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S. I. No.	*Short Title*	*Page*
5	Civil Aviation Order (CAO) NCAA/CAO/2025/001	B313-371

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CIVIL AVIATION ORDER (CAO)
NCAA/CAO/2025/001

CLOSURE OF GAPS BETWEEN NIG.CARS 2023 AND LATEST ICAO ANNEXES AS AT NOVEMBER 2025

[27*th Day of November*, 2025]

PURSUANT TO THE POWERS VESTED ON THE DIRECTOR-GENERAL BY SECTIONS 31(3) AND 32 (1)(F) OF THE CIVIL AVIATION ACT 2022, THE NIGERIA CIVIL AVIATION AUTHORITY (NCAA) HEREBY ISSUES CIVIL AVIATION ORDER NCAA/CAO/2025/001

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Preamble

1.0—*i.* WHEREAS the Nigeria Civil Aviation Regulations (Nig. CARs 2023) issued in May 2023 ;

ii. WHEREAS the Nig. CARs 2023 was promulgated to correspond with the International Civil Aviation standards published by the International Civil Aviation Organisation (ICAO) ; and

iii. WHEREAS the Authority has deemed it necessary to amend the Nigeria Civil Aviation Regulations (Nig. CARs 2023) to include recent adoptions, omissions, wordings and intent of the Standards and Recommended Practices SARPs.

Record of Amendments

2.0

Rev. No	Date of Revision	Sections Affected	Reason for Changes
Rev. 00	20-11-2025		Initial Issue

Amend-ment Procedure

3.0—*i.* The Regulation Committee is responsible for amendment of this document.

ii. All requests for amendment shall be sent to info@ncaa.gov.ng / regulations.committee@ncaa.gov.ng and attention Chairman Regulations Committee.

iii. All amendments will be issued as a new revision to the whole Order. Text of changes will be highlighted in grey.

List of Effective Page

4.0

Page	Rev. No.	Date
All	00	20-11-2025

5.0 ACRONYMS

Nil

6.0 DEFINITIONS

Nil

7.0 MAIN TEXT OF THE ORDER INCLUDING ANY IMPLEMENTING STANDARDS AS APPLICABLE (*Note* : The numbering below is as per and starts with the applicable sections of the Nig.CARs affected by this order)

PART 1 — GENERAL POLICIES, PROCEDURES AND DEFINITIONS

Record of Amendments

Nigeria Civil Aviation Regulations Parts	Amendment Status	Date of amendment (MM/YYYY)	Remarks
Part 1 — General Policies, Procedures and Definitions	6	November, 2025	Updated to latest amendment of applicable ICAO annexes
Part 2 — Personnel Licensing	4	April, 2023	Updated to latest amendment of applicable ICAO annexes
Part 3 — Approved Training Organization	4	April, 2023	Updated to latest amendment of applicable ICAO annexes
Part 4 — Aircraft Registration and Marking ;	4	April, 2023	Updated to latest amendment of applicable ICAO annexes
Part 5 — Airworthiness	4	April, 2023	Updated to latest amendment of applicable ICAO annexes
Part 6 — Approved Maintenance Organization	4	April, 2023	Updated to latest amendment of applicable ICAO annexes
Part 7 — Instrument and Equipment	4	April, 2023	Updated to latest amendment of applicable ICAO annexes
Part 8 — Operations	5	November, 2025	Updated to latest amendment of applicable ICAO annexes
Part 9 — Air Operator Certification and Administration	5	November, 2025	Updated to latest amendment of applicable ICAO annexes
Part 10 — Commercial Air Transport by Foreign Air Operators within Nigeria	4	April, 2023	Updated to latest amendment of applicable ICAO annexes
Part 11 — Aerial Works ;	4	April, 2023	Updated to latest amendment of applicable ICAO annexes
Part 12 — Volume I (Aerodrome) ;	5	November, 2025	Updated to latest amendment of applicable ICAO annexes
Part 12 — Volume II (Heliport) ;	4	April, 2023	Updated to latest amendment of applicable ICAO annexes
Part 14 — Air Navigation Services Subparts 0 to 7	5	November, 2025	Updated to latest amendment of applicable ICAO annexes

PART 1 — GENERAL POLICIES, PROCEDURES AND DEFINITIONS—*Continued*

Record of Amendments

Nigeria Civil Aviation Regulations Parts	Amendment Status	Date of amendment (MM/YYYY)	Remarks
Part 15 — The Safe Transport of Dangerous Goods by Air	5	November, 2025	Updated to latest amendment of applicable ICAO annexes
Part 16 — Environmental Protection — Carbon Offsetting and Reduction Scheme for	4	April, 2023	Applicable provisions of ICAO Annex 16 Vol.I-III moved to Part 5
Part 17 — Aviation Security	4	April, 2023	Updated to latest amendment of applicable ICAO annexes
Part 18 — Air Transport Economic	4	April, 2023	Updated to latest amendment of applicable ICAO annexes
Part 19 — Consumer Protection;	4	April, 2023	Updated to latest amendment of applicable ICAO annexes
Part 20 — Safety Management	4	April, 2023	Updated to latest amendment of applicable ICAO annexes
Part 21— Remotely Piloted Aircraft System	4	April, 2023	NEW. Provisions of RPAS in Nig.CARs 2015 deleted from Part 8
NCAA Schedule of Fees and Charges	4	November, 2025	NEW. Supersedes Nig.CARs 2009 Schedule

STATUS OF COMPLIANCE WITH ICAO SARPS		
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1	Personnel Licensing	179
2	Rules of the air	48
3	Meteorological Service For International Air Navigation, Part I — Core Sarps	82
4	Aeronautical Charts	62
5	Units of Measurement to be Used in Air and Ground Operations	17
6	Operation of Aircraft, Part I International Commercial Air Transport — Aeroplanes	50
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10	Aeronautical Telecommunications, Volume I Radio Navigation Aids	94
10	Aeronautical Telecommunications, Volume II — Communication Procedures Including Those With Pans Status	94
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10	Aeronautical Telecommunications, Volume IV — Surveillance Radar And Collision Avoidance Systems	91
10	Aeronautical Telecommunications, Volume V — Aeronautical Radio Frequency Spectrum Utilization	91
10	Aeronautical Telecommunications, Volume VI — Communication Systems and Procedures Relating to Remotely Piloted Aircraft Systems C2 Link	First Edition Applicable:26 November 2026

STATUS OF COMPLIANCE WITH ICAO SARPS		
Annex Number	**ICAO Annex Title**	**Annex Amendment Status**
11	Air Traffic Services	54
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Abbreviations

1.1.1.4. — (a) The following abbreviations have been added this part

ADG Aeroplane design group

ARIWS Autonomous Runway Incursion Warning System

CBR California bearing ratio

CIE Commission Internationale de l'Eclairage

CRC Cyclic redundancy check

GBAS Ground-based augmentation system

GHSP Ground handling service provider

GSE Ground support equipment

LCFZ Laser-beam Critical flight zone

LFFZ Laser-beam free flight zone

LSFZ Laser-beam sensitive flight zone

NFZ Normal flight zone

OES Obstacle evaluation surfaces

OFS Obstacle free surfaces

RDRS Runway distance remaining sign

RFF Rescue and fire fighting

SBAS Satellite-based augmentation system

ULD Unit load device

V_{at} Indicated airspeed at threshold

V_{so} Stalling speed or the minimum steady flight speed in the landing configuration

V_{s1g} Stalling speed or the minimum steady flight speed in a specified configuration

1.5 *Definitions* is amended to include these definitions

1. *Intermediate system (IS)* means A system which performs relaying and routing functions and comprises the lowest three layers of the OSI reference model.

2. *Multilink* means The ability to use more than one available air-ground subnetworks in order to provide the required performance.

3. *Router* means A router is a node that forwards Internet protocol (IP) packets not explicitly addressed to itself.

A router manages the relaying and routing of data while in transit from an originating end system to a destination end system

4. *Metadata* means Data about data (ISO 19115*).

Note — A structured description of the content, quality, condition or other characteristics of data.

5. *Meteorological authority* means The entity arranging for the provision of meteorological service for international air navigation on behalf of a Contracting State, and providing regulation and oversight of the meteorological service.

6. *Meteorological service provider* means The relevant entity designated to provide meteorological service for international air navigation on behalf of a Contracting State.

7. *WAIC component* means Any tangible entity of a WAIC network on board an aircraft.

8. *WAIC network* means A network comprised of interrelated WAIC components, such as components used for wireless communications, security or network management.

9. *WAIC system* means A system which provides wireless communications between points on board a single aircraft. A WAIC system may be comprised of one or more WAIC networks necessary for establishing, maintaining and securing wireless communications. A WAIC system consists of interrelated sets of WAIC components on board the same aircraft, so that a single aircraft contains only a single WAIC system.

10. *Wireless Avionics Intra-Communications (WAIC)* means Radiocommunication between two or more aircraft stations located on board a single aircraft for aircraft applications supporting the safe operation of the aircraft.

11. *Ground handling* means Services necessary for an aircraft's arrival at, and departure from, an airport, other than air traffic services.

PART 2 — PERSONNEL LICENSING

2.3.1.5(c) *is amended to read thus*

Notwithstanding the requirements of 2.3.1.5(a) any person above the age of 65 years who holds a pilot license issued under this part may continue to serve as a flight crew member on civil aircraft of Nigeria registry provided :

(1) Flights are restricted to general aviation operations and/or flight instructional purposes in approved aviation training organizations within Nigeria only;

(2) the person holds a valid Class 1 medical certificate;

(3) the person complies with any other restrictions the Authority may impose;

PART 4 — AIRCRAFT REGISTRATION AND MARKING

4.2.1.2. *is amended to read thus :*

(*a*) An aircraft is eligible for registration if it is —

(3) The aircraft —

(*i*) Is not more than 22years old for scheduled commercial air transport (CAT) passenger category ;

(*ii*) Is not more than 25 years old for non-scheduled commercial air transport (CAT) passenger category

(*iii*) Is not more than 30 years old commercial air transport (CAT) cargo category

(*iv*) meets ICAO Annex 16 volume 1 chapter 4 noise requirements or ICAO Annex 16 volume 1 chapter 8 noise requirements as contained in IS 5.10.1.2 (B) of Part 5 of Nig.CARs 2023, unless the aircraft is used exclusively for general aviation and/or aerial works.

PART 5 — AIRWORTHINESS

5.8.1.11 *is amended to read thus* : *Privileges of the organisation*

a) An approved continuing airworthiness management organisation, may :

(1) manage the continuing airworthiness of aircraft except those used by air operator certificate holders, as listed on its approval certificate.

(2) manage the continuing airworthiness of aircraft used by air operator certificate holders when listed both on its approval certificate and on its air operator certificate

PART 8 — OPERATIONS

8.5.1.21 *Reporting of Hazardous Conditions*

8.5.1.21 (b) *is amended to include*

Note : The procedure for making meteorological observations on board aircraft in flight and for recording and reporting them are contained in Annex 3, the PANS-ATM (DOC 4444), the PANS-MET (Doc 10157) and the appropriate Regional Supplementary Procedures (DOC 7030).

PART 9 — AIR OPERATOR CERTIFICATION AND ADMINISTRATION

9.1.1.6 *is amended to read thus :*

(*b*) The Authority may deny an application for an AOC if it determines that : …….

(2) The applicant does not have : (i) for scheduled operation, at least two (2) Nigerian registered airworthy aircraft capable of servicing its approved routes at any given time.

9.4.1.1 *is amended to read thus : Applicability*

(*a*) This subpart provides those certification and continuing airworthiness requirements that apply to an AOC holder certificated as a CAMO under Part 5 of these regulations utilising an AMO or maintenance authorization.

Note : For an AOC holder, the CAMO approval forms part of the Air Operator Certificate and Operations Specifications as stated in subsection.

5.8.1.3(b) of Part 5 of these regulations

9.4.1.2 *is amended to read thus : Continuing Airworthiness Responsibility*

(*a*) Each AOC holder shall be certificated as a CAMO in accordance with Part 5.8 of these regulations and shall ensure the airworthiness of the aircraft and the serviceability of both operational and emergency equipment by ensuring the :

(1) Accomplishment of pre-flight inspections;

(2) Correction of any defect and/or damage affecting safe operation of an aircraft to an approved standard, taking into account the MEL and CDL if available for the aircraft type ;

(3) Accomplishment of all maintenance in accordance with the operator's approved aircraft maintenance programme ;

(4) Analysis of the effectiveness of the operator's approved aircraft maintenance programme ;

(5) Accomplishment of any operational directive, AD, and any other continuing airworthiness requirement made mandatory by the Authority; and

(6) Accomplishment of modifications in accordance with an approved standard and, for non-mandatory modifications, the establishment of an embodiment policy.

9.4.1.3 *is amended to read thus : Approval and Acceptance of AOC Maintenance Systems and Programmes*

(*b*) Until 31st December 2026, the AOC holder shall not operate an aircraft registered in Nigeria unless it is maintained and returned to service by an organisation approved in accordance with Part 6 of these regulations, or under a maintenance authorization either of which shall be acceptable to the State of Registry.

(*c*) As of 31st December 2026, each AOC holder conducting scheduled flight operation shall not operate an aircraft registered in Nigeria unless it is maintained and returned to service by an organisation approved in accordance with Part 6 of these regulations.

(*d*) As of 31st December 2026, each AOC holder conducting non-scheduled flight operation shall not operate an aircraft unless it is maintained and returned to service by an organisation approved in

accordance with Part 6 of these regulations, or under a maintenance authorization, either of which shall be acceptable to the State of Registry.

(1) Where the AOC holder conducting non-scheduled flight operation is approved to perform maintenance under a maintenance authorization, such approval shall be limited to line maintenance only.

9.4.1.5 *is amended to read thus : Continuing Airworthiness Management*

(*a*) The AOC holder certificated as a CAMO in accordance with Part 5 and as an AMO in accordance with Part 6, may carry out the requirements specified in paragraphs 9.4.1.2(a)(2), (3), (5), and (6) of this part.

(*b*) An AOC holder that is certificated as a CAMO in accordance with Part 5 and not certificated as an AMO in accordance with Part 6, the AOC holder shall meet its responsibilities under paragraphs 9.4.1.2(a) (2), (3), (5), and (6) of this part :

(1) Until 31st December 2026, by using a maintenance authorization approved or maintenance system accepted by the Authority ; or

(2) Through an arrangement with an AMO, with a written maintenance contract between the AOC holder and the contracting AMO detailing the required maintenance functions and defining the support of the quality functions approved or accepted by the Authority.

9.4.1.11 *is amended to read thus : Modifications and Repairs*

(*c*) Until 31st December 2026, an AOC holder using a maintenance system acceptable to the Authority that wishes to approve for return to service, after major repairs or major modifications, an airframe, powerplant, propeller and appliance registered in Nigeria shall use a current and valid licensed AME with an airframe and powerplant rating and shall be qualified in accordance with Part 2 of these regulations.

PART 12 VOL.1 — AERODROME REGULATIONS

12.2.3 Physical Characteristics Runway strips Width of runway strips

12.2.3.4 (e) (*amended to read*). A strip including a non-instrument runway shall extend on each side of the centre line of the runway and its extended centre line throughout the length of the strip, to a distance of at least :

- 75 m where the code number is 4 ;
- 55 m where the code number is 3 ;

- 40 m where the code number is 2 ; and

- 30 m where the code number is 1.

Grading of runway strips

12.2.3.4 (i) (*amended to read*). That portion of a strip of a non-instrument runway within a distance of at least :

- 75 m where the code number is 4 ;

- 55 m where the code number is 3 ;

- 40 m where the code number is 2 ; and

- 30 m where the code number is 1 ;

from the centre line of the runway and its extended centre line shall provide a graded area for aeroplanes which the runway is intended to serve in the event of an aeroplane running off the runway.

Strength of runway strips

12.2.3.4(r) (*amended to read*). That portion of a strip containing a non-instrument runway within a distance of at least :

75 m where the code number is 4 ;

55 m where the code number is 3 ;

40 m where the code number is 2 ; and

30 m where the code number is 1 ;

from the centre line of the runway and its extended centre line shall be so prepared or constructed as to minimize hazards arising from differences in load-bearing capacity to aeroplanes which the runway is intended to serve in the event of an aeroplane running off the runway.

Table 3-1. Taxiway minimum separation distances

Code Letter	Distance between taxiway centre line and runway centre line (metres)								Taxiway centre line to taxiway centre line (meters)	Taxiway, other than aircraft stand taxilane, centre line to object (meters)	Aircraft stand taxilane centre line to aircraft stand taxilane centre line (metres)	Aircraft stand taxilane centre line to object (metres)
	Instrument runways Code Number				Non-Instrument runways Code Number							
	1	2	3	4	1	2	3	4				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
A	77.5	77.5	-	-	37.5	37.5	-	-	23	15.5	19.5	12
B	82	82	152	-	42	52	67	-	32	20	28.5	16.5
C	88	88	158	158	48	58	73	93	44	26	40.5	22.5
D	-	-	166	166	-	-	81	101	63	37	59.5	33.5
E	88	88	158	158	-	-	87.5	107.5	76	43.5	72.5	40
F	-	-	180	180	-	-	95	115	91	51	87.5	47.5

12.2.3.11(d) (*amended to read*) : The centre portion of a taxiway strip shall provide a graded area to a distance from the centre line of the taxiway of not less than that given by the following tabulation :

-10.25m where the OMGWS is up to but not including 4.5m ;

-11m where the OMGWS is 4.5 m up to but not including 6m ;

-12.50m where the OMGWS is 6 m up to but not including 9m ;

-17m where the OMGWS is 9 m up to but not including 15m, where the code letter is D ;

-19m where the OMGWS is 9m up to but not including 15m, where the code letter is E ;

- 22 m where the OMGWS is 9 m up to but not including 15 m, where the code letter is F.

Note : Guidance on width of the graded portion of a taxiway is given in the ICAO Aerodrome Design Manual (Doc 9157), Part 2.

12.2.3.12 Holding bays, runway-holding positions, intermediate holding positions and road-holding positions

Table 3-2. Minimum distance from the runway centre line to a holding bay, runway-holding position or road-holding position

	Code Number			
Type of runway	1	2	3	4
Non-instrument	30m	40m	55m	75m
Non-precision approach	40m	40m	75m	75m
Precision approach category I	60m[b]	60m[b]	90m[ab]	90m[ab]
Precision approach categories II and III	—	—	90m[ab]	90m[ab]
Take-off runway	30m	40m	55m	75m

12.2.3.13 APRONS

12.2.3.13(a) (*amended to read*) : Aprons shall be provided where necessary to permit the on- and off-loading of passengers, cargo or mail as well as the servicing of aircraft without interfering with the aerodrome traffic.

12.2.3.13(b) (*amended to read*) : The design of aprons shall take into consideration criteria for safe ground handling, including :

(a) sufficient space between aircraft stands to enable personnel and equipment to move safely and efficiently ;

(b) adequate apron markings, apron signs and apron floodlighting ;

(c) adequate staging and storage areas for ground support equipment (GSE) ;

(d) positioning of fixed ground services ;

(e) storage areas for unit load devices (ULD) ;

(*f*) adequate access and egress routes for fuel, GSE and emergency vehicles ;

(*g*) clearly delineated and visible access and egress routes for passengers ;

(*h*) new technologies (electric charging points, autonomous vehicles, etc.) ;

(*i*) avoidance of rear of aircraft stand service roads wherever practicable ; and

(*j*) appropriate protection for persons, equipment and infrastructure from jet blast and propeller wash.

Note : Further guidance on apron design and markings is given in the ICAO Aerodrome Design Manual (Doc 9157), Part 4 Visual Aids, and the ICAO Airport Planning Manual (Doc 9184), Part 1 Master Planning.

Size of aprons

12.2.3.13(c) (*amended to read*) : The total apron area shall be adequate to permit safe and expeditious handling of the aerodrome traffic at its maximum anticipated density.

Strength of aprons

12.2.3.13(d) (*amended to read*) : Each part of an apron shall be capable of withstanding the traffic of the aircraft it is intended to serve, due consideration being given to the fact that some portions of the apron will be subjected to a higher density of traffic and, as a result of slow moving or stationary aircraft, to higher stresses than a runway.

Slopes on aprons

12.2.3.13(e) (*amended to read*) : Slopes on an apron, including those on an aircraft stand taxi lane, shall be sufficient to prevent accumulation of water on the surface of the apron but shall be kept as level as drainage requirements permit.

12.2.3.13(f) (*amended to read*)

On an aircraft stand the maximum slope shall not exceed 1 per cent.

Clearance distances on aircraft stands

12.2.3.13(g) (*amended to read*) : An aircraft stand shall provide the following minimum clearances between an aircraft entering or exiting the stand and any adjacent building, aircraft on another stand and

Code letter	Clearance
A	3 m
B	3 m
C	4.5 m
D	7.5 m
E	7.5 m
F	7.5 m

When special circumstances so warrant, these clearances may be reduced at a nose-in aircraft stand,

where the code letter is D, E or F :

(*a*) between the terminal, including any fixed passenger boarding bridge, and the nose of an aircraft ;

and

(*b*) over any portion of the stand provided with azimuth guidance by a visual docking guidance system.

12.2.5.2 MARKINGS

Visual Aids For Navigation

12.2.5.2(d) THRESHOLD MARKING

12.2.5.2(d)(1) (*amended to read*) A threshold marking shall be provided at the threshold of a paved runway.

12.2.5.2(P) MANDATORY INSTRUCTION MARKING

Location

12.2.5.2(P)(3), (*amended to read*) : The mandatory instruction marking on taxiways where the OMGWS is up to but not including 9 m shall be located across the taxiway equally placed about the taxiway centre line and on the holding side of the runway-holding position marking as shown in Figure 5-10 (A). The distance between the nearest edge of the marking and the runway-holding position marking or the taxiway centre line marking shall be not less than 1m.

12.2.5.2(P)(4), (*amended to read*) : The mandatory instruction marking on taxiways where the OMGWS from 9 m up to but not including 15 m shall be located on both sides of the taxiway centre line marking and on the holding side of the runway-holding position marking as shown in Figure 5-10 (B). The distance between the nearest edge of the marking and the runway-holding position marking or the taxiway centre line marking shall be not less than 1m.

Characteristics

12.2.5.2(P)(9), (*amended to read*) : The character height shall be 4m for inscriptions where the OMGWS is from 6 m up to but not including 15m, and 2m where the OMGWS is up to but not including 6 m. The inscriptions shall be in the form and proportions shown in Appendix 3.

12.2.5.3 LIGHTS

12.2.5.3(a) GENERAL

Light intensity and control

(*amended to read*) *Note* : In dusk or poor visibility conditions by day, lighting can be more effective than marking. For lights to be effective in such conditions or in poor visibility by night, they must be of adequate intensity. To obtain the required intensity, it will usually be necessary to make the light directional, in which case the arcs over which the light shows will have to be

adequate and so orientated as to meet the operational requirements. The runway lighting system will have to be considered as a whole, to ensure that the relative light intensities are suitably matched to the same end and are maintained over time. (See Attachment A, Section 15, on intensity. Guidance on maintenance criteria for aeronautical ground lights and on the use of a site standard is contained in the ICAO Aerodrome Design Manual (Doc 9157), Part 4).

Location

12.2.5.3(l) RUNWAY CENTRE LINE LIGHTS

12.2.5.3(l)(5) (*amended to read*) : Runway centre line lights shall be located along the centre line of the runway, except that the lights may be uniformly offset to the same side of the runway centre line by not more than 60 cm where it is not practicable to locate them along the centre line. The lights shall be located from the threshold to the end at longitudinal spacing of approximately 15 m. Where the serviceability level of the runway centre line lights specified as maintenance objectives in 12.2.10.5(g) or 12.2.10.5(k), as appropriate, can be demonstrated and the runway is intended for use in runway visual range conditions of 300m or greater, the longitudinal spacing may be approximately 30m.

12.2.5.3 (q) TAXIWAY CENTRE LINE LIGHTS

Application

12.2.5.3(q)(1), (*amended to read*) : Taxiway centre line lights shall be provided on an exit taxiway, taxiway, de-icing/anti-icing facility and apron intended for use in runway visual range conditions less than a value of 300m in such a manner as to provide continuous guidance between the runway centre line and aircraft stands, except that these lights need not be provided where the traffic density is light and taxiway edge lights and centre line marking provide adequate guidance.

12.2.5.3(q)(2), (*amended to read*) : Taxiway centre line lights shall be provided on a taxiway intended for use at night in runway visual range conditions of 300m or greater, and particularly on complex taxiway intersections and exit taxiways, except that these lights need not be provided where the traffic density is light and taxiway edge lights and centre line marking provide adequate guidance.

12.2.5.3(q)(4), (*amended to read*) : Taxiway centre line lights shall be provided on a runway forming part of a standard taxi-route and intended for taxiing in runway visual range conditions less than a value of 300m, except that these lights need not be provided where the traffic density is light and taxiway edge lights and centre line marking provide adequate guidance.

12.2.5.3(q)(9), (*amended to read*) : Taxiway centre line lights shall be in accordance with the specifications of :

(*a*) Appendix 2, Figure A2-12, A2-13, or A2-14, for taxiways intended for use in runway visual range conditions of less than a value of 300m; and

(*b*) Appendix 2, Figure A2-15 or A2-16, for other taxiways.

12.2.5.3(q)(10), (*amended to read*) : Where higher intensities are required, from an operational point of view, taxiway centre line lights on rapid exit taxiways intended for use in runway visual range conditions less than a value of 300m shall be in accordance with the specifications of Appendix 2, Figure A2 -12. The number of levels of brilliancy settings for these lights shall be the same as that for the runway centre line lights.

Taxiway centre line lights on taxiways

12.2.5.3(q)(13), (*amended to read*) : Taxiway centre line lights on a straight section of a taxiway shall be spaced at longitudinal intervals of not more than 30 m, except that : Location

(*c*) on a taxiway intended for use in RVR conditions of less than a value of 300 m, the longitudinal spacing shall not exceed 15m.

12.2.5.3(q)(15), (*amended to read*) : On a taxiway intended for use in RVR conditions of less than a value of 300m, the lights on a curve shall not exceed a spacing of 15 m, and on a curve of less than 400 m radius the lights shall be spaced at intervals of not greater than 7.5m. This spacing shall extend for 60m before and after the curve.

Note 1 : Spacings on curves that have been found suitable for a taxiway intended for use in RVR conditions of 300m or greater are :

Curve radius	**Light spacing**
up to 400m	7.5m
401 m to 899m	15m
900 m or greater	30m

Taxiway centre line lights on runways

12.2.5.3(q)(20), (*amended to read*) : Taxiway centre line lights on a runway forming part of a standard taxi-route and intended for taxiing in runway visual range conditions less than a value of 300m shall be spaced at longitudinal intervals not exceeding 15m. Location

12.2.5.3(s) Runway turn pad Lights

12.2.5.3(s)(1), (*amended to read*) : Runway turn pad lights shall be provided for continuous guidance on a runway turn pad intended for use in runway visual range conditions less than a value of 300m, to enable an aeroplane to complete a 180-degree turn and align with the runway centre line. Application

12.2.5.3(u) Intermediate Holding Position Lights

Application **12.2.5.3(u)(1)**, (*amended to read*) : Except where a stop bar has been installed, intermediate holding position lights shall be provided at an intermediate holding position intended for use in runway visual range conditions less than a value of 300m.

12.2.5.3 (y) Visual Docking Guidance System

Application **12.2.5.3(y)(1)**, (*amended to read*) : A visual docking guidance system shall be provided when it is intended to indicate, by a visual aid, the precise positioning of an aircraft on an aircraft stand and other alternative means, such as marshallers, are not practicable.

Note : The factors to be considered in evaluating the need for a visual docking guidance system are in particular : the number and type(s) of aircraft using the aircraft stand, weather conditions, space available on the apron and the precision required for manoeuvring into the parking position due to aircraft servicing installation, passenger boarding bridges, etc. See the ICAO Aerodrome Design Manual. (Doc 9157), Part 4 Visual Aids for guidance on the selection of suitable systems.

Characteristics **12.2 5.3(y)(6)** (*amended to read*) : The accuracy of the system shall be adequate for the type of loading passenger boarding bridge and fixed aircraft servicing installations with which it is to be used.

12.2.5.3(ab) Road-holding position light

12.2.5.3(ab) (1) (*amended to read*) : A road-holding position light shall be provided at each road-holding position serving a runway when it is intended that the runway will be used in runway visual range conditions less than a value of 300m.

12.2.5.4 Signs

Characteristics **12.2.5.4(a)(3)** (*amended to read*) : Signs shall be frangible. Those located near a runway or taxiway shall be sufficiently low to preserve clearance for propellers and the engine pods of jet aircraft. The installed height of the sign shall not exceed the dimension shown in the appropriate column of Table 5-5., except for runway distance remaining signs (see 12.2.5.4(h)).

12.2.5.4.(a)(4) (*amended to read*) : Mandatory instruction signs and information signs shall be rectangular, as shown in Figures 5-30 and 5-31 with the longer side horizontal.

12.2.5.4 Information signs

12.2.5.4(c) (*amended to read*)

Note 1 : See Figure 5-31 for pictorial representations of information signs.

Note 2 : See 12.2.7, 12.2.7.4(c) for specifications related to unserviceability signs providing information on operational restrictions and construction works at aerodromes.

12.2.5.4(h) Runway distance remaining signs

Note 1 — The inclusion of detailed specifications for runway distance remaining signs (RDRS) in this section is not intended to imply that an RDRS has to be provided. Attachment A, Section 23, provides guidance on the need to provide RDRSs. Guidance on installing RDRSs is given in the ICAO Aerodrome Design Manual (Doc 9157), Part 4.

Note 2 — Runway excursions may take place in all visibility or weather conditions. The use of RDRS can form part of effective runway excursion prevention measures. The purpose of RDRSs is to provide pilots with distance-to-go information to the extremity of the runway, to enhance situational awareness and enable pilots to decide whether to commence a go-around or to apply braking action for more efficient rollout and runway exit speeds. It is essential that pilots operating at aerodromes with RDRS be familiar with the purpose of these signs.

Note 3 — Provisions related to the identification of hazards and management of safety risks, including the need for safety risk assessment related to runway safety, is available in Advisory Circular NCAA-AC-ARD036, Chapter 8.

Location

12.2.5.4(h)(1) Where provided, runway distance remaining signs (RDRS) shall be placed along the full length of the runway at longitudinal spacing of approximately 300m, parallel and equidistant from the runway centre line.

Note : Displaced threshold areas that are used for take-off and/or roll-out are treated as part of the runway for purposes of locating the signs.

12.2.5.4(h)(2) Runway distance remaining signs shall be placed outside the edges of the runway at a distance shown in Table 5-6.

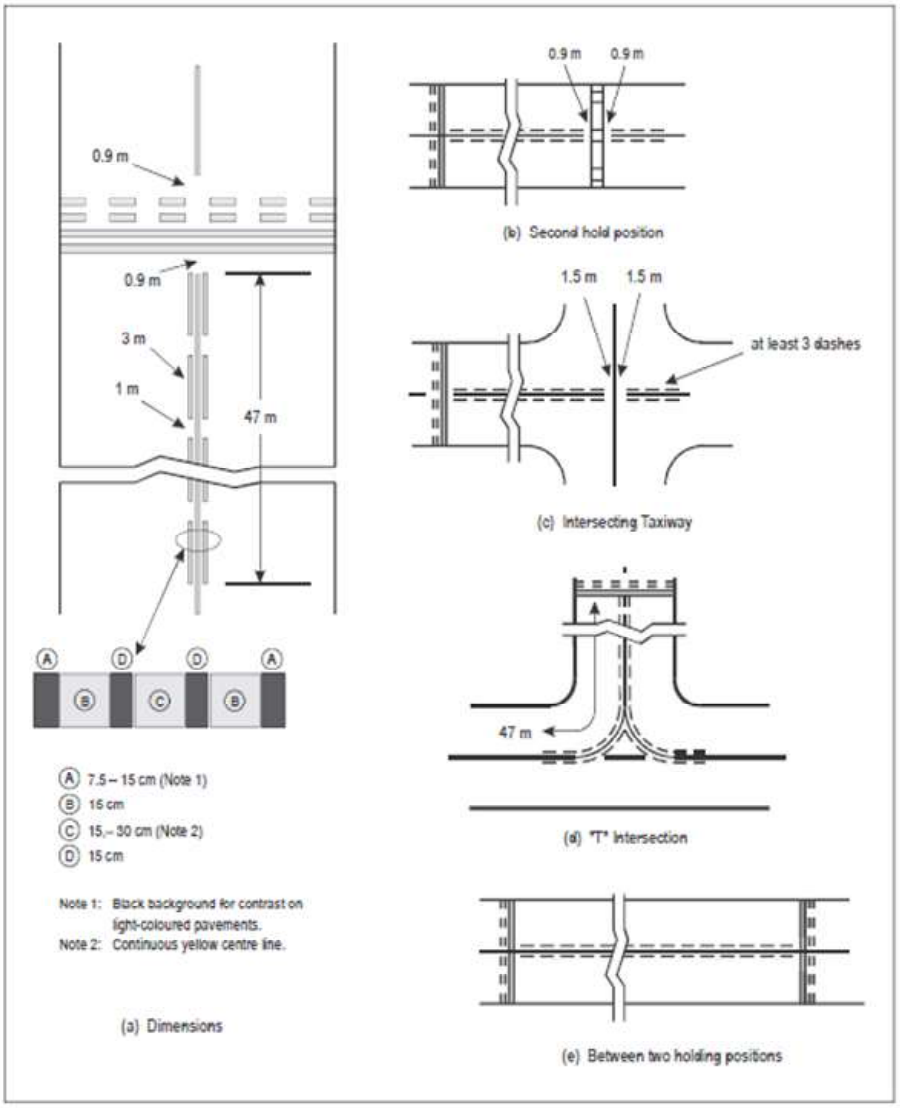
Characteristics

12.2.5.4(h)(3) Where provided, an RDRS shall consist of an inscription in white on a black background.

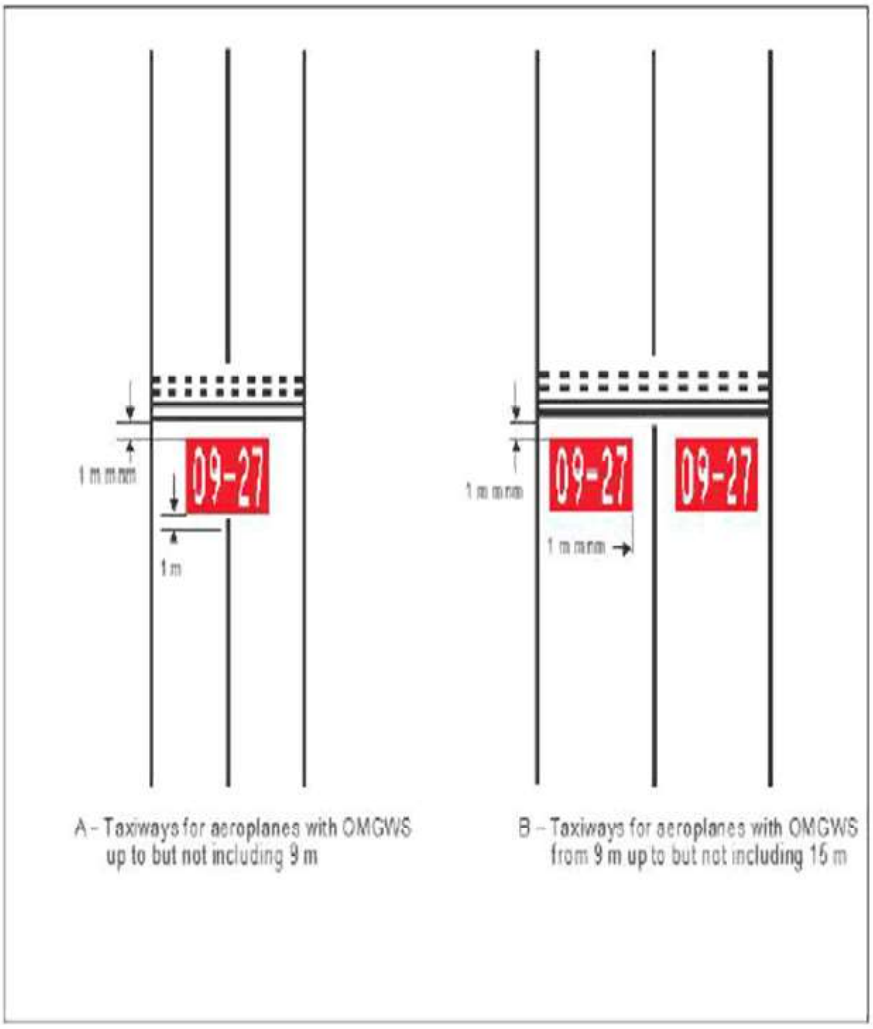
12.2.5.4(h)(4) The installed height of the RDRS shall not exceed the dimension shown in the appropriate column of Table 5-6. All RDRSs on one runway shall be the same size.

Code number	Sign height (mm)			Perpendicular distance from defined runway pavement edge to near side of sign
	Legend	Face (Min.)	Installed (Max.)	
1 or 2	640	760	1070	6-10.5m
3 or 4	1000	1200	1520	15-22.5m
3 or 4	1200	1500	1600	25m or more

Table 5-6: Location distances for runway distance remaining signs



336



A – Taxiways for aeroplanes with OMGWS up to but not including 9 m

B – Taxiways for aeroplanes with OMGWS from 9 m up to but not including 15 m

Figure 5-15 : Inner 300 m approach and runway lighting for precision approach runways, categories II and III, where the serviceability levels of the lights specified as maintenance objectives in Chapter 10 can be demonstrated

12.2.6 Visual Aids for Denoting Obstacles

12.2.6.2 Marking and/or lighting of objects

12.2.6.2(b) Mobile objects

12.2.6.2(b)(8) (*amended to read*) : Low-intensity obstacle lights on objects with limited mobility such as passenger boarding bridges shall be fixed-red, and as a minimum be in accordance with the specifications for low-intensity obstacle lights, Type A, in Table 6-1. The intensity of the lights shall be sufficient to ensure conspicuity considering the intensity of the adjacent lights and the general levels of illumination against which they would normally be viewed.

12.2.7 Visual Aids for Denoting Restricted use Areas

12.2.7.1 Closed runways and taxiways or parts thereof

12.2.7.1(a) General

12.2.7.1(a)(1) (*amended to read*) When a runway or taxiway or portion thereof is permanently closed, all normal runway and taxiway markings shall be obliterated.

12.2.7.1.(a)(2) Lighting systems provided for a closed runway or taxiway or portion thereof shall not be operated, except as required for maintenance purposes.

Note : Lighting systems provided for a runway include both approach and runway lighting systems.

12.2.7.1.(a)(3) In addition to closed markings, as specified in 12.2.7.1(b) and 12.2.7.1(c), when a closed runway or taxiway or portion thereof is intercepted by runway or taxiway which can be used at night, unserviceability lights shall be placed across the entrance to the closed area at intervals not exceeding 3m (see 12.2.7.4(b)).

12.2.7.1(b) (*amended to read*) : *Closed runway marking*

Application

12.2.7.1(b)(1) (*amended to read*): A closed runway marking shall be displayed on a runway or portion thereof which is permanently closed to the use of all aircraft.

12.2.7.1(b)(2) A closed runway marking shall be displayed on a temporarily closed runway or portion thereof, except that such marking may

be omitted when the closing is of short duration and adequate warning by air traffic services is provided.

Location (amended to read)

12.2.7.1(b)(3) A closed runway marking shall be placed at each extremity of the runway, or portion thereof, declared closed, and additional markings shall be so placed that the maximum interval between markings does not exceed 300m.

Characteristics (amended to read)

12.2.7.1(b)(4) The closed runway marking shall be white and of the form and proportions as detailed in Figure 7-1, Illustration a)

Note 1 : When an area is temporarily closed, frangible barriers or markings utilizing materials other than paint or other suitable means may be used to identify the closed area.

Note 2 *:* Procedures pertaining to the planning, coordination, monitoring and safety management of works in progress on the movement area are specified in the NCAA-AC-ARD036.

12.2.7.1(c) Closed taxiway marking

Application

12.2.7.1(c)(1) (*amended to read*) : A closed taxiway marking shall be displayed on a taxiway or portion thereof which is permanently closed to the use of all aircraft.

12.2.7.1(c)(2) A closed taxiway marking shall be displayed on a temporarily closed taxiway or portion thereof, except that such marking may be omitted when the closing is of short duration and adequate warning by air traffic services is provided.

Location (amended to read)

12.2.7.1(b)(3) A closed taxiway marking shall be placed at each extremity of the taxiway, or portion thereof closed.

Characteristics (amended to read)

12.2.7.1(b)(4) The closed taxiway marking shall be yellow and of the form and proportions as detailed in Figure 7-1, Illustration b)

Note 1 : When an area is temporarily closed, frangible barriers or markings utilizing materials other than paint or other suitable means may be used to identify the closed area.

Note 2 : Procedures pertaining to the planning, coordination, monitoring and safety management of works in progress on the movement area are specified in the NCAA-AC-ARD036.

12.2.7.1(d) Closed runway lighting

Application

12.2.7.1(d)(1) — Where operationally desirable, at an aerodrome provided with runway lighting, closed runway lighting shall be provided on runway (s) that are temporarily closed or temporarily restricted for take-off.

Note 1 : The purpose of the closed runway lighting is to reduce the likelihood of unintended landings during periods of poor visibility or at night whenever the runway lighting must be switched on for electrical maintenance.

Note 2 : In dusk or poor visibility conditions by day, lighting can be more effective than markings.

Note 3 : The closed runway lighting is intended to be controlled either automatically or manually by air traffic services or by the aerodrome operator.

12.2.7.1(d)(2) A closed runway lighting shall be placed on the centre line near each extremity of the runway temporarily declared closed. Location

Note : Placement of a closed runway lighting would enhance the situational awareness of the runway closure to the pilot.

12.2.7.1(d)(3) The closed runway lighting as viewed by the pilot shall be of the equivalent elevated form and proportions as detailed in Figure 7-2, showing a minimum of five lights uniformly spaced on each branch, with a minimum interval as specified by Table 7-1. Characteristics

Table 7-1 : Minimum interval between closed runway lights centres

Number of lights per branch	Minimum interval between lights centres
5	1.5 m
7	1.0 m
9	0.8 m

Note 1 : The closed runway lighting may be either fixed or mobile.

Note 2 : The fixed closed runway lighting may be formed as if shadowed (i.e. stretched) from the equivalent elevated structure (see Appendix 3, Note 3). Guidance on the sizing of a fixed closed runway lighting is given in the ICAO Aerodrome Design Manual (Doc 9157), Part 4.

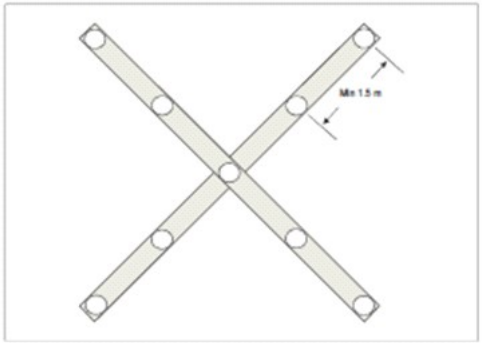


Figure 7-2 : Example of equivalent elevated closed runway lighting with five lights per branch

12.2.7.1(d)(4) Closed runway lights shall show flashing variable white in the direction of approach to the runway, at a rate of one second on and one second off.

12.2.7.1(d)(5) Closed runway lights shall automatically revert to fixed lights in the event of the flashing system failure.

12.2.7.1(d)(6) Closed runway lights shall be in accordance with the specifications in Appendix 2, Figure A2-27.

12.2.7.4 Unserviceable areas

12.2.7.4(a) (new text) : Unserviceability markings

Application

12.2.7.4(a)(1) Reserved

12.2.7.4(a)(2) Where it is impracticable to install an unserviceability sign in accordance with 12.2.7.4(c)1, an unserviceability marking shall be provided on the surface of the pavement.

Location

12.2.7.4(a)(3) Reserved

Characteristics

12.2.7.4(a)(4) Unserviceability markings shall consist of an inscription in black upon an orange background.

12.2.7.4(a)(5) The inscriptions shall be in the form and proportions shown in Appendix 3.

12.2.7.4(a)(6) The background shall be rectangular and extend a minimum of 0.5m laterally and vertically beyond the extremities of the inscription.

12.2.7.4(b) (*Amended to read*) : Unserviceability lights

Application (amended to read)

12.2.7.4(b)(1) Unserviceability lights shall be provided on a movement area used at night, wherever any portion of the movement area is unfit for the movement of aircraft but it is still possible for aircraft to bypass the area safely.

Note 1 : Unserviceability lights are used for such purposes as warning pilots of a hole in a taxiway or apron pavement or outlining a portion of pavement, such as on an apron, that is under repair. They are not suitable for use when a portion of a runway becomes unserviceable, nor on a taxiway when a major portion of the width becomes unserviceable. In such instances, the runway or taxiway is normally closed.

Note 2 : Procedures pertaining to the planning, coordination, monitoring and safety management of works in progress on the movement area are specified in the Advisory Circular NCAA-AC-ARD036.

12.2.7.4(b)(2) Unserviceability lights shall be placed at intervals sufficiently close so as to delineate the unserviceable area. Location (amended to read)

Note : Guidance on the location of unserviceability lights is given in Advisory Circular NCAA-AC-ARD036-1 Supplementary Guidance to Regulations, Section 13.

Characteristics 12.2.7.4(b)(3) An unserviceability light shall consist of a red fixed light. The light shall have an intensity sufficient to ensure conspicuity considering the intensity of the adjacent lights and the general level of illumination against which it would normally be viewed. In no case shall the intensity be less than 10 cd of red light.

12.2.7.4(c) Unserviceability signs

Note 1 : Temporary changes to the movement area may include, inter alia, reduction in the runway length, reduction in the maximum allowable wingspan, taxiway closure or any other closure to the movement area. Unserviceability signs provide relevant information to aerodrome users to maintain an acceptable level of safety during aircraft and vehicle operations, by reducing the risk of confusion and enhancing the awareness of such temporary changes.

Note 2 : Unserviceability signs can be used to indicate temporary closed or restricted areas, as well as to provide information on operational restrictions to aerodrome users.

12.2.7.4(c)(1) Unserviceability signs shall be provided where there is an operational need to indicate temporary changes to runway declared distances. Application

12.2.7.4(c)(2) Unserviceability signs shall be provided where there is an operational need to indicate temporary changes to taxiways and aprons.

12.2.7.4(c)(3) Existing signs shall be removed or obscured at an aerodrome if they provide inadequate or misleading information regarding unserviceability areas.

12.2.7.4(c)(4) The information provided by unserviceability signs shall not be in conflict with the information provided by the appropriate aeronautical information services.

Note : The information provided by unserviceability signs supplements that which is provided by the appropriate aeronautical information services unit.

Location

12.2.7.4(c)(5) Unserviceability signs shall be located where operationally needed on the movement area. The location distances on the manoeuvring area shall be as per taxiing guidance signs in Table 5-5.

12.2.7.4(c)(6) The location of unserviceability signs shall not visually obscure or provide conflicting information with existing operationally required visual aids.

Characteristics 12.2.7.4(c)(7) Unserviceability signs shall be frangible. Those located near a runway or taxiway shall be sufficiently low to preserve clearance for propellers and the engine pods of jet aircraft. The installed height of unserviceability signs shall not exceed the dimension for taxiing guidance signs shown in Table 5-5.

12.2.7.4(c)(8) Unserviceability signs shall be rectangular, as shown in Figure 7-3, with the longer side horizontal.

12.2.7.4(c)(9) The inscriptions on an unserviceability sign shall be in accordance with the provisions of IS 12.2.5.4.

12.2.7.4(c)(10) Unserviceability signs shall consist of an inscription in black on an orange background. Unserviceability signs shall be supplemented by a black outline measuring 10 mm in width for runways where the code number is 1 or 2, and 20 mm in width for runways where the code number is 3 or 4.

12.2.7.4(c)(11) The inscription on an unserviceability sign shall consist of a legible, clear and simple message, only providing the useful and necessary information for the safety of the operation. *Note* : See Figure 7-3 for examples of unserviceability sign.

12.2.7.4(c)(12) Unserviceability signs shall be retroreflective in accordance with the provisions of IS 12.2.5.4.

12.2.7.4(c)(13) Where there is a need to enhance the conspicuity of unserviceability signs, they shall be supplemented by two red or yellow simultaneously flashing lights. The intensity and the beam spread of these lights shall be in accordance with the specifications in IS 12.2.5.3, Figure A2-24.

Figure 7-3. Examples of unserviceability signs

12.2.7.4(d) Unserviceability markers

Application

12.2.7.4(d)(1) Unserviceability markers shall be displayed wherever any portion of a taxiway, apron or holding bay is unfit for the movement of aircraft but it is still possible for aircraft to bypass the area safely.

Note : Unserviceability markers are used for such purposes as warning pilots of a hole in a taxiway or apron pavement or outlining a portion of pavement, such as on an apron, that is under repair. They are not suitable for use when a portion of a runway becomes unserviceable, nor on a taxiway when a major portion of the width becomes unserviceable. In such instances, the runway or taxiway is normally closed.

Location

12.2.7.4(d)(2) Unserviceability markers shall be placed at intervals sufficiently close, so as to delineate the unserviceable area.

Characteris-tics

12.2.7.4(d)(3) Unserviceability markers shall consist of conspicuous upstanding devices such as flags, cones or marker boards.

12.2.7.4(d)(4) An unserviceability cone shall be at least 0.5 m in height and red, orange or yellow or any one of these colours in combination with white.

12.2.7.4(d)(5) An unserviceability flag shall be at least 0.5 m square and red, orange or yellow or any one of these colours in combination with white.

12.2.7.4(d)(6) An unserviceability marker board shall be at least 0.5 m in height and 0.9 m in length, with alternate red and white or orange and white vertical stripes.

12.2.8 ELECTRICAL SYSTEMS

12.2.8.1 Electrical power supply systems for air navigation facilities (*amended to read*)

Visual aids

Application

12.2.8.1(j) — The following aerodrome facilities shall be provided with a secondary power supply capable of supplying power when there is a failure of the primary power supply :

(*c*) approach, runway and taxiway lighting as specified in 12.2.8.1(i) ;

(*d*) closed runway lighting, if provided in accordance with 12.2.7.1(d)(1) and connected to the primary power supply ;

(e) meteorological equipment ;

(f) essential security lighting, if provided in accordance with 12.2.9.11;

(g) essential equipment and facilities for the aerodrome responding emergency agencies ;

(*h*) floodlighting on a designated isolated aircraft parking position if provided in accordance with 12.2.5.3(x)(1) ; and

(*i*) illumination of apron areas over which passengers may walk.

Note — Specifications for secondary power supply for radio navigation aids and ground elements of communications systems are given in Annex 10, Volume I, Chapter 2.

12.2.8.2 SYSTEM DESIGN

12.2.8.2(d) The electrical systems for the power supply and the control of the closed runway lighting shall be so designed that the closed runway lighting system is operated independently of runway lighting systems.

12.2.9 Aerodrome Operational Services, Equipment and Installations

12.2.9.1 Aerodrome emergency planning

General

12.2.9.1(c) The plan shall coordinate the response or participation of all existing agencies which, in the opinion of the appropriate authority, could be of assistance in responding to an emergency.

Note 1 : Examples of agencies are :

on the aerodrome : air traffic control units, rescue and firefighting services, aerodrome administration, medical and ambulance services, aircraft operators, ground handling service providers, security services, and police ;

12.2.9.5 Apron management service

12.2.9.5(e) — Aircraft shall be allocated to an aircraft stand or apron area appropriate to the aircraft characteristics.

12.2.9.5(f) — A risk assessment shall be carried out if there is a need to allocate aircraft parking to areas other than aircraft stands or apron areas.

Note — The need to allocate aircraft to other areas could arise from situations such as mass diversions, special events, adverse weather conditions, contingency requirements, work in progress, etc.

12.2.9.5(g) — When allocating an aircraft to an aircraft stand, the following parameters shall be considered :

(*a*) parking aids ;

(*b*) facilities serving the aircraft stand ;

(*c*) proximity of infrastructure ;

(*d*) other parked aircraft in the neighbouring aircraft stands ;

(*e*) aircraft stand dependencies ; and

(*f*) jet blast and propeller wash related protection.

12.2.9.5(h) An emergency vehicle responding to an emergency shall be given priority over all other surface movement traffic.

Apron Safety (amended to read)

12.2.9.5(i) A vehicle operating on an apron shall :

12.2.9.5(j) Aircraft shall be guided while arriving on or departing from the aircraft stand.

Note — Means for guidance can be a visual docking guidance systems, personnel, lighting or markings.

12.2.9.5(k) An aircraft stand shall be visually monitored in-person or remotely to ensure that the recommended clearance distances are maintained.

Note : Stand dependencies may occur when multiple centre lines are used on the same stand, creating possible variations in fixed or mobile obstacle separations with adjacent stands.

12.2.9.5(l) Emergency stop procedures shall be in place to stop an aircraft when entering the stand if the safety of operations on the aircraft stand is compromised.

Note : Procedures on the training of operational personnel, and on apron safety and operations, are specified in the Advisory Circular NCAA-AC-ARD0036, Part II, Chapters 1 and 7.

12.2.9.5(m) Personnel, other than those required to assist the initial arrival and departure of the aircraft, shall not be allowed to approach the aircraft when anti-collision lights are turned on and engines are running.

Note : This does not apply to helicopter operations as per Annex 6, Part 3.

12.2.9.5(n) Parked aircraft shall be appropriately secured to prevent any unintended movement.

12.2.9.6 Aircraft fuelling — Safety considerations (*amended to read*)

12.2.9.6(a) Fire extinguishing equipment suitable for at least initial intervention in the event of a fuel fire and personnel trained in its use shall be readily available during fuelling operations, and there shall be a means of quickly summoning the rescue and firefighting service in the event of a fire or major fuel spill.

12.2.9.6(b) When aircraft refuelling operations take place while passengers are embarking, on board or disembarking, ground equipment shall be positioned so as to allow :

(*a*) the use of a sufficient number of exits for expeditious evacuation ; and

(*b*) a ready escape route from each of the exits to be used in an emergency.

12.2.10 Aerodrome Maintenance

12.2.10.5 Visual aids (*amended to read*)

12.2.10.5(a) A light shall be deemed to be unserviceable when the main beam average intensity is less than 50 per cent of the value specified in the appropriate figure in IS 12.2.5.3 For light units where the main beam average intensity is required to be higher than the value specified in the appropriate figure in IS 12.2.5.3, a light shall be deemed to be unserviceable when the main beam average intensity value is less than 50 per cent of this higher value and not the value specified in IS12.2.5.3.

Note — Guidance on maintenance criteria for aeronautical ground lights, on the use of a site standard and on using a higher main beam average intensity is contained in the ICAO Aerodrome Design Manual (Doc 9157), Part 4.

12.2.10.5(h) The system of preventive maintenance employed for a stop bar provided at a runway-holding position used in conjunction with a

runway intended for operations in runway visual range conditions less than a value of 300 m shall have the following objectives :

(*a*) no more than two lights will remain unserviceable; and

(b) two adjacent lights will not remain unserviceable unless the light spacing is significantly less than that specified.

12.2.10.5(i) The system of preventive maintenance employed for a taxiway intended for use in runway visual range conditions less than a value of 300 m shall have as its objective that no two adjacent taxiway centre line lights be unserviceable.

IS 12.2.5.3 Aeronautical Ground Light Characteristics

4. See collective notes for Figures A2-1 to A2-11, A2-26 and A2-27.

Figure A2-1 : Isocandela diagram for approach centre line light and crossbars (white light)

4. See collective notes for Figures A2-1 to A2-11, A2-26 and A2-27.

Figure A2-2 : Isocandela diagram for approach side row light (red light)

3. See collective notes for Figures A2-1 to A2-11, A2-26 and A2-27.

Figure A2-3 : Isocandela diagram for threshold light (green light)

3. See collective notes for Figures A2-1 to A2-11, A2-26 and A2-27.

Figure A2-4 : Isocandela diagram for threshold wing bar light (green light)

3. See collective notes for Figures A2-1 to A2-11, A2-26 and A2-27.

Figure A2-5 : Isocandela diagram for touchdown zone light (white light)

4. See collective notes for Figures A2-1 to A2-11, A2-26 and A2-27.

Figure A2-6 : Isocandela diagram for runway centre line light with 30 m longitudinal spacing (white light) and rapid exit taxiway indicator light (yellow light)

4. See collective notes for Figures A2-1 to A2-11, A2-26 and A2-27.

Figure A2-7 : Isocandela diagram for runway centre line light with 15 m longitudinal spacing (white light) and rapid exit taxiway indicator light (yellow light)

Figure A2-7 : Isocandela diagram for runway centre line light with 15 m longitudinal spacing (white light) and rapid exit taxiway indicator light (yellow light)

2. See collective notes for Figures A2-1 to A2-11, A2-26 and A2-27.

Figure A2-8. Isocandela diagram for runway end light (red light)

5. See collective notes for Figures A2-1 to A2-11, A2-26 and A2-27.

Figure A2-9 : Isocandela diagram for runway edge light where width of runway is 45m (white light)

5. See collective notes for Figures A2-1 to A2-11, A2-26 and A2-27.

Figure A2-10 : Isocandela diagram for runway edge light where width of runway is 60m (white light)

Collective notes to Figures A2-1 to A2-11, A2-26 and A2-27

4. The average intensity within the ellipse defining the main beam of a new light is established as a ratio of the minimum (1.0) average intensity of a new Runway edge light. The ratios also define the maximum allowed main beam average intensity for the lights in the lighting system supporting runway operations. Guidance on maintenance criteria for aeronautical ground lights and the use of a site standard is contained in the ICAO Aerodrome Design Manual (Doc 9157), Part 4.

Figure A2-1 : Approach centre line and crossbars 2.0 to 3.0 (white light)

Figure A2-9 : Runway edge (45 m runway width) 1.0 to 1.5 (white light)

Figure A2-10 : Runway edge (60 m runway width) 1.0 to 1.5 (white light)

Figure A2-12 : Isocandela diagram for taxiway centre line (15 m spacing), RELs, no-entry bar and stop bar lights in straight sections intended for use in runway visual range conditions of less than a value of 350 300 m where large offsets can occur and for low-intensity runway guard lights, Configuration B

Figure A2-13 : Isocandela diagram for taxiway centre line (15 m spacing), no-entry bar and stop bar lights in straight sections intended for use in runway visual range conditions of less than a value of 300m

Figure A2-14 : Isocandela diagram for taxiway centre line (7.5 m spacing), RELs, no-entry bar and stop bar lights in curved sections intended for use in runway visual range conditions of less than a value of 300m

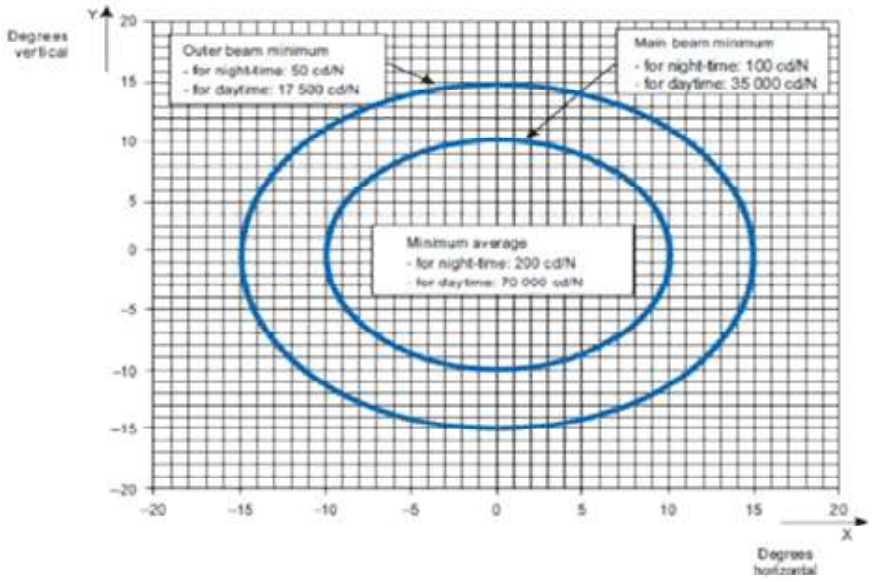
Figure A2-15 : Isocandela diagram for taxiway centre line (30 m, 60 m spacing), no-entry bar and stop bar lights in straight sections intended for use in runway visual range conditions of 300 m or greater

Figure A2-16 : Isocandela diagram for taxiway centre line (7.5 m, 15 m, 30 m spacing), no-entry bar and stop bar lights in curved sections intended for use in runway visual range conditions of 300m or greater

Figure A2-24 : Isocandela diagram for each light in low-intensity runway guard lights, Configuration A and for flashing lights supplementing unserviceability signs

2. See collective notes for Figures A2-1 to A2-11, A2-26 and A2-27.

Figure A2-26 : Isocandela diagram for take-off and hold lights (THL) (red light)



Notes :

1. Curves calculated on formula $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$

a	10	15
b	10	15

2. N is the total number of lights of the closed runway lighting.

3. See collective notes for Figures A2-1 to A2-11, A2-26 and A2-27.

Figure A2-27. Isocandela diagram for closed runway lights (white light)

IS 12.2.5.4 Requirements Concerning Design of Signs

9. The forms of characters, i.e. letters, numbers, arrows and symbols for mandatory instruction and information signs, shall conform to those shown in Figure A4-2. The width of characters and the space between individual characters shall be determined as indicated in Table A4-1.

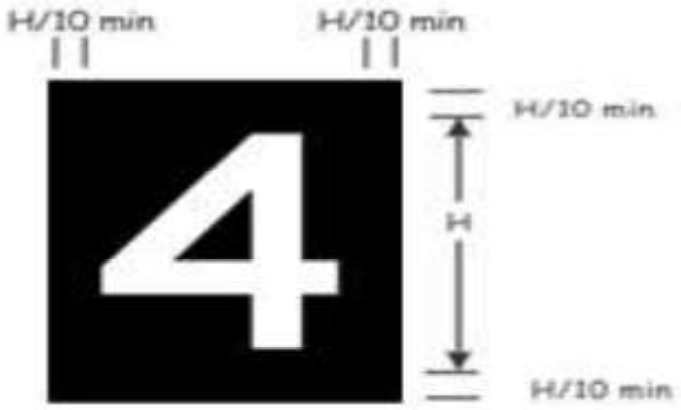
Note : Guidance on the width of characters and the space between individual characters for RDRS is contained in the ICAO Aerodrome Design Manual (Doc 9157), Part 4 Visual Aids.

11. The face width of mandatory instruction and information signs shall be determined using Figure A4-4 except that, where a mandatory instruction sign is provided on one side of a taxiway only, the face width shall not be less than :

12. The face width of runway distance remaining sign (RDRS) shall be determined using Figure A4-5.

13. Borders

14. The colours of signs shall be in accordance with the appropriate specifications in Appendix 1.



Explanatory Note to Figure A4-5: "H" stands for the inscription height

Figure A4-5. Sign dimensions for RDRS

PART 14 — AIR NAVIGATION SERVICES

14.0 INTRODUCTION

Amend paragraph 3 to read thus; "This Part incorporates the following annexes and documents : Annex 2 (Amendment 48), Annex 3 (Amendment 82), Annex 4 (Amendment 62), Annex 10 Vol. I (Amendment 94), Annex 10 Vol. II (Amendment 94), Annex 10 Vol. III (Amendment 93), Annex 10 Vol. IV (Amendment 91), Annex 10 Vol. V (Amendment 91), Annex 11 (Amendment 54), Annex 12 (Amendment 19), Annex 15 (Amendment 43), PANS-AIM (Document 10066, Amendment 4), PANS-MET (Document 10157, 1st Edition) and PANS-ABC (Document 8400, Amendment 35) which address the Air Navigation rules, procedures and services applications as stated in Articles 13, 37, and 38 of the Convention on International Civil Aviation (Chicago) 1944.

The acronyms and definitions in this Sub Part are of general application to 14.1, 14.2, 14.3, 14.5. 14.6, 14.7.

14.0.4.1 (a) is amended to read thus

An application for an air navigation service provider certificate or approval shall be made to Authority by the applicant as prescribed by the Authority.

14.1.9 — Instrument Flight Procedure Design Service (amended to read thus)

(*a*) An Air Traffic Services Provider (ATSP) shall ensure that Instrument Flight Procedure Design Services (IFPDS) necessary for the provision of its services are made available through one or more of the following means :

1. Direct provision of IFPDS by the ATSP in compliance with Part 14.2 ; and/or

2. By contracting a certified or approved external Instrument Flight Procedure Design Service Provider (IFPDSP) in accordance with Part 14.2

(*b*) In all cases in (a) above, the ATSP shall ensure that :

1. all instrument flight procedures developed for all aerodromes and airspaces are approved by the authority; and

2. it retains overall responsibility for the safety and integrity of these procedures.

(*c*) The ATSP shall ensure that all instrument flight procedures implemented under its responsibility are designed strictly in accordance with the design criteria approved by the Authority, as set out in Part 14.2.

(*d*) The ATSP shall ensure that any IFPDSP engaged to design instrument flight procedures for aerodromes or airspace under the State's jurisdiction :

1. Is certified or approved by the Authority in accordance with the national regulatory framework ; and

2. Continues to meet applicable safety, competency, and oversight requirements during the period of engagement.

(*e*) The ATSP shall ensure that any IFPDSP involved in the development of instrument flight procedures uses a Quality Management System (QMS) applicable to all stages of the design process.

Note — This requirement may be satisfied through a quality assurance methodology as described in ICAO PANS-OPS (Doc 8168), Volume II, and further detailed in the Quality Assurance Manual for Flight Procedure Design (Doc 9906).

(*f*) The ATSP shall establish procedures to ensure the maintenance and periodic review of all instrument flight procedures associated with its services.

1. Such reviews shall be conducted at intervals not exceeding five (5) years, or more frequently if operational or regulatory changes so require.

2. The ATSP shall coordinate with the Authority and relevant IFPDSPs to ensure that reviews reflect current operational, navigational, and safety standards.

Note : Additional guidance is contained in ICAO Doc 9906

14.2.22 — Quality Management System (QMS) for Instrument Flight Procedure Design Service Providers (amended to read thus)

14.2.22.1 — (a) An Instrument Flight Procedure Design Service Provider (IFPDSP) shall establish and implement a Quality Management System (QMS) in order to ensure compliance with, and the adequacy of, the procedures required by these Regulations.

(*b*) The IFPDSP's QMS shall establish its quality policy and objectives and ensure that the organization has in place those elements necessary to improve efficiency, ensure the integrity of instrument flight procedures, and reduce design-related risk, including procedures for monitoring the performance of all aspects of the organization such as :

1. design, documentation, and maintenance of procedures in accordance with the criteria approved by the Authority (including procedure design manuals and documentation standards) ;

2. verification, validation, and testing methods applied to flight procedure design outputs ;

3. monitoring and control of design tools, data sources, and supporting equipment/software ;

4. conduct of internal and external audits to assure compliance with regulatory requirements and ICAO provisions ;

5. monitoring of corrective and preventive actions taken to address non-conformities in the design process ; and

6. application of appropriate statistical analysis and data quality checks where required.

Note 1 — This requirement may be met through a quality assurance methodology as described in PANS-OPS (Doc 8168, Volume II).

Note 2 — Further guidance is contained in the Quality Assurance Manual for Flight Procedure Design (Doc 9906).

14.3 INTRODUCTION

Amend introduction to read thus "This Regulation is applicable to the provision of Aeronautical Search and Rescue. The requirements herein are in line with the provisions of the Civil Aviation Act, 2022 for standardized operational procedures, equipment and infrastructure including safety, personnel competency and training in conformity with Standard and Recommended Practices (SARPs) contained in the Annex 12 to the Chicago Convention and relevant documents as contained in Introduction in 14.0.

14.3.8 paragraphs d to h is amended to read thus *Cooperation Between States*

(*d*) The Authority in coordination with the designated search and rescue provider and other relevant government agencies will establish letters of agreement for search and rescue operations within Nigeria and with aeronautical search and rescue agencies of contiguous States to strengthen search and rescue cooperation and coordination.

(*e*) The letters of agreements in 14.3.8 (d) shall set forth the conditions for entry of each other's search and rescue units into their respective territories and ensure the provision for expedited entry of search and rescue units with the least possible formalities.

(f) Search and Rescue units from other States wishing to enter the territory of Nigeria for search and rescue purposes shall transmit a written request, giving full details of the proposed mission, to the Authority.

(g) The Authority will

(1) acknowledge the receipt of such a request,

(2) coordinate with relevant State agencies, as soon as possible, indicate the conditions, if any, under which the proposed mission may be undertaken, and

(3) Direct the Aeronautical Search and Rescue Service Provider to take immediate action.

14.4.6 Aeronautical Information Products and Services

Pre-Flight Information Services

14.4.6.1 Automated pre-flight information systems providing a harmonized, common point of access by operations personnel, including flight crew members and other aeronautical personnel concerned, to aeronautical data and aeronautical information in accordance with 14.4.6 and meteorological information in accordance with 9.4.1 of Annex 3 - Meteorological Service for

International Air Navigation, shall be established by an agreement between the civil aviation authority or the agency to which the authority to provide service has been delegated in accordance with 2.1.1 c) of Annex 15 and the relevant meteorological authority service provider.

Appendix 2 *Contents of the Aeronautical Information Publication (AIP)*

14.4.7(b)(3) *is amended to read thus :* A Notam shall be originated and issued concerning the following information :

14.6 *Introduction is amended to read thus* :

This Regulation is applicable to the provision of Aeronautical Meteorological Services. The requirements herein are in line with the provisions of the Civil Aviation Act, 2022 and for standardized operational procedures, equipment and infrastructure including safety, personnel competency and training in conformity with Standard and Recommended Practices (SARPs) contained in the Annex 12 to the Chicago Convention and relevant documents as contained in Introduction in 14.0.

This subpart should be read in conjunction with subpart 14.0 of these regulations for the applicable definitions and abbreviation.

The Nigeria Civil Aviation Regulations (Nig. CARs) Part 14.6 which is an adaptation of Annex 3, 21st ed of August 2025 is an integral part of this regulation which addresses the Air Navigation rules, procedures and services' applications as stated in Articles 13, 37 and 38 of the Convention on International Civil Aviation (Chicago) 1944.

14.6.1.2 Objective, Determination and Provision of Meteorological Service (insert new (d) (1) (f) n (g) to read thus :

(*d*)

(1) The designated meteorological service provider (NiMet) complies with the requirements of the World Meteorological Organization (WMO) in respect of qualifications, competencies, education and training of meteorological personnel providing service for international air navigation.

(*f*) *Meteorological Authority (NCAA)*

Nigeria Civil Aviation Authority (NCAA) hereinafter referred to as the meteorological authority, is responsible to arrange for the provision of meteorological service for international air navigation on its behalf. The details of the meteorological service provider so designated has been included in Nigeria aeronautical information publication, in accordance with Annex 15, Chapter 5.

(*g*) *Meteorological service provider*

NCAA has designated Nigerian Meteorological Agency (NiMet), hereinafter referred to as the meteorological service provider, to provide meteorological service for international air navigation on behalf of the NCAA. The details of the meteorological service provider have been included in Nigeria aeronautical information publication, in accordance with Annex 15, Chapter 5.

14.6.1.3 Supply, Use, Quality Management and Interpretation of Meteorological Information

14.6.1.3 (d) *note amended to read thus* :

Note : Requirements concerning the geographical and spatial coverage, format and content, time and frequency of issuance and period of validity of meteorological information to be supplied to aeronautical users are contained in Chapters 3, 4, 6, 7, 8, 9 and 10 ICAO Annex 3, Chapters 2, 4, 5, 6, 7, 8 and 9 of the PANS-MET (Doc 10157) and the relevant regional air navigation plans. Guidance concerning the accuracy of measurement and observation, and accuracy of forecasts is given in Attachments A and B, respectively, to the PANS-MET (Doc 10157)

14.6.1.3 (e) note amended to read thus :

Note : Requirements concerning the exchange of operational meteorological information are contained in Chapter 11 Annex 3 and Chapter 10 of the PANS-MET (Doc 10157).

14.6.1.3 (o) note amended to read thus :

Note : Guidance on the operationally desirable accuracy of measurement or observation is contained in Attachment A to the PANS-MET (Doc 10157).

14.6.1.3 (p) note amended to read thus :

Note : Guidance on the operationally desirable accuracy of forecasts is contained in Attachment B to the PANS-MET (Doc 10157).

14.6.1.4 Grant of Certificate or Approval to Aeronautical Meteoroligical Services Provider (AMSP) and Supply of Meteoroligical Information is amended to read thus :

14.6.1.4 (a) The Authority shall grant an Aeronautical Meteorological Service Provider certificate or approval for the supply of the following services in support of international air navigation :

14.6.2 the heading is amended to read thus :

Global Systems, Supporting Centres and Meteoroligical Offices

14.6.2.1 Aerodrome Meteoroligical Offices is amended to read thus :

(*a*) The AMSP certificate or approval holder shall establish one or more aerodrome and /or other meteorological offices which shall be adequate for the provision of the meteorological service required to satisfy the needs of international air navigation.

(*d*)

(8) supply information received on pre-eruption volcanic activity, a volcanic eruption or volcanic ash cloud, to its associated air traffic services unit, aeronautical information service unit and meteorological watch offices (MWO) as agreed between the aeronautical meteorological service provider, aeronautical information service and appropriate ATS authorities concerned.

14.6.3 heading is amended to read thus : Aeronautical Meteoroligical Station and Reports

New (i) — (*m*) are inserted to read thus :

14.6.3.1 ***(i)*** NCAA shall arrange for the aeronautical meteorological stations to be inspected at sufficiently frequent intervals to ensure that a high standard of observation is maintained, that instruments and all their indicators are functioning correctly, and that the exposure of the instruments has not changed significantly.

Note : Guidance on the inspection of aeronautical meteorological stations including the frequency of inspections is given in the Manual on Automatic Meteorological Observing Systems at Aerodromes (Doc 9837).

(*j*) The meteorological instruments used at an aerodrome shall be situated in such a way as to supply data which are representative of the area for which the measurements are required.

Note : Specifications concerning the siting of equipment and installations on operational areas, aimed at reducing the risk of damage to aircraft to a minimum, are contained in Annex 14, Volume I, Chapter 9.

(*k*) Meteorological instruments at aeronautical meteorological stations shall be exposed, operated and maintained in accordance with the practices, procedures and specifications promulgated by the World Meteorological Organization (WMO).

Note : Practices, procedures and specifications of WMO are contained in the Guide to Instruments and Methods of Observation (WMO-No.8), Volume I- Measurement of Meteorological Variables, Volume II- Observing Systems ; and Volume III-Quality Assurance and Management of Observing Systems.

(*l*) The observers at an aerodrome shall be located, in so far as is

practicable, so as to supply data which are representative of the area for which the observations are required.

(*m*) Where automated equipment forms part of an integrated semi-automatic observing system, displays of data which are made available to the local air traffic services unit shall be a subset of and displayed in parallel to those available in the local meteorological service unit. In those displays, each meteorological element should be annotated to identify, as appropriate, the locations for which the element is representative.

14.6.3.3 (b)(i) is renumbered to 14.6.3.3 (1). Note 1 is inserted thereafter to read thus :

Note 1 : Procedures and technical specifications related to this section are contained in the PANS-MET S(Doc 10157), Chapter 2, Section 2.1.1.

14.6.3.3(b)(ii) is renumbered to 14.6.3.3 (2). Note 2 is inserted thereafter to read thus :

Note 2 : Technical specifications of the issuance and the dissemination of METAR are contained in the PANS-MET (Doc 10157), Chapter 2, 2.1.1.2 and 2.1.1.3.

14.6.3.6 Observing and Reporting Meteorological Elements

Insert Note to read thus :

Note : Procedures and technical specifications related to this section are contained in the PANS-MET (Doc 10157), Chapter 2, 2.2.

14.6.3.8 Observation and Reporting Volcanic Activity

Insert Note to read thus :

Note 2 : Procedures and technical specifications related to this section are contained in the PANS-MET (Doc 10157), Section 2.3.

14.6.3.9 Dissemination of Meteoroligical Reports new provisions inserted to read thus :

(*a*) *Metar and Speci*

(1) METAR and SPECI shall be disseminated to international OPMET databanks and the centres designated by regional air navigation agreement for the operation of aeronautical fixed service Internet- based services, in accordance with regional air navigation agreement.

(2) *Metar* and *Speci* shall be disseminated to other aerodromes in accordance with regional air navigation agreement.

(3) *Speci* representing a deterioration in conditions shall be disseminated immediately after the observation. A SPECI representing a deterioration of one

weather element and an improvement in another element shall be disseminated immediately after the observation.

(4) A *Speci* representing an improvement in conditions shall be disseminated only after the improvement has been maintained for 10 minutes; it shall be amended before dissemination, if necessary, to indicate the conditions prevailing at the end of that 10-minute period.

(*b*) Local routine report and local special report

(1) Local routine reports shall be transmitted to local air traffic services units and shall be made available to the operators and to other users at the aerodrome.

(2) Local special reports shall be transmitted to local air traffic services units as soon as the specified conditions occur. However, as agreed between the meteorological service provider and the appropriate ATS authority, they need not be issued in respect of :

(*i*) any element for which there is in the local air traffic services unit a display corresponding to the one in the meteorological station, and where arrangements are in force for the use of this display to update information included in local routine report and local special report ; and

(*ii*) runway visual range, when all changes of one or more steps on the reporting scale in use are being reported to the local air traffic services unit by an observer on the aerodrome. Local special reports shall also be made available to the operators and to other users at the aerodrome.

14.6.4 Aircraft Observation and Reports

Note is replaced to read thus :

Note : The regulation under this chapter are to be used in conjunction with the Procedures for Air Navigation Services - Meteorology (PANS-MET, Doc 10157), Chapter 3.

14.6.4.7 Reporting of Aircraft Observations During Flight

Insert Note to read thus :

Note : Procedures and technical specifications related to this section are contained in the PANS-MET (Doc 10157), Chapter 3, 3.1.

14.6.4.7(d) New provision inserted to read thus :

Routine and special aircraft observations shall be reported as routine and special air-reports, respectively. Routine and special air-reports reported by air-ground data link shall contain, as a minimum, the following meteorological information :

(1) wind direction ;

(2) wind speed ;

(3) air temperature ; and

(4) condition prompting the issuance of the air-report (only applicable for special air-reports).

14.6.4.8 Relay of Air-Reports By Air Traffic Services Units

New provision 14.6.4.8 (b) inserted to read thus :

(*b*) The meteorological service provider concerned shall make arrangements with the appropriate ATS authority to ensure that :

(1) special air-reports be uplinked for 60 minutes after their issuance; and

(2) information on wind and temperature included in automated special air-reports not be uplinked to other aircraft in flight.

14.6.4.10 Reporting of Wind Shear

New provision inserted to read thus :

(*a*) When reporting aircraft observations of wind shear encountered during the climb-out and approach phases of flight, the aircraft type should be included.

(*b*) Where wind shear conditions in the climb-out or approach phases of flight were reported or forecast but not encountered, the pilot-in-command should advise the appropriate air traffic services unit as soon as practicable unless the pilot-in-command is aware that the appropriate air traffic services unit has already been so advised by a preceding aircraft.

14.6.4.11 Dissemination of Air-Reports

New provision inserted to read thus :

(*a*) The meteorological watch office shall transmit without delay the special air-reports received by voice communications to the world area forecast centres (WAFCs) and the centres designated by regional air navigation agreement for the operation of aeronautical fixed service Internet-based services.

(*b*) The meteorological watch office shall transmit without delay special air-reports of pre-eruption volcanic activity; a volcanic eruption or volcanic ash cloud received to the associated volcanic ash advisory centres.

(*c*) When a special air-report is received at the meteorological watch office but the forecaster considers that the phenomenon causing the

report is not expected to persist and, therefore, does not warrant issuance of a SIGMET, the special air-report shall be disseminated in the same way that SIGMET information is disseminated in accordance with 14.6.22.5, that is, to meteorological watch offices, WAFCs and other meteorological offices in accordance with regional air navigation agreement.

Note : The template used for special air-reports which are uplinked to aircraft in flight is in the PANS-MET (Doc 10157), Appendix 3, Table A3-2.

(d) Air-reports received at WAFCs shall be further disseminated as basic meteorological data.

Note : The dissemination of basic meteorological data is normally carried out on the World Meteorological Organization (WMO) Global Telecommunication System.

(e) Where supplementary dissemination of air-reports is required to satisfy special aeronautical or meteorological requirements, arrangements for such dissemination shall be agreed between the meteorological service providers concerned.

(f) Air-reports shall be exchanged in the format in which they are received.

14.6.5 Heading amended to read thus : Forecasts : Aerodrome and En-route Meteorological Forecast Information

14.6.5 Notes 1-3 replaced to read thus :

Note. 1 - The regulation in this chapter is to be used in conjunction with the Procedures for Air Navigation Services - Meteorology (PANS-MET, Doc 10157), Chapters 4 and 5.

Note.2 - Procedures and technical specifications related to this section are contained in the PANS-MET (Doc 10157), Chapter 4, and Section 4.1

Note.3 - The aerodromes for which aerodrome forecasts are to be prepared and the period of validity of these forecasts are listed in the relevant regional electronic air navigation plan (eANP), Volume II.

14.6.5.2 New provisions (f) — (h) to read thus :

(f) Aerodrome forecasts (TAF) shall be issued and disseminated in the TAF code form prescribed by the World Meteorological Organization (WMO), in accordance with the template shown in PANS-MET (DOC 10157) Appendix 4, Table A4-1, following the content and order of elements indicated therein.

Note 1 — The TAF code form is contained in the Manual on Codes (WMO-No. 306), Volume I.1, and Part A —Alphanumeric Codes.

Note 2 — Technical specifications of the issuance of aerodrome forecast are contained in the PANS- MET (Doc 10157) Chapter 4, 4.1.1.1 and 4.1.1.2.

Note 2 — The visibility included in TAF refers to the forecast prevailing visibility.

(*g*) TAF shall be disseminated in ICAO meteorological information exchange model (IWXXM) form in addition to the dissemination of the TAF in accordance with 14.6.16.1 ii).

Note. - The technical specifications for IWXXM are contained in the Manual on Codes (WMO-No. 306),Volume I.3, Part D - Representations Derived from Data Models. Guidance on the implementation of IWXXM is provided in the Manual on the ICAO Meteorological Information Exchange Model (Doc 10003).

h) TAF and amendments thereto shall be disseminated to international OPMET databanks and the centres designated by regional air navigation agreement for the operation of aeronautical fixed service Internet-based services, in accordance with regional air navigation agreement.

14.6.5.3 Landing Forecasts (Trend Forecasts)

Insert Notes 1 and 2 to read thus :

Note 1. — Procedures and technical specifications related to this section are contained in the PANS-MET (Doc 10157), Chapter 4, Section 4.2

Note. 2 - Technical specifications of the issuance of trend forecast are contained in the PANS-MET (Doc 10157) Chapter 4, 4.2.1.1 and 4.2.1.2.

14.6.5.3 (d) new provision to read thus : The units and scales used in the trend forecast shall be the same as those used in the report to which it is appended.

14.6.5.4 Forecasts for Take-Off

Insert Note to read thus :

Note. - Procedures and technical specifications related to this section are contained in the PANS-MET (Doc 10157), Section 4.3.

14.6.5.5 Amended heading to read thus : Area Forecasts for Low-Level Flights (GA MET, and Area Forecasts in Chart Form)

Insert Notes 1 and Note 2 to read thus :

Note 1 — Procedures and technical specifications related to this section are contained in the PANS-MET (Doc 10157), Section 5.2.

Note 2. - Template of GAMET is contained in the PANS-MET (Doc 10157), Appendix 6, and Table A6-1.

14.6.5.5(d) New provision is inserted to read thus :

Area forecasts for low-level flights prepared in support of the issuance of AIRMET information shall be disseminated to the aeronautical fixed service Internet-based services.

Note. - Area forecasts for low-level flights in 14.6.16 (iv and v) shall be prepared in accordance with regional air navigation agreement, similar to the corresponding AIRMET information.

14.6.5.6 New Provision inserted to read thus : Aerodrome Forecasts Format, Issuance and Period of Validity

(*a*) Aerodrome forecasts (TAF) shall be issued and disseminated in the TAF code form prescribed by the World Meteorological Organization (WMO), in accordance with the template shown in Appendix 4, Table A4-1 of PANS- MET (DOC 10157), following the content and order of elements indicated therein.

Note 1—The TAF code form is contained in the Manual on Codes (WMO-No. 306), Volume I.1, Part A -Alphanumeric Codes.

Note 2—In addition to the meteorological information listed in Annex 3, 6.2.1.3, TAF also contains : a) identification of the type of forecast ; b) location indicator ; c) time of issue of forecast ; d) identification of a missing forecast, when applicable ; e) date and period of validity of forecast; and f) identification of a cancelled forecast, when applicable,as indicated in the template shown in Appendix 4, Table A4-1 PANS- MET (DOC 10157).

(*b*) TAF shall be disseminated in ICAO meteorological information exchange model (IWXXM) form in addition to the dissemination of the TAF in accordance with (14.6.5.2 f)

Note—The technical specifications for IWXXM are contained in the Manual on Codes (WMO-No. 306),Volume I.3, Part D - Representations Derived from Data Models. Guidance on the implementation of IWXXM is provided in the Manual on the ICAO Meteorological Information Exchange Model (Doc 10003).

14.6.5.7 New provision inserted to read thus : Inclusion of Meteorological Elements in Aerodrome Forecasts

(*a*) **Surface wind** : In forecasting surface wind, the expected prevailing direction shall be given. When it is not possible to forecast a prevailing surface wind direction due to its expected variability, for example, during light wind conditions (less than 1.5m/s (3 kt)) or thunderstorms, the forecast wind direction shall be indicated as variable using "VRB". When the wind is forecast to be less than 0.5m/s (1 kt), the forecast wind speed shall be indicated as calm. When the forecast maximum speed (gust) exceeds the forecast mean wind speed by 5 m/s (10 kt) or more, the forecast maximum wind speed shall be indicated. When a wind speed of 50m/s (100 kt) or more is forecast, it shall be indicated to be more than 49m/s (99 kt).

(*b*) **Visibility** : When the visibility is forecast to be less than 800 m, it shall be expressed in steps of 50 m; when it is forecast to be 800 m or more but less than 5 km, in steps of 100 m; 5 km or more but less than 10 km, in kilometre steps; and when it is forecast to be 10 km or more, it shall be expressed as 10 km, except when conditions of CAVOK are forecast to apply. The prevailing visibility shall be forecast. When visibility is forecast to vary in different directions and the prevailing visibility cannot be forecast, the lowest forecast visibility shall be given.

Note—The visibility included in TAF refers to the forecast prevailing visibility.

(*c*) **Weather phenomena** : One or more, up to a maximum of three, of the following weather phenomena or combinations thereof, together with their characteristics and, where appropriate, intensity, shall be forecast if they are expected to occur at the aerodrome :

- freezing precipitation ;
- freezing fog ;
- moderate or heavy precipitation (including showers thereof) ;
- low drifting dust, sand or snow ;
- blowing dust, sand or snow ;
- duststorm ;
- sandstorm ;
- thunderstorm (with or without precipitation) ;
- squall ;
- funnel cloud (tornado or waterspout) ; and
- other weather phenomena given in PANS-MET (Doc 10157) 2.2.4.2.3, as agreed between the meteorological service provider, the appropriate ATS authority and the operators concerned. The expected end of occurrence of those phenomena shall be indicated by the abbreviation "NSW".

(*d*) **Cloud** : Cloud amount shall be forecast using the abbreviations "FEW", "SCT", "BKN" or "OVC" as necessary. When it is expected that the sky will remain or become obscured and clouds cannot be forecast and information on vertical visibility is available at the aerodrome, the vertical visibility shall be forecast in the form "VV" followed by the forecast value of the vertical visibility. When several layers or masses of cloud are forecast, their amount and height of base shall be included in the following order :

(*a*) the lowest layer or mass regardless of amount, to be forecast as FEW, SCT, BKN or OVC as appropriate ;

(*b*) the next layer or mass covering more than 2/8, to be forecast as SCT, BKN or OVC as appropriate ;

(*c*) the next higher layer or mass covering more than 4/8, to be forecast as BKN or OVC as appropriate ; and

(*d*) cumulonimbus clouds and/or towering cumulus clouds, whenever forecast and not already included under (a) to (c).

Cloud information shall be limited to cloud of operational significance; when no cloud of operational significance is forecast, and "CAVOK" is not appropriate, the abbreviation "NSC" shall be used.

(*e*) **Temperature** : When forecast temperatures are included in accordance with regional air navigation agreement, the maximum and minimum temperatures expected to occur during the period of validity of the TAF shall be given, together with their corresponding times of occurrence.

14.6.5.8 New provision to read thus : Use of Change Groups

Note : Guidance on the use of change and time indicators in TAF is given in Appendix 4, Table A4-2 of PANS MET.

(*a*) The criteria used for the inclusion of change groups in TAF or for the amendment of TAF shall be based on any of the following weather phenomena or combinations thereof being forecast to begin or end or change in intensity :

- freezing fog ;
- freezing precipitation ;
- moderate or heavy precipitation (including showers) ;
- thunderstorm ;
- duststorm ; and
- sandstorm.

(*b*) The criteria used for the inclusion of change groups in TAF or for the amendment of TAF shall be based on the following :

(1) when the mean surface wind direction is forecast to change by 60º or more, the mean speed before and/or after the change being 5 m/s (10 kt) or more ;

(2) when the mean surface wind speed is forecast to change by 5 m/s (10 kt) or more ;

(*c*) when the variation from the mean surface wind speed (gusts) is forecast to change by 5 m/s (10 kt) or more, the mean speed before and/or after the change being 7.5 m/s (15 kt) or more ;

(*d*) when the surface wind is forecast to change through values of operational significance. The threshold values shall be established by the meteorological service provider in consultation with the appropriate ATS authority and the operators concerned, taking into account changes in the wind which would :

(1) require a change in runway(s) in use ; and

(2) indicate that the runway tailwind and crosswind components will change through values representing the main operating limits for typical aircraft operating at the aerodrome ;

(*e*) when the visibility is forecast to improve and change to or pass through one or more of the following values, or when the visibility is forecast to deteriorate and pass through one or more of the following values :

(1) 150, 350, 600, 800, 1 500 or 3 000 m ; or

(2) 5 000 m in cases where significant numbers of flights are operated in accordance with the visual flight rules ;

(*f*) when any of the following weather phenomena or combinations thereof are forecast to begin or end :

(1) low drifting dust, sand or snow ; or

(2) blowing dust, sand or snow ; or

(3) squall ; or

(4) funnel cloud (tornado or waterspout) ;

(*g*) when the height of base of the lowest layer or mass of cloud of BKN or OVC extent is forecast to lift and change to or pass through one or more of the following values, or when the height of the lowest layer or mass of cloud of BKN or OVC extent is forecast to lower and pass through one or more of the following values :

(1) 30, 60, 150 or 300 m (100, 200, 500 or 1 000 ft) ; or

(2) 450 m (1 500 ft) in cases where significant numbers of flights are operated in accordance with the visual flight rules ;

(*h*) when the amount of a layer or mass of cloud below 450 m (1 500 ft) is forecast to change :

(1) from NSC, FEW or SCT to BKN or OVC ; or

(2) from BKN or OVC to NSC, FEW or SCT ;

(*i*) when the vertical visibility is forecast to improve and change to orpass through one or more of the following values, or when the vertical visibility is forecast to deteriorate and pass through one or more of the following values : 30, 60, 150 or 300 m (100, 200, 500 or 1 000 ft) ; and

(*j*) any other criteria based on local aerodrome operating minima, as agreed between the meteorological service provider and the operators concerned.

Note—Other criteria based on local aerodrome operating minima are to be considered in parallel with similar criteria for the issuance of SPECI developed in response to PANS MET Doc 10157 2.1.2.2.2 h.

(*k*) When a change in any of the elements given in Annex 3, chap. 6,6.2.1.3 is required to be indicated in accordance with the criteria given in PANS-MET (Doc 10157) chapter 4, 4.1.3.2, the change indicators "BECMG" or "TEMPO" shall be used followed by the time period during which the change is expected to occur. The time period shall be indicated as the beginning and end of the period in whole hours UTC. Only those elements for which a significant change is expected shall be included following a change indicator. However, in the case of significant changes in respect of cloud, all cloud groups, including layers or masses not expected to change, shall be indicated.

(*l*) The change indicator "BECMG" and the associated time group shall be used to describe changes where the meteorological conditions are expected to reach or pass-through specified threshold values at a regular or irregular rate and at an unspecified time during the time period. The time period shall normally not exceed 2 hours but in any case, shall not exceed 4 hours.

(*m*) The change indicator "TEMPO" and the associated time group shall be used to describe expected frequent or infrequent temporary fluctuations in the meteorological conditions which reach or pass specified threshold values and last for a period of less than one hour in each instance and, in the aggregate, cover less than one-half of the forecast period during which

the fluctuations are expected to occur. If the temporary fluctuation is expected to last one hour or longer, the change group "BECMG" shall be used in accordance with 14.6.18.10.8.4 or the validity period shall be subdivided in accordance with 14.6.18.10.8.6.

(*n*) Where one set of prevailing weather conditions is expected to change significantly and more or less completely to a different set of conditions, the period of validity shall be subdivided into self-contained periods using the abbreviation "FM" followed immediately by a six-figure time group in days, hours and minutes UTC indicating the time the change is expected to occur. The subdivided period following the abbreviation "FM" shall be self-contained and all forecast conditions given before the abbreviation shall be superseded by those following the abbreviation.

(*o*) The probability of occurrence of an alternative value of a forecast element or elements shall be indicated, as necessary, by use of the abbreviation "PROB" followed by the probability in tens of per cent and the time period during which the alternative value(s) is (are) expected to apply.The probability information shall be placed after the element or elements forecast and be followed by the alternative value of the element or elements. The probability of a forecast of temporary fluctuations in meteorological conditions shall be indicated, as necessary, by use of the abbreviation "PROB" followed by the probability in tens of per cent, placed before the change indicator "TEMPO" and associated time group. A probability of an alternative value or change of less than 30 per cent shall not be considered sufficiently significant to be indicated. A probability of an alternative value or change of 50 per cent or more, for aviation purposes, shall not be considered a probability but instead shall be indicated, as necessary, by use of the change indicators "BECMG" or "TEMPO" or by subdivision of the validity period using the abbreviation "FM". The probability group shall not be used to qualify the change indicator "BECMG" nor the time indicator "FM".

(*p*) The number of change and probability groups shall be kept to a minimum and shall not normally exceed five groups.

14.6.6 Replace heading to read thus : Meteorological Information Containing Advisories, Alerts, Warnings, (SIGMET, AIRMET) and Notices

14.6.6.1 SIGNET INFORMATION

Insert Notes to read thus :

Note 1 — Procedures and technical specifications related to this section are contained in the PANS-MET (Doc 10157), Section 6.4.

Note 2 — SIGMET information applies to the whole airspace within the lateral limits of the FIR, that is, to the FIR and to the UIR. The particular areas and/or flight levels affected by the meteorological phenomena prompting the issuance of the SIGMET are included in SIGMET information.

14.7.3.6 is amended to read thus —

Aeronautical Fixed Service (AFS) requirements and system characteristics shall comply with:

(*a*) ICAO Annex 10, Volume III, Part I Chapter 8. for Technical provisions associated with AFTN.

(*b*) Implementation aspects of AFTN/AMHS to support the exchange of messages and/or digital data between aeronautical fixed stations.

14.7.5.18(a)(vi) is amended to read thus :

14.7.5.18(a)(vi) Radio Navigation Aids

14.7.5.18(a)(vi)(AA) Specifications for Radio Navigation Aids

14.7.5.18(a)(vi)(AB) Specification for ILS.

14.7.5.18(a)(vi)(AC) Localizer and glide path frequency pairing

14.7.5.18(a)(vi)(AD) The pairing of the runway localizer and glide path transmitter frequencies of an instrument landing system shall be taken from the following list in accordance with the provisions of Volume V, Chapter 4, 4.2 :

Localizer (MHz)	Glide path (MHz)	Localizer (MHz)	Glide path (MHz)
108.1	334.7	110.1	334.4
108.15	334.55	110.15	334.25
109.9	333.8	111.9	331.1
109.95	333.65	111.95	330.95

14.7.5.18(a)(vi)(AE) In those regions where the requirements for runway localizer and glide path transmitter frequencies of an instrument landing system do not justify more than 20 pairs, they shall be selected sequentially, as required, from the following list :

Sequence number	Localizer (MHz)	Glide path (MHz)
1	110.3	335.0
2	109.9	333.8
3	109.5	332.6
4	110.1	334.4
5	109.7	333.2
6	109.3	332.0

Sequence number	Localizer (MHz)	Glide path (MHz)
7	109.1	331.4
8	110.9	330.8
9	110.7	330.2
10	110.5	329.6
11	108.1	334.7
12	108.3	334.1
13	108.5	329.9
14	108.7	330.5
15	108.9	329.3
16	111.1	331.7
17	111.3	332.3
18	111.5	332.9
19	111.7	333.5
20	111.9	331.1

14.7.5.18(a)(vi)(AF) Where existing ILS localizers meeting national requirements are operating on frequencies ending in even tenths of a megahertz, they shall be reassigned frequencies, conforming with 3.1.6.1 or 3.1.6.1.1 as soon as practicable and may continue operating on their present assignments only until this reassignment can be effected.

14.7.5.18(a)(vi)(AG) Existing ILS localizers in the international service operating on frequencies ending in odd tenths of a megahertz shall not be assigned new frequencies ending in odd tenths plus one twentieth of a megahertz except where, by regional agreement, general use may be made of any of the channels listed in 3.1.6.1 (see Volume V, Chapter 4, 4.2).

14.7.5.18(a)(vi)(AH) Specification for VHF omnidirectional radio range (VOR)

14.7.5.18(a)(vi)(AJ) Radio frequency

14.7.5.18(a)(vi)(AK) The VOR shall operate in the band 111.975 MHz to 117.975 MHz except that frequencies in the band 108 MHz to 111.975 MHz may be used when, in accordance with the provisions of Volume V, Chapter 4, 4.2.1 and 7.2.3.1, the use of such frequencies is acceptable. The highest assignable frequency shall be 117.950 MHz. The channel separation shall be in increments of 50 kHz referred to the highest assignable frequency. In areas where 100 kHz or 200 kHz channel spacing is in general use, the frequency tolerance of the radio frequency carrier shall be plus or minus 0.005 per cent.

PART 15 : SAFE TRANSPORT OF DANGEROUS GOODS BY AIR

15 Introduction Paragraph 2 is amended to read thus:

This Part of Nig.CARs is based on the Standards and Recommended Practices (SARPs) in ICAO Annex 18: The Safe Transport of Dangerous Goods by Air; to the Convention on International Civil Aviation (Chicago Convention) Amendment 12. It further incorporates the ICAO Doc 9284: Technical Instructions For The Safe Transport Of Dangerous Goods By Air (Technical Instructions) which Nigeria fully complies with.

15.2.1.1 is amended to read thus Approval to Transport Dangerous Goods

(b) Each operator shall comply with the provisions contained in ICAO Doc 9284. Technical Instructions for the safe Transport of Dangerous Goods by Air hereinafter referred to as "Technical Instructions" on all occasions when dangerous goods are carried, irrespective of whether the flight is wholly or partly within or wholly outside the territory of NIGERIA.

15.2.1.4 is amended to read thus Technical Instructions

(*a*)No person may perform any function or activity related to the safe transport of dangerous goods by air except in compliance with provisions of the ICAO Doc 9284 (Technical Instructions on safe transport of dangerous goods by air).

PART 21 — REMOTELY PILOTED AIRCRAFT SYSTEMS

21.4 is amended to read thus Remote Pilot Aircraft Operator Certificate (ROC)/ UAS Operator Certificate (UOS)

Note : In Nig.CARs RPAS Operator Certificate (ROC) shall be read as stands for ROC or UOC as applicable.

21.11 RPA Personnel Licence is replaced with the following

21.11.1.1 Remote Pilots of RPA in the certified category are required to hold RPL issued in accordance with Part 2 of these Regulations.

21.11.1.2 Remote Pilots of UAV/RPA in the open or specific category are required to hold remote pilot Certificate of Competency issued by the Authority

IS 21.11.1.2 Sample of remote pilot Certificate of Competency

TEMPLATE

FEDERAL REPUBLIC OF NIGERIA

Unmanned Aircraft Systems

Remote Pilot Certificate of Competence

This certificate is issued in accordance with Nig.CARs Part 21 Subsections 2.1.1& 9.7.1

Flyer ID: NCAA/RPCC/00001

First Name: Amadi
Last name: John
Date of Issue: 06/10/2025
Date of Expiry: 05/10/2028

Name of AAO:
Arco Aviation Academy

AAO Registration Number:
NCAA/A0/001

Affix Passport

CATEGORY
OPEN
SPECIFIC

Signature/Date:

Chairman, Flight Standards Group
For: Director General of Civil Aviation

This certificate is valid provided the conditions outlined in the table overleaf are met and is subject to revocation, amendment or suspension at the discretion of the NCAA.

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S/N	OPERATIONAL CATEGORIES	WEIGHT CATEGORIES	FLYING RESTRICTIONS	RISK LEVEL	LINE OF SIGHT	AGE LIMITATION	ALTITUDE LIMITATION	REMARK
1	OPEN	NANO (less than 250g)	Allows flying over people (restricted to daylight hours)	LOW RISK	VLOS / BVLOS	UAV/RPA Pilot must be at least 16 years old	Maximum altitude of 400 feet ***	Does not require authorization before operating the UAV/RPA but MUST be registered
		MICRO (250g but less than 2kg)	Avoid flying over people	LOW RISK	VLOS / BVLOS	UAV/RPA Pilot must be at least 16 years old	Maximum altitude of 400 feet ***	Require authorization to operate the UAV/RPA
		SMALL (2kg but less than 25kg)	Avoid flying over people	LOW RISK	VLOS / BVLOS	UAV/RPA Pilot must be at least 16 years old	Maximum altitude of 400 feet ***	Require authorization to operate the UAV/RPA
2	SPECIFIC	MEDIUM (25kg but less than or equal to 150kg)	Avoid flying over people	MODERATE RISK	VLOS / BVLOS	UAV/RPA Pilot must be at least 16 years old	Maximum altitude of 400 feet ***	Require authorization to operate the UAV/RPA

ACRONYMS:
AAO: Approved Aviation Organization
BVLOS: Beyond Visual Line Of Sight
RPA: Remotely Piloted Aircraft
RPCC: Remote Pilot Certificate of Competence
UAV: Unmanned Aircraft Vehicle
VLOS: Visual Line Of Sight

KEYS
*** A specific authorization is required for flights beyond 400ft
☑ Means authorized
NOTE Remote Pilot Competence for RPA under the certified category is beyond the scope of the Nig.CARs Part 21 and this RPCC

Signature/Date:

Chairman, Flight Standards Group
For: Director General of Civil Aviation

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SCHEDULE OF FEES AND CHARGES IS AMENDED THUS:

6.56 Remotely Piloted Aircraft Systems (RPAS) Certificate

6.56.7 Approved Aviation Organization Certificate — N800,000.00

6.56.8 Remote Pilot Competency Certificate (Issue/Renewal/Re-Issue) — N50,000.00

ISSUED AT ABUJA UNDER THE SEAL OF THE COURT and the hand of the Presiding Judge this 20th day of November, 2025

MADE AT ABUJA this 20th day of November, 2025

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CAPT. CHRIS ONA NAJOMO
Director-General of Civil Aviation