

Numbers

ICAO:

Air navigation commission: **19** members appointed by **council**

President elected for: **3 years**

Denunciation takes **6 months**

Rome convention: Right to damages lost if no action taken within **2 years**

Aircraft nationality & registration marks:

Height of marks under **wings**: At least **50 centimetres**

Height of marks on **fuselage**: At least **30 centimetres**

Personnel licensing:

ICAO co-pilot time: **50%** contribution

EASA co-pilot time: **100%** contribution

ICAO "night": Centre of sun disc **6°** below the horizon

IR applicant:

50 hours cross country as PIC, 10 hours in aeroplanes

CPL applicant:

200 hours total, **150** integrated

10 hours instrument, **5** hours instrument ground

20 hours cross country **540km/300NM**

ATPL applicant:

250 hours **total**, **70** hours PIC

200 hours **cross country**, **100** hours PIC/Co-pilot performing

100 hours **synthetic flight trainer**, **25** hours flight procedure trainer/basic instrument flight trainer

100 hours **night** flight as PIC/Co-pilot

75 hours **instrument time**. **30** hours may be **instrument ground** time

Flight instructor:

FI age: >18

To teach CPL: 500 hours total, 200 **instructing**

Applicant for type rating course: **70** hours PIC

CPL age: >18

Examiners authorization: 3 years

Single engine ratings valid for **2 years**

Flight crew license by a **third state**: Valid not exceeding **1 year** provided the basic license is still valid

Proficiency check for revalidation: **3 months** in advance

Operator proficiency check valid for **6 months**

Medical deferment: Doesn't exceed **6 months** for flight crew engaged in **non-commercial operations**

60 – 65: Multi pilot crew operations only

Class 1 change from 12 months to 6 months when:

Single pilot operations: Above 40

In any case have reached **60**

Class 2:

60 months to 40

24 months from 40 to 50

12 months thereafter

Flight plan:

Flight plan should be submitted 60 minutes prior to departures

Uncontrolled flight plan amendment/cancellation: EOBT 60 mins

Controlled flight plan amendment/cancellation: EOBT 30 mins

Airborne flight plan 10 mins before entry

Reporting point time difference: **2 minutes or 5% TAS difference**

Communication failure within radar: Maintain speed/level for **7 minutes**

Communication failure **not** within radar: Maintain speed/level for **20 minutes**

Communication failure: Land at destination within **30 minutes** of flight plan ETA

Land at aerodrome other than destination: Inform within **30 minutes**

First usable flight level: **3000ft AMSL or 1000ft AGL**

Flight levels:

Magnetic **track** easterly below 290: Odd (VFR +500ft)

Magnetic **track** westerly below 290: Even

FL290 & 410: Easterlies

RVSM above 290 - 410: 1000ft

Non RVSM above 290 - 410: 2000ft

VFR flight above congested areas: 1000ft

VFR flight above anywhere else: 500ft

IFR flight above mountainous terrain: 2000ft (600m) & 8km from highest obstacle

IFR flight above anywhere else: 2000ft (600m) & 8km from highest obstacle

PANS:

Obstacles in flight: 150m

Omnidirectional departure: Climb before turn: 120m (394ft)

Straight departure: Departure that does not deviate more than 30°

SID PDG: 3.3% with all engines operating

Minimum obstacle clearance at departure end of runway: 0ft

Minimum sector altitude (MSA): **300m** within **25NM** from the homing facility of the approach procedure (IAF)

Track guidance for **straight** departure: **20km** max distance from DER

Track guidance for **turning** departure: **10km** max distance from DER

Protection area:

25° or 3°/s for departure whichever is **lesser**

20° for circling to land

15° for missed approaches

Missed approach:

Missed approach climb gradient: **2.5%** can be reduced to **2%**

MOC for intermediate phase: 30m

MOC for final phase: 50m

Pilot reaction 0 – 3 seconds

Intermediate missed approach: Where 50m obstacle clearance is obtained & can be maintained

Procedure turn for category A & B: 1 minute

Procedure turn for category C, D & E: 1 minute & 15 seconds

Vertical distance between **wheels & glide path antenna**:

A & B: 6

C & D: 7

Speed for **circling approach**:

ABCDE – 100, 100+35, 135+35....

Tolerances:

VOR tolerance: $\pm 4.5^\circ$

VOR accuracy: $\pm 5.2^\circ$

$\pm 4.5^\circ$ for VOR where less than 300m obstacle clearance prevails, accuracy is $\pm 7.8^\circ$

DME fix tolerance: $\pm 0.46\text{km} + 1.25\%$

RSR fix tolerance within 40NM: $\pm 3.1\text{km}$

DR track intersected at 45° & will not be more than 10NM in length

Straight in approach: 30° or less

Minimum obstacle clearance:

Initial MOC: At least 300m

Intermediate MOC: 300m reducing to 150m

No FAF MOC: 90m

FAF MOC: 75m

FAP max distance from threshold: **10NM**

Glide path optimum: 3° or 5.2%

Glide path maximum: 3.7° or **6.5%**

Glide path intercepted 300m to 900m for a distance of 3 & 10NM

Threshold used for reference when: Threshold elevation is **more than 2m below** the aerodrome elevation

NDB established: $\pm 5^\circ$

Corridor width: $\pm 5\text{NM}$

Holding:

Above FL140: 1min 30 seconds – 240 IAS

Below FL140: 1 min – 230 IAS

MOC guaranteed in holding area 300m height for a range of **5NM**

Offset joining procedure: **30°**

5° zone of flexibility

Altimeter 0 -30000ft: $\pm 20\text{m}$ (60ft)

Altimeter 0 -50000ft: $\pm 25\text{m}$ (80ft)

Transition altitude not less than 3000ft AGL

Transition altitude rounded up to the next full 1000ft

No transgression zone (NTZ):

From threshold of nearer runway to point at which 1000ft vertical separation is reduced between aircraft

Not less than 610m

Parallel runway operations are in progress:

Reduced radar separation of 3NM between approaching aircraft is Mode 2

Minimum(Adjacent) mode 2 radar separation: 2NM

Mode C transponders: Reports in increments of 100ft

Transponder accuracy: 25ft

Air traffic services:

CTR lateral limit: **5NM** on approach side

Y – 22.5NM between 30° & 90° above FL200

Z – 15NM between 30° & 90° below FL190

ATS time correct within 30s of UTC

Class airspace speed limits:

For Class A, B & C (IFR): No limits

For VFR class C & the rest = 250 IAS

Change over points: 60NM

ATS route designator: Shall not exceed 6

ATS route designator: Be kept to a maximum of **5**

Lower limit of TMA should be at least **700ft/200m above ground or water**

ATIS message maximum **30 seconds**

Air traffic management

FIX: At least 45° separated at a distance of 15NM

DR: At least 45° separated at a distance of 15NM

NDB: At least 30° separated at a distance of 15NM

VOR: At least 15° separated at a distance of 15NM

Independent parallel approaches:

When one approach diverges by 30° from miss approach track of adjacent approach

Minimum vertical separation: 1000ft/300m

Established at least 2NM prior to intercepting glide path/MLS elevation angle

Intercepted normally 30° not exceeding 45°

Separation for radar

L: 8- , M: 3+, H: 2+

Separation no radar (Time)

All: 2 mins

ARRIVING: L behind M/H: 3 mins (Unless opposite direction = 2 min)

Radar separation same localizer (Independent):

Absolute minimum: 2.5NM

Minimum: 3NM

Minimum unless prescribed: 5NM

With wake turbulence: 5NM

3NM between aircraft on same localizer course

PSR identification after departure: 1NM blip

Departure separations:

3 min if preceding aircraft >20kts

2 min if preceding aircraft >40kts

1 min if they are flying diverging tracks of more than **45°**

Departing aircraft may take-off in any direction until **5 minutes** before arriving aircraft

Same runway opposing aircraft separation: Less than **760m**

Speed adjustment on final: +/-20kts until **4NM** from threshold

Longitudinal separation:

- Based on DME: 20NM
- Same track opposite direction: 10NM
- 10NM if preceding aircraft >20kts faster
- 10 minutes for aircraft flying same route, altitude & cruising level
- Passing through a level of another aircraft on same track: 15 minutes
- Passing through a level of another aircraft on same track **absolute minimum**: 5 minutes
- 3 minutes same track and >40kts faster
- 5 minutes if preceding aircraft >20kts faster

SRA approach terminated 2NM before touchdown.

Unless accuracy permits, distance & level given each 0.5NM

Runway transmission not interrupted while aircraft is in a distance of 4NM from touchdown

Clearance to land given at least 2NM before touchdown

For radar identification execute a turn 30° or more

Aircraft shall not be vectored to boundary closer than 2.5NM

Crossing levels: 300ft no RVSM

Crossing levels: 200ft in RVSM

Mach number technique separation:

Distance: **80NM** minimum

11 – Mach number = Minutes

Wind change: 2 kts tailwind, 5 kts crosswind and 10 kts headwind

Radar controller to non-radar controller: 8NM

EAT:

When it differs: 5 minutes or more

When expected to hold 30 minutes or more

As soon as possible: 10 mins

CEU: 15 minutes

Altimeter setting rounded **down** to nearest hectopascal

AIS:

ID numbers for P, D, & R areas shall not be re-used for **one year**

Aerodromes:

Runway friction coefficient:

Good: 0.40

Medium: 0.35 to 0.30

Poor: 0.25

RESA: Starts at runway **strip** minimum length 90m

Clearway shouldn't exceed **½ TORA**

Radio altimeter: Laterally from centreline 60m, can be reduced to 30m & 300m before threshold

Eye to wheel height: Approximately 16m

Configurations A guard lights: Installed when RVR <550m

Holding positions:

50m: RWY length 900m or more

30m: RWY length less than 900m

Simple lighting: 420m total, crossbar at 300m

Cat I lighting: 5 crossbars, 150m between crossbars, 300m between 1/2/3 centrelights, 900 m total

Normal VASIS: 3 lights per wing bar

T-VASIS: 4 lights per wing bar

Normal PAPI: One wing bar with 4 lights

Abbreviated PAPI: One wing bar with 2 lights

Touchdown zone markings: 150m from threshold

Aerodrome reference code:

Reference field length: **1-2-3-4: 8 12 18 more***

Code letters:

- Wing span: **A-B-C-D-E-F = Up to... 1-2-3-5-6-8***

- Wheel span: **A-B-C-D-E-F = 4-6-9-14-14-16***

Taxiway width code letter: **A-B-C-D-E-F = 7x1, 7x1.5, 7x2, 7x2.5... ***

Runway width codes: **1(8), 2(3), 3(0), 4(5)***

Runway width to number of stripes: **Width ÷ 3.75***

Aiming point: **Less 8 12 24 = 1 – 2 – 3 – 4***

Touch down zone markings: **<9 – 9 – 12 – 15 – 24(Clock) = 1 – 2 – 3 – 4 – 6***

Centreline lights:

Alternate red and white 900m to 300m

Red from 300m to runway end

High intensity obstacle lights: 150m day flashing lights

Fire-fighting response time: Normal 2 minutes, maximum 3 minutes

Radio altimeter operating area: 300m x 60m, rate of change 2% per 30m

Facilitation

Advance notification: 2 hours in advance

Security

Hijacked: Proceed at a level which differs by 1000ft above FL290 or 500ft below FL290

100m from other parking areas

Aircraft investigation when max mass is over 2250kg