

Quick Reference

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Contents

Wake Turbulence	1
Contaminated Runway Operations	1
Takeoff and Landing Wind Limits	2
Other Autoland limitations	4
Other wind limits	5
First Officer limits	5
Airport limitations	5
Aircraft Dimensions	6
Weight Limits	6
Passenger zones	6
Loading	7
Turbulence speeds	8
General speeds	8
Engine	9
Fuel Limitations	10
Fuel Capacity	11
Hydraulics	11
Electrical	11
Pressurisation	11
Air conditioning / Ventilation	12
Ice protection	12
Flaps/slats	13
Gear	13
APU	14
Navigation	14
Oxygen	15
Autopilot	15

Autoland Warning Light	16
Airport lighting	16
Miscellaneous	16
Single Engine operations	17
Double engine failure	17
Emergency calls to cabin	18

Procedures 19

Takeoff with tailwind or crosswind > 20kt	19
General	19
Holding	19
PRNAV (RNP 1) SID/STAR	20
Visual Approach	21
Circling	21
Non-Precision Approach - Selected vertical and lateral	21
RNAV or Non-Precision overlay approach	22
SLS approach	23
ILS approach	24
LVO takeoff	25
LVO landing	25

Wake Turbulence

[EOMA 8.3.9]

Final Approach

Type	Separation
A380	7nm
Heavy	5nm
Upper Medium (e.g. 757,707)	4nm (UK only)

Note: Boeing 757 and Boeing 737-800/900 are classified as heavy for the purposes of final approach in some countries.

Departure

Type	Separation
A380	3 mins
Heavy	2 mins

Note: Add **1 minute** if departure is not from the same position

Contaminated Runway Operations

Takeoff or landing is not permitted with: [EOMB 2.1]

- Wet ice
- Water on top of compacted snow
- Dry Snow or Wet Snow over Ice
- RWYCC 0

Damp runway [EOMB 4.5.1/4.12.1] Use Wet performance

Contamination < 25% of runway area [EOMB 4.6.2] Use Wet performance

Contamination <3mm [EOMB 4.6.2] Use Wet performance

Takeoff/Ldg Dispatch condition assessment matrix OQA Ops Data

Landing condition assessment matrix (RCAM) OQA Ops Data

Ldg Dispatch, wet ice and layered contaminants [EOMB 2.1] .. 2 alternates reqd

Minimum cleared width [EOMB 2.1] . 30m (check snowbanks: EOMB 4.6.8)¹

“Slippery when wet”

Takeoff EOMB 4.5.4

Landing EOMB 4.12.3

¹Cleared width ≤45m does not need to be treated as a narrow runway for V₁ etc.

Takeoff and Landing Wind Limits

Takeoff or Manual Landing, Runway Width $\geq 45\text{m}$

[FCOM LIM.AG.OPS]

Max Headwind No limit

Max Tailwind 15kt (landing: Conf Full if $>10\text{kt}$)

Runway Condition	Max Crosswind (including gust)
<ul style="list-style-type: none"> • Dry • Damp • Wet ($\leq 3\text{mm}$ water) • Slush ($\leq 3\text{mm}$) • Snow ($\leq 3\text{mm}$, dry or wet) • Frost • $\leq 25\%$ contamination 	NEO Takeoff 35kt Otherwise 38kt
<ul style="list-style-type: none"> • Compacted Snow ($\text{OAT} \leq -15^\circ\text{C}$) 	29kt
<ul style="list-style-type: none"> • Dry Snow ($>3\text{mm}$, $\leq 100\text{mm}$) • Wet Snow ($>3\text{mm}$, $\leq 30\text{mm}$) • Compacted Snow ($\text{OAT} > -15^\circ\text{C}$) • Dry Snow over Compacted Snow • Wet Snow over Compacted Snow • Slippery when wet 	25kt
<ul style="list-style-type: none"> • Water ($>3\text{mm}$, $\leq 12.7\text{mm}$) • Slush ($>3\text{mm}$, $\leq 12.7\text{mm}$) 	20kt
<ul style="list-style-type: none"> • Ice (cold and dry) 	15kt

Autoland without automatic rollout

[FCOM LIM.AFS.20]

Headwind	
A321	15kt
A319 OEI	15kt
A319 AEO	20kt
Otherwise	30kt
Tailwind	
A319 CONF3	5kt
Otherwise	10kt
Crosswind	
A321	10kt
A319 OEI	10kt
Otherwise	20kt
Crosswind must not be greater than that for manual landing.	

Autoland with automatic rollout

[FCOM LIM.AFS.20]

Headwind	
A321	15kt
A319 OEI	15kt
A319 AEO	20kt
Otherwise	30kt
Tailwind	
A319 CONF3	5kt
Otherwise	10kt
Crosswind	
A321	10kt
A319 OEI	10kt
A320 CEO with sharklets	15kt
A320 NEO with inop thrust reverser	15kt
(idle reverse used on remaining reverser)	
Otherwise	20kt

Takeoff or Manual Landing, Runway Width <45m, ≥30m

[FCOM PRO.SPO.60]

Max Headwind No limit
 Max Tailwind 15kt (Conf Full if >10kt)

Runway Condition	Max Crosswind (including gust)
• Dry	NEO Takeoff 35kt Otherwise 38kt
• Wet (≤3mm water)	33kt
• Contaminated (not icy)	10kt

Other Autoland limitations

[FCOM LIM.AFS.20]

Alert height 100ft
 Approved configurations
 A320CEO OEI CONF FULL only
 Otherwise CONF 3, CONF Full
 Rwy conditions for automatic rollout Dry, Wet
 Glideslope CEO:2.5° to 3.15°; NEO: 2.5° to 3.25°
 Max airport elevation
 A320CEO 2500ft
 A319, A320NEO, A321NEO 9200ft
 Min pressure altitude NEO:-2000ft; CEO:-1000ft
 Auto rollout with one reverser inop Idle reverse only²
 A319 Max weight (emergency only) 69000kg
 Min weight
 A320 NEO 44000kg
 A321 NEO 52500kg

²no limitation for A320CEO without sharklets

Other wind limits

LEAP-1A starting max crosswind [FCOM LIM.EBG]	45kt
Passenger door operation [FCOM LIM.AG.OPS]	65kt
Cargo door operation [FCOM LIM.AG.OPS]	40kt (50kt w/caveats)
Cargo door closed before [FCOM LIM.AG.OPS]	65kt

First Officer limits

[EOMB 2.1]

3* FO	No planned tailwind, no flap 3 landing
Max crosswind	20kt
Takeoff minimum	550m RVR
Circling minima	5000m
Min runway width, no specific training	45m
No contaminated, slippery, RWYCC \leq 4, windshear or autoland	

Airport limitations

Max slope [FCOM LIM.AG.OPS]	$\pm 2\%$
Max runway altitude [FCOM LIM.AG.OPS]	9200ft
Nominal runway width [FCOM LIM.AG.OPS]	45m
Minimum runway width [FCOM LIM.AG.OPS]	30m
Min planning fire fighting category [EOMA 8.1.2.1]	
Departure/Destination	A321:7, A319/A320: 6 ³
Alternates	UK: 5; Non-UK: 4

³Up to 2 categories less is OK with caveats – see EOM-A

Aircraft Dimensions

[FCOM DSC.20.20]

	A319	A320 (no sharklets)	A320 (sharklets)	A321
Wingspan	34.1m		35.8m	
Length	33.84m	37.57m		44.6m
180° turn	20.5m	22.8m		28.3m
Widest sweep	Wing tip			Tail

Weight Limits

[FCOM LIM.AG.WGHT, GHM E.4]

Weight	A319	A320CEO	A320NEO	A321
Max Takeoff	68000kg	77000kg	79000kg	89000kg
Max Taxi	68400kg	77400kg	79400kg	89400kg
Max Landing	61000kg	66000kg	66300kg	77300kg
Max Zero Fuel	57000kg	62500kg	62800kg	73300kg
Minimum	35400kg	37230kg	40600kg	46600kg

	A319	A320	A321
Compartment 1	2268kg	Compartment 1 3402kg	2202kg
		Compartment 2	3468kg
Section 41	1326kg	Compartment 3	2426kg
Section 42	1695kg	Compartment 4	2110kg
Compartment 5	1497kg	Compartment 5	500kg
			500kg

Passenger zones

[EOMB 7.3.2]

	A	B	C
A319	1-9	10-18	19-26
A320	1-10	11-20	21-31
A321	1-13	14-28	29-40

Zone counts must be accurate to within ±3 passengers.

Loading

A319 Protocol:[\[GHM 5.4.1.2\]](#)

First 150 bags to Section 41/42

Next 50 to Compartment 5

Overspill to Compartment 1

A320 Protocol:[\[GHM 5.4.1.2\]](#)

First 85 bags to Compartment 1

Next 60 bags to Compartment 3

Overspill to Compartment 4

No planned usage of Compartment 5

A321 Protocol:[\[GHM 5.4.1.2\]](#)

First 100 bags to Compartment 3

Next 50 bags to Compartment 4

Overspill to Compartment 2

LMCs [\[EOMB.7.4\]](#)

$\Delta\text{Weight} \leq +250\text{kg}$ **and** $|\Delta\text{CG}| \leq 2\%$ No action required

$\Delta\text{Weight} > +250\text{kg}$ **or** $|\Delta\text{CG}| > 2\%$ Recalculate performance

New paperwork required for -20/+10 passengers

A320 Forward CG [\[EOMB 4.9.1.1\]](#) $\text{CG} < 27\% \text{MAC}$

Turbulence speeds

[FCOM PRO.ABN.MISC]

A319/A320CEO	
<FL200	250kt
≥FL200	275kt
≥FL320	M0.76
A320NEO	
<FL200	260kt
≥FL200	280kt
≥FL310	M0.76
A321NEO	
<FL200	275kt
≥FL200	305kt
≥FL270	M0.76

General speeds

[FCOM LIM.AG.SPD]

V_{MO}	350kt
M_{MO}	0.82M
Max Tire speed	195kt
Max speed for wipers	230kt
Max speed cockpit window open	200kt
V_{MCA} (rounded up)	
A319	0ft:108kt; 2000ft:106kt
A320CEO	0ft:110kt; 2000ft:108kt
A320NEO	0ft:114kt; 2000ft:114kt
A321NEO	0ft:110kt; 2000ft:107kt
V_{MCG} CONF 1+F (rounded up)	
A319	0ft:105kt; 2000ft:103kt
A320CEO	0ft:111kt; 2000ft:109kt
A320NEO	0ft:116kt; 2000ft:116kt
A321NEO	0ft:118kt; 2000ft:115kt

Engine

[FCOM LIM.ENG]

TOGA time	5 mins (10 mins single engine)
EGT	
TOGA	CFM56:950°C; LEAP-1A:1060°C
MCT	CFM56:915°C; LEAP-1A:1025°C
CFM56 Start	725°C
LEAP-1A Air Starting	875°C
LEAP-1A Ground Starting	750°C
Oil	
CFM56 min quantity[EOMB 2.3.4.8]	9.5qt+0.5qt/hr
LEAP-1A min quantity[EOMB 2.3.4.8]	8.9+0.45qt/hr; minimum 10.6qt ⁴
Max cont temp	140°C
Max trans temp	155°C
Min start temp	-40°C
Min takeoff temp	CFM56:-10°C; LEAP-1A:19°C
LEAP-1A Min Oil Pressure	17.4psi
LEAP-1A Max Oil Pressure (oil temp < 50°C)	130.5psi
LEAP-1A Max Oil Pressure (oil temp > 50°C)	145psi
Max N1	CFM56:104%; LEAP-1A:101%
Max N2	CFM56:105%; LEAP-1A:116.5%
CFM56 Starter ⁵	
No running engagement when N2>20%	
Pause between cycles	20 sec
Cooling period after 4 failed cycles	15min
LEAP-1A Starter ⁵	
No running engagement when N2>63%	
Pause between cycles	60 sec
Cooling period after 3 failed cycles	15min
Max reverse	>70kt

⁴If engines have been shut down for >60min, decrease requirement by 3qt

⁵An automatic start that includes up to three start attempts is considered one cycle

Fuel Limitations

[FCOM LIM.FUEL]

Min qty for takeoff 1500kg

Temperature

Jet A1, minimum -43°C

Jet A1, maximum CEO:54°C; NEO:55°C

A319/A320 fuel imbalance

Takeoff

Outer tanks balanced 500kg⁶

Inner tanks balanced 370kg

In-flight, outer tanks balanced

One inner tank full 1500kg

Fuller inner tank 4300kg 1600kg

Fuller inner tank < 2250kg No Limitation

In-flight, max outer tank imbalance OK if sides are balanced⁷

A321 fuel imbalance

Takeoff 400kg⁸

In-flight

One wing tank full 1320kg

Fuller wing tank 4000kg 1450kg

Fuller wing tank ≤2350kg No limitation

⁶This is the figure for the heavier inner tank being full, which is the worst case. Check the FCOM if this is too limiting.

⁷Also OK if lighter outer tank, and the heavier inner tank are on the same side, with the difference between the inner tanks ≤3000kg.

⁸This is the figure for the worst case scenario where the heavier wing tank has ≥3000kg. Check the FCOM if this is too limiting.

Fuel Capacity

[FCOM DSC.28.10.20]

A319/A320 (approximate – varies slightly between airframes)	
Outer tanks	2 x 700kg
Inner tanks	2 x 5500kg
Center tank	6500kg
Total	18900kg
A321	
Wing tanks	2 x 6000kg
Center tank	6500kg
Total	18500kg

Hydraulics

[FCOM DSC.29.10]

Normal pressure	3000psi
RAT only pressure	2500psi
Green/Yellow differential for PTU activation	500psi

Electrical

Prelim prep min battery voltage [EOMB 2.3.4.2]	>25.5V
Battery check [EOMB 2.3.6.2]	charge current<60A within 10s

Pressurisation

[FCOM LIM.AIR]

Max pos diff	9.0psi
Max neg diff	-1psi
Safety valve	8.6psi
Max norm cabin alt	8000ft
Cab alt warning	9550ft±350ft
Ram air max diff [FCOM DSC.12.10.20]	1psi

Air conditioning / Ventilation

[FCOM LIM.AIR, FCOM PRO.NOR.SUP.ADVWXR]

Passengers on board without Air Con Max 20mins
Do not simultaneously use packs and ground LP Air Conditioning Unit.
Do not use HP ground unit when APU is supplying bleed air.
Max OAT for norm avionics ventilation 49°C⁹
Max OAT with EXTRACT OVRD and Packs Off 39°C⁹

Ice protection

Ground icing conditions [EOMB 2.3.9] ... OAT ≤ 10°C + vis moist | gnd contam
Flight icing conditions [EOMB 2.3.9] TAT ≤ 10°C + vis moist
Eng anti-ice not reqd [EOMB 2.3.13] climb/cruise, SAT < -40°C, no CBs

Accreted ice [FCOM PRO.NOR.SUP.ADVWXR]

Wing anti-ice operative

Min speed, Conf Full V_{LS} + 5kt

Min Speed, < Conf Full V_{LS} + 10kt

Wing anti-ice inoperative

Min speed V_{LS} + 10kt/ GREEN DOT

Avoid extended flight in icing conditions with slats extended

Use “Ice Accretion” in A-ICE field of FS+

Fan ice shedding [EOMB 2.3.9]

CFM56

Icing conditions, OAT ≤ 3° 70%N1 for 30 secs every 30 mins

FZRN/FZDZ/FZFG/+SN 70%N1 every 10 mins, no hold time

Before takeoff 70%N1 for 30 secs

LEAP-1A

Icing conditions, OAT ≤ 3° | eng vib .. 50%N1 for 5 secs every 60 mins

Icing conditions on ground > 120 mins Inspection reqd

Before takeoff 50%N1 for 5 secs

⁹Higher temperatures are allowable with a time limit – see FCOM

Flaps/slats

[FCOM LIM.F_CTL, FCOM LIM.AG.SPD]

Max flaps/slats altitude 20000ft

A319/A320

Conf 1 230kt
Conf 1+F 215kt
Conf 2 200kt
Conf 3 185kt
Conf Full 177kt

A321

Conf 1 243kt
Conf 1+F 225kt
Conf 2 215kt
Conf 3 195kt
Conf Full 186kt

Gear

Extend [LIM.AG.SPD] 250kt
Retract [LIM.AG.SPD] 220kt
Extended [LIM.AG.SPD] 280kt/M.67
Max taxi speed, single tyre deflated [LIM.LG] 7kt
Max taxi speed, both tyres deflated [LIM.LG] 3kt
Max steering angle, both tyres deflated [LIM.LG] 30°
Max brake temp for takeoff [LIM.LG] 300°

APU

[FCOM LIM.APU]

Starter duty	3 cycles then 60 mins
Maximum N	107%
Max start EGT	<35000ft: 1090°C, >35000ft 1120°C
Max running EGT	675°C
Max Altitudes	
Two packs	<15000ft
Engine start	<20000ft
One pack	<22500ft
Electrical power	<41000ft
Battery start (emerg elec config)	<25000ft
Normal start	<41000ft
Air bleed for wing anti-icing	Not permitted
Approximate fuel burn [EOMB 5.1]	2kg/min
Ops with “Low Oil Level” ECAM [FCOM.PRO.ABN.ADV]	10hrs

Navigation

Max IRS latitudes [FCOM LIM.NAV]	73°N,60°S ¹⁰
Altimeter tolerances [EOMB 2.3.6.11]	
ADR vs Airfield elevation	±75ft
ADR vs ADR	±20ft
ISIS vs ADR	±100ft
Altimeter temperature corrections	QRH SI

¹⁰This is worst case assuming all ADIRUs have the same magnetic variation table. Some aircraft are able to fly to 82°N for some longitudes. If one ADIRU has a different table check the FCOM for more limiting maximum latitudes.

Oxygen

[FCOM LIM.OXY]

Minimum Dispatch Oxygen Pressure

A319/A320CEO, ref temp 40^{o11}

3 crew 1024psi

2 crew 781psi

A320NEO/A321NEO ref temp 40^{o11}

3 crew CAPT:780psi, FO:550psi

2 crew CAPT:550psi, FO:550psi

Minimum Endurance

Emergency Descent (reg normal), 3 crew

A319/A320CEO 13 mins

A320NEO/A321NEO 15mins

Cruise at FL100 (reg normal), 2 crew

A319/A320CEO 107mins

A320NEO/A321NEO 105mins

Fire (reg 100%), 8000ft, all crew 15mins

Autopilot

[LIM.AFS]

Engagement after TO >100ft agl and >5 secs

Engagement after manual go-around >100ft agl

Minimum approach engagement height

Circling 500ft agl

RNAV visual approach 500ft agl

FINAL APP, V/S or FPA mode 250ft agl

PAR 250ft agl

ILS, CAT1 displayed on FMA 160ft agl

SBAS, APPR1 displayed of FMA 160ft agl

Cat II approach, manual landing [FCOM LIM.AFS.20] 80ft agl

Other phases A319/A320 500ft agl

Other phases A321 900ft agl

¹¹On ground, ref temp is average of OAT and cockpit temp.

Autoland Warning Light

[DSC.22.30.80.30]

- RA < 200ft and
- one or more autopilots engaged and
- LAND or FLARE annunciated and
- one or more of:
 - Both autopilots disconnect (N.B. RA NCD case)
 - RA > 15ft and localiser signal lost or deviation > ¼ dot
 - RA > 100ft and glideslope signal lost or deviation > 1 dot
 - Difference between rad alt > 15ft
 - Long or untimely flare detected (newer aircraft only)

Airport lighting

Runway lighting [LIDO GEN-1.3.1.6]

Red and white	900m
Red	300m

Miscellaneous

German corner	KRH R270/12D
Alternate ranges [EOMB 5.1]	
Takeoff	320nm
Enroute	A319:380nm; A320/A321:400nm
Ballpark diversion fuel	15kg/nm
Approx Power settings	
Two engine approach, V_{app}	50% N1
Single engine approach, V_{app}	70% N1
Two engine cruise	(50 + Altitude/1000)% N1
Flex corrections [EOMB 2.3.10]	
Anti-ice on	subtract 5°C ¹²
QNH reduction	subtract 1°C/2hPa ¹²
easyJet Landing Distance Factor	1.15
Rev Idle on Wet runway OK	RWYCC 2, Unfactored LD < LDA

¹²Flex must remain >TREF (A319:ISA+30; A320:ISA+29; A321:ISA+15) and >OAT

Single Engine operations

Avoid reducing below V_{LS} (including GPWS/Windshear) [FCOM PRO.ABN.ENG]

Autoland capability [FCOM LIM.AFS.20] Cat III single (A320CEO \Rightarrow Conf Full)

Available NPA Autopilot modes [FCOM LIM.AFS.10]

A320/A321 All

A319 LOC/VS, LOC/FPA, HDG/VS, TRK/FPA¹³

Do not extend full flaps until established on final descent. [FCOM PRO.ABN.ENG]

Use Conf 3 if a level off is required. [FCOM PRO.ABN.ENG]

Check QRH ABN.ENG.OEI Circling Approach if circling required

Sharklet automatic rollout [FCOM LIM.AFS] Idle reverse only

Double engine failure

[QRH ABN.ENG]

Landing Configuration

Forced Landing . . . Flap 2 (slats only), Gear Down (gravity extension)

Ditching Flap 2 (slats only), Gear Up, Ditching button pushed

Still air glide ratios

300kt 2nm per 1000ft (500ft per nm, 4.7°)

Green dot 2½nm per 1000ft (400ft per nm, 3.75°)

CONF 2, Gear Down 1.6nm per 1000ft (~600ft per nm, 5.6°)

Headwind correction ~50ft per nm for each 10kt average headwind

Altitude loss in turn ~1000ft per 90° (conservative at low altitudes)

¹³All modes are permitted Flight Director only

Emergency calls to cabin

[EOMB 3.80.5]

Ground ops alert:

“Attention! Crew at Stations”

Notification of a potential emergency in-flight:

“Attention! Crew at Stations”

Alert cancellation :

“Cabin crew, normal operations”

Evacuation :

“Evacuate. Unfasten your seatbelts and get out”

NITS on flight deck :

“Senior cabin crew member to the flight deck”

NITS via interphone :

“Senior cabin crew member to the interphone” or 3 double chimes

Unplanned emergency landing :

“Attention, Crew! Brace, Brace!”

Rapid decompression [EOMB 3.80.2]:

Auto announcement – no Flight Crew PA required.

Planned emergency landing :

2000ft “Cabin crew, take up landing positions”

500ft “Brace, Brace”

Severe turbulence :

“Cabin crew and passengers be seated immediately”

Procedures

Takeoff with tailwind or crosswind > 20kt

[EOMB 2.3.12]

- Set 50% N1
- Release brakes
- Set 70% N1
- When GS>15kt increase thrust to reach TO thrust by 40kt GS.
- Stick full forward until 80kt, neutral by 100kt

General

Procedure turn [LIDO GEN.1.5.5.6.1.2] 75 seconds from start of 45° turn

Holding

[LIDO GEN.1.5.5.7]

Joining

Turn anti-holdwise<110° to Outbound track Parallel entry

Turn holdwise<70° to Outbound track Teardrop entry

Otherwise Direct entry

Standard Right turns, parallel to airway

≤14000 1 minute

>14000 1½ minutes

Max holding speeds (Normal(Turbulent))

≤14000 230kt(280kt)

>14000, ≤20000 240kt(280kt/0.8M)

>20000, ≤34000 265kt(280kt/0.8M)

>34000 0.83M

PRNAV (RNP 1) SID/STAR

[FCOM PRO.SPO.51]

- **Minimum required equipment:**

- 1 FMGC; 1 MCDU; 1 GPS or 2 DMEs; 2 IRS; 1 FD; PFD and ND on PF side; 1 EFIS display on PM side. Additional procedure specific restrictions may be published. Check RNP 1.

- If GNSS is used as primary navigation source, check RAIM availability. If GNSS is not required and GPS PRIMARY is not available, carry out a navigational reasonableness check prior to IAWP.

- Database procedure should not be changed except for the addition of missing altitude or speed constraints. ATC “direct to” instructions may be accepted when above MSA. Max allowable XTK Error on RF¹ leg is 0.5nm.[\[EJ ppt\]](#)

- If GPS PRIMARY LOST or NAV ACCUR DOWNGRAD on one ND or MCDU continue with the unaffected one.

- Use raw data to identify and continue with FMGC that provides the correct position in case of:

- GPS PRIMARY lost on both NDs/MCDUs

- FMS1/FMS2 POS DIFF message

- CHECK IRS 1(2)(3)/FM POSITION (on MCDU)

- CHECK A/C POSITION

- FM/GPS POS DISAGREE ECAM

- Request reclearance if:

- NAV ACCUR DOWNGRAD on both sides

- Additional restriction (e.g. Dual FMC, GPS) no longer met

¹Radius to Fix

Visual Approach

[EOMB 2.3.18.3.7]

- Minimas: [EOMA 8.1.3.6]
 - Visibility 5km
 - Cloud ceiling 2500ft aal
- Downwind at Flap 1, S speed
- Flap 2, F speed at start of base turn
- Base Turn timing: 3s/100ft \pm 1s/kt of hw/tw from abeam threshold
- Shortly after turning base, gear down, continuous descent to landing.

Circling

[EOMB 2.3.18.3.5]

- If OEI, check weight (QRH ABN.19)
- Protected circling radius [LIDO GEN.1.5.5.6.2.5] 4.2nm from all RWY THR
- Landing runway in secondary flight plan
- Initial approach: Conf 3, gear down, F speed
- Select TRK/FPA
- Push V/S at least 100ft above circling minima
- Turn 45°
- 30 secs from wings level turn downwind (gives runway offset \approx 1.7nm)
- Activate secondary when downwind
- Descent point 3 secs per 100ft past abeam threshold
- Full flap when turning finals

Non-Precision Approach - Selected vertical and lateral

[EOMB 2.3.18.3.4]

- Fly a stabilised approach
- 0.3nm before descent point, set and pull FPA
- 1°FPA modifies descent profile by 100ft for each nm

RNAV or Non-Precision overlay approach

[EOMB 2.3.18.3.2/4]

- **Minimum required equipment:**
 - 1 FMS; 1 GPS; 2 IRS; 1 MCDU; 1 FD; 1 PFD (on PF side); 2 ND (temporary display OK); 2 FCU channels. [PRO.SPO.51]
- Max acceptable difference between altimeters 100ft
- RNP(AR)¹⁴ approaches are not yet authorised. [EOMA 8.3.2.6]
- A minimum procedure temperature will be promulgated on the approach chart:
 - Above this temp fully managed, uncorrected VNAV DA
 - Below this temp corrected gp, NAV/FPA, corrected LNAV DA
- Modifications to FMC database procedure prohibited with the exception of temperature corrections to minimum altitudes. [EOMA 8.4.5.2]
- Fly a stabilised approach if using FPA. Set and pull FPA 0.3nm before descent point.
- Chart vs. database:
 - Max vertical path difference (fully managed only) 0.1°
- For 3D approaches only, flight directors may remain on for landing if the glidepath is correctly coded to the threshold.
- APPR must be armed at least 2nm prior to final descent waypoint. It should be armed in the segment between the final descent waypoint and previous waypoint unless this segment is too short, in which case arm when level at final descent altitude.
- **RNAV approach:** Go around for:
 - >¾ index fly up or down (fully managed only)
 - XTK error > 0.3nm
 - NAV ACCUR DOWNGRAD reported by both FMGCs
 - FM/GPS POS DISAGREE ECAM
 - GPS PRIMARY LOST reported by both FMGCs.If GPS PRIMARY LOST or NAV ACCUR DOWNGRAD is reported by a single FMGC continue with the unaffected FMGC.
- **Overlay approach:** FINAL APP may continue to be used unless raw data indicates flight path deviation.

¹⁴LIDO chart update is in progress. May be titled RNAV(RNP) until completed.

SLS approach

- Check:
 - Aircraft SLS equipped¹⁵
 - FMA approach capability APPR1
 - SLS approach plate available¹⁶
 - Associated LPV-LP (SLS) available on ARRIVAL page
- LPV minimas not yet authorised – use LNAV/VNAV
- FMS fallback not yet authorised – do not deselect SLS on RADIO NAV page
- Engage both autopilots. Disconnect autopilot by 160ft AGL

¹⁵OFP attachment or FCOM Aircraft Configuration Summary. QRH Aircraft Configuration planned Feb 2023.

¹⁶EGNOS is approach procedure box, LPV minimas available.

ILS approach

Standard coverage [LIDO GEN.1.6.2.1]:

Localiser $\pm 10^\circ$	25nm (FAA 18nm)
Localiser $\pm 35^\circ$	17nm (FAA 10nm)
Glideslope $\pm 8^\circ$	10nm

Approach Ban [EOMA 8.4.3] 1000ft aal or DA if greater

Absolute minimas (DH/TDZ RVR) [EOMA 8.1.3.3.1]:

Cat I	200ft/550m
LTS Cat I	200ft/400m
Cat II	100ft/300m
Cat IIIA	<100ft/200m
Cat IIIB	0ft/75m

- Multiple RVRs not required for Cat I / LTS Cat I.
- Only relevant mid-point or stop end RVRs need to be accounted for.
- Required stop end RVR is always 75m.
- Required mid point RVR is also 75m if rollout is used, else it is 125m.

LIDO “Company” minimas [EOMA 8.1.5.3]

Cat IIIB	No DH
Cat IIIA	50ft RA

Required visual references: [EOMA 8.4.6/10/11]

Cat I	Elements of ALS, PAPIS or THR/TDZ markings/lights
Cat I LTS, Cat II	3 consecutive lights plus a lateral element
Cat IIIA	3 consecutive lights
Cat IIIB with DH	1 centre-line light
Cat IIIB No DH	None

FALS/IALS/BALS/NALS LIDO GEN 1.5.7.18.6

LVO takeoff

[EOMA 8.1.3.3]

- Absolute minima 125/125/125
- Reported RVR of initial part of Takeoff run can be replaced by pilot assessment.
- Only relevant RVRs must be considered.
- All passenger PEDS must be turned off. [EOMA 8.3.21]

LVO landing

[EOMB 2.3.18.3.1, QRH SI.20]

- All passenger PEDS must be turned off [EOMA 8.3.21]
- Check NOTAMS for airport facility downgrades (see LIDO 1.5.7.16.2)
- Check LVPs in force
- Check aircraft capability (Status page, ADDs, QRH Operational Data)
- Check minimas (including downgrades) and approach ban
- Check autoland wind limits (see page 3)
- Check runway condition limits (see page 4)
- Failure strategies
 - >1000ft aal Resolve by 1000ft, inc. amend DH ⇒ can continue
 - <1000ft, >AH Downgrade of landing capability ⇒ go-around
 - 350ft Incorrect selected course ⇒ go-around
 - <200ft Autoland warning light ⇒ go-around
 - <AH Only go around for autoland warning light
 - 30ft FLARE and/or THR IDLE not annunciated ⇒ go-around
- Extra calls:
 - 350ft, FMA:LAND PF:“Land”, PNF:“Checked”
 - 100ft (only with no DH) PNF: “100”, PF: “Continue”
 - 40ft, FMA:FLARE PNF:“Flare”
 - 10ft Auto callout: “Retard”
 - FMA:ROLLOUT PNF:“Rollout”
- Select reverse at touchdown
- Disconnect autopilot at taxi speed
- Notes:
 - Data Lock <700ft RA
(changes to V_{app}, Wind, Course, and ILS Freq inhibited.)
 - No action on FCU will disengage LAND mode

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