the aerodrome/heliport boundary),.....	3 m surveyed	essential
Distance measuring equipment (DME), elevation.....	30 m (100 ft) surveyed	essential
Instrument approach procedures altitude.....	As specified in PANS-OPS (Doc 8168)	essential
Minimum altitudes.....	50 m calculated	routine

**Table 3. Declination and magnetic variation**

Declination/ variation	Accuracy Data type	Integrity classification
VHF NAVAID station declination used for technical line-up.....	1 degree surveyed	essential
NDB NAVAID magnetic variation.....	1 degree surveyed	routine

**Table 4. Bearing**

Bearing	Accuracy Data type	Integrity classification
Airway segments.....	1/10 degree calculated	routine
Bearing used for the formation of an en-route and of a terminal fix .....	1/10 degree calculated	routine
Terminal arrival/departure route segments.....	1/10 degree calculated	routine
Bearing used for the formation of an instrument approach procedure fix .....	1/100 degree calculated	essential





**Table 5. Length/distance/dimension**

Length/distance/dimension	Accuracy Data type	Integrity classification
Airway segments.....	1/10 km calculated	routine
Distance used for the formation of an en-route fix.....	1/10 km calculated	routine
Terminal arrival/departure route segments length.....	1/100 km calculated	essential
Distance used for the formation of a terminal and instrument approach procedure fix.....	1/100 km calculated	essential

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(Deleted in toto Appendix 11.6. FRAMEWORK FOR SAFETY MANAGEMENT SYSTEMS (SMS) of CAR-ANS Part 11)

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(Deleted in toto ATTACHMENT 11D. FRAMEWORK FOR STATE SAFETY PROGRAMME SYSTEMS (SSP) of CAR-ANS Part 11)

**EFFECTIVITY CLAUSE:**

This amendment shall be added to the PCAR-ANS Part 11, series of 2015 and shall take effect immediately and shall supersede any other memoranda, regulations, and directives in conflict with this provision after compliance with the requisite single newspaper publication and a copy filed with the U.P. Law Center - Office of the National Administrative Register.

So ordered. Signed this 05 day of MAR 2015, CAAP, Pasay City.



**LT GEN WILLIAM K HOTCHKISS III AFP (Ret)**

