AD 2 AERODROMES

LPMA AD 2

LPMA AD 2.1 AERODROME LOCATION INDICATOR AND NAME

LPMA - MADEIRA

LPMA AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	ARP coordinates and site	LAT: 324139N LONG: 0164641W 1763 M, 225° GEO from THR RWY 23
2	Direction and distance of ARP from city or town	13.2 KM (7.1NM) BRG 067° GEO from Funchal Cathedral
3	Elevation/Reference temperature	58M / 191FT 26.1°C (AUG)
4	Geoid undulation at aerodrome elevation position	49M
5	MAG VAR/Annual change	4° W (2020) / 0.17° decreasing
6	AD Administration, address, telephone, telefax, telex, AFS	Post: ANA-SA Aeroportos de Portugal Direção dos Aeroportos da Madeira Aeroporto da MADEIRA 9100-101 SANTA CRUZ MADEIRA Phone: +351 291520700 Fax: +351 291524322, +351 291524819 AFS: LPMAYDYA SITA: FNCKAXH Email: madeira.airports@ana.pt URL: http://www.ana.pt
7	Types of traffic permitted (IFR/VFR)	IFR/VFR
8	Remarks	NIL

LPMA AD 2.3 OPERATIONAL HOURS

1	AD Administration	H24
2	Customs and immigration	H24
3	Health and sanitation	H24
4	AIS Briefing Office	AIS available through ARO Portugal (see GEN 3.1)
5	ATS Reporting Office (ARO)	ARO available through ARO Portugal (see GEN 3.1)
6	MET Briefing Office	H24
7	ATS	H24
8	Fuelling	H24
9	Handling	04:30-00:30 (03:30-23:30). On request 00:30-04:30 (23:30-03:30)
10	Security	H24
11	De-icing	NIL
12	Remarks	NIL

LPMA AD 2.4 HANDLING SERVICES AND FACILITIES

1	Cargo handling facilities:	High Lift Loader, Conveyor Belt, Fork Lifts, various Vehicles and Equipments
2	Fuel/oil types	100 LL, JET A1
3	Fuelling facilities/capacity	Hydrant system and fuel trucks. JET A1 - Total capacity 583.200 litres. Maximum delivery rate 75 litres per second. 100LL - capacity 1200 litres. Maximum delivery rate 60 litres per minute.
4	De-icing facilities	NIL
5	Hangar space available for visiting aircraft	NIL
6	Repair facilities for visiting aircraft	Minor repairs only
7	Remarks	Oxygen and related servicing: Oxygen available only in city with previous request or arrangement with TAP – AIR Portugal

LPMA AD 2.5 PASSENGER FACILITIES

1	Hotels	In cities: Funchal, Santa Cruz, Ribeira Brava, Machico,Santana, Ponta do Sol, Calheta and Porto Moniz Villages
2	Restaurants	AD restaurant - 976 seats available
3	Transportation	Buses and taxis
4	Medical facilities	First Aid treatment: daily 0800/2400. Other hours: Funchal hospital H24, Machico Medical Center H24, Santa Cruz Medical Center MON to FRI 0800/1800, SAT and SUN 0800/1300. Medical emergency services available on request
5	Bank and Post Office	Bank - MON to FRI - 08:30 / 18:30 Exchange Money Facilities - 05:00 / 01:00 Post Office - MON to FRI - 08:30 / 17:30 and 18:30 / 20:30 SAT, SUN and HOL - 17:00 / 20:30
6	Tourist Office	Daily 09:00 / 21:00
7	Remarks	NIL

LPMA AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	AD category for fire fighting	7 Higher category up to Cat 9 available by prior permission requested to Madeira Airport Director (LPMAYDYA) at least 72 hours prior operation.
2	Rescue equipment	4 Quick Response Rescue RIBs Each RIB is equipped with four inflatable (30 persons) liferafts making a total capacity of 120 persons. Two more similar RIBs are in standby, besides the four one's. Rescue equipment in accordance with CAT 9 requirements established in the Table 5.2 of ICAO Doc.9137-AN/898 Part 1.
3	Capability for removal of disabled aircraft	Recovery inflatable lifting bags and other equipment for elevation and removal of disable aircrafts (CAT I and II) up to A310 or B757.
4	Remarks	

© NAV Portugal, E.P.E.

LPMA AD 2.7 RUNWAY SURFACE CONDITION ASSESSEMENT AND REPORTING AND SNOW PLAN

1	Type(s) of clearing equipment	NIL
2	Clearance priorities	NIL
3	Use of material for movement area surface treatment	NIL
4	Specially prepared winter runways	NIL
5	Remarks	For further information, see also Section AD 1.2.2. - RUNWAY SURFACE CONDITIONS ASSESSMENT AND REPORTING AND SNOW PLAN.

LPMA AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATIONS DATA

1	Apron Surface and Strength		**APRON**	**SURFACE**	**STRENGTH**	
			A	Concrete	PCN 76/R/B/W/T	
2	Taxiway width, surface and strength		**TAXIWAY**	**WIDTH**	**SURFACE**	**STRENGTH**
			B and C	23M	Asphalt	PCN 80/F/A/W/T
			TAXILANE	**WIDTH**	**SURFACE**	**STRENGTH**
			A	23M	Asphalt	Taxilane as for accompanying Runways
3	Altimeter Checkpoint location and elevation		Apron A - 163FT			
4	VOR Checkpoint locations		NIL			
5	INS Checkpoint positions	**RAMP / STAND**	**INS COORORDINATES**	**ELEVATION (M/AMSL)**	**ACFT TYPE (CRITICAL)**	**PUSH-BACK TO TWY/TAXILANE**
		A01	324132.12N 0164641.43W	48M	A320	A
		A02	324133.01N 0164640.24W	48M	A320	A
		A03	324133.91N 0164639.05W	48M	A320	A
		A04	324134.80N 0164637.86W	48M	A320	A
		A05	324135.70N 0164636.67W	48M	A320	A
		A06	324136.60N 0164635.48W	48M	A320	A
		A07	324138.46N 0164632.87W	48M	B757-200	A
		A08	324139.45N 0164631.57W	48M	B757-200	A
		A09	324140.43N 0164630.27W	48M	B757-200	A
		A10	324140.98N 0164628.50W	48M	B757-200	A
		A11	324141.96N 0164627.20W	49M	B757-200	A
		A12	324142.92N 0164625.51W	49M	B757-300	A
		A13	324144.51N 0164624.51W	49M	A330-200	A
		A14	324144.45N 0164624.08W	50M	A320*	A
		A15	324145.45N 0164622.82W	50M	A320*	A
		A16	324146.07N 0164622.94W	51M	B752*	A
		A17	324146.51N 0164625.53W	51M	B752*	A
		A18	324147.06N 0164624.86W	51M	B747-200 a)	A
		A19	324133.84N 0164641.17W	48M	B747-200 b)	A

6	Remarks		Stands Marked with * - A14 and A15 as Stands A16 and A17 cannot be used simultaneously a) Nose Out Position. Stand A18 and Stands A14 to A17 cannot be used simultaneously b) Nose Out Position. Stand A19 and Stands A01 to A04 cannot be used simultaneously

LPMA AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	Use of aircraft stand ID signs, TWY guide lines and visual docking/parking guidance system at aircraft stands	Taxiing guidance system: In accordance with ICAO Annex 14
2	RWY/TWY markings and lights	Runways and Taxiways markings: Runways Designations, Runways Centre line, Thresholds, Touchdown Zone, Aiming Point, Runways Side Strips, Runway Holding Positions and Taxiways Centre line. Runways and Taxiways lights: Runways Centre Line, Thresholds, Runways Side Strips, Runways Holding Positions, Taxiways Edge and Taxiways Centre line. Other markings: Aircraft Stands, Break-away Zone, Distance to go Panels (7) at 310 Meters longitudinal spacing on both sides of Runways.
3	Stop bars	Taxiways “B” and “C”
4	Remarks	Aircraft Stands Taxilane Critical Wingspan: - Taxilane “A “- up/to 65M (inclusive)

LPMA AD 2.10 AERODROME OBSTACLES

In approach/Take-off areas			In circling area and at aerodrome	
RWY/Area affected	**Obstacle type Elevation Marking/Lighting**	**Coordinates**	Obstacle type Elevation Markings/LGT	**Coordinates**
a	**b**	**c**	**a**	**b**
23	See LPMA LPMA AD 2.24.04-1			
05	See LPMA LPMA AD 2.24.04-3			
Remarks:	The most significant obstacles outside approach and take-off areas are provided with day marking and obstruction lights. Zig-Zag pattern covering the Runway width below Runway 05 elevation, alterning black and yellow fields, and lighted with low-intensity obstacle lights. Runway 05 left side scarpe low intensity obstacle lights. The lights are placed and spaced along 850 meters from threshold.			

LPMA AD 2.11 METEOROLOGICAL INFORMATION PROVIDED

1	Associated MET Office	MADEIRA AMS
2	Hours of service	H24
3	Office responsible for TAF preparation Periods of validity	CPVM-AERO MWO/AMO 24 HR - Issuance every 6 Hours
4	Type of landing forecast	NIL
5	Briefing/consultation provided	Briefing on observed meteorological conditions: personal or by phone. Briefing on expected meteorological conditions: By phone provided by the CPVM-AERO MWO/AMO (see GEN 3.5.4).

© NAV Portugal, E.P.E.

6	Flight documentation Language(s) used	C, CR English, Portuguese
7	Charts and other information available for briefing or consultation	P, S, SWH, SWM, W
8	Supplementary equipment available for providing information	Self-briefing, Lightning detection, SATEL, WXR
9	ATS units provided with information	Madeira TWR and APP
10	Additional information (limitation of service, etc.)	MADEIRA AMS: Phone: +351 291 524 215 Email: lpma@ipma.pt CPVM-AERO MWO/AMO: Phone: +351 218 474 583 Fax: +351 218 402 370 Email: met.aero@ipma.pt

LPMA AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

Designations	TRUE BRG	Dimensions of RWY (M)	Strength (PCN) and surface of RWY and SWY	THR COORD RWY End COORD THR Geoid Undulation	THR elevation and highest elevation of TDZ of precision APCH RWY	Slope of RWY/SWY
1	2	3	4	5	6	7
05	044.54	2481x45	PCN 80/F/A/W/T ASPH/CONC	THR 324123.75N 0164701.50W RWY END 324224.50N 0164550.48W GEOID 49.2M	THR 44M	See LPMA LPMA AD 2.24.04-1
23	224.54		PCN 80/F/A/W/T ASPH/CONC	THR 324221.03N 0164554.54W RWY END 324120.28N 0164705.57W GEOID 49.1M	THR 58M	

Designations	SWY dimensions (M)	CWY dimensions (M)	Strip dimensions (M)	RESA	OFZ	Remarks
1	8	9	10	11	12	13
05	NIL	210x150	2601x150	105x90 ASPH/CONC	NIL	RWY FCT CLBR: 0.68 Runway 05/23 grooved between thresholds, 30 meters wide (15 meters each side of centerline)
23		200x150		90x90 ASPH/CONC		

LPMA AD 2.13 DECLARED DISTANCES

RWY Designator	TORA (M)	TODA (M)	ASDA (M)	LDA (M)	Remarks
1	2	3	4	5	6
05	2631*	2841	2631*	2481**	* Including 150 meters of pavement before Threshold ** RWY05 first 98,5M in concrete RWY23 first 113,5M in concrete
23	2631*	2831	2631*	2481**	

LPMA AD 2.14 APPROACH AND RUNWAY LIGHTING

RWY Designator	APCH light Type / Length / Intensity	THR Light colour/WBAR	VASIS type	TDZ length
1	2	3	4	5
05	A reduced simple approach lighting system 150 meters longitudinal intervals of 30 meters. LIL (lead-in-lighting) system curved along shore with an extension of 1583 meters and materialized with 17 sequenced flashing lights (xenon) spaced variable with 3 brightness intensity, according to consequence visibility and supplemented by 4 steady lights in last 180 meters of LIL system, terminated 2034 meters from THR. All light High Intensity. (See LPMA AD 2.24.13-1, LPMA AD 2.24.13-3, LPMA AD 2.24.13-5, LPMA AD 2.24.13-7, LPMA AD 2.24.13-9 and LPMA AD 2.24.13-11)	Green WBAR Lights 5 at each side of RWY	PAPI 3° both sides MEHT: 57FT PAPI both sides slewed 5 DEG to the right (to the sea). PAPIS on the Runway right side not visible on short final approach.	600 meters
23	A simple approach lighting system 420 metres longitudinal intervals of 60 metres, having a cross bar at 300 metres.		PAPI 3° left side MEHT: 57FT	

RWY Designator	RWY Centre Line Lights Length / spacing / colour/ Intensity	RWY edge Lights Length / spacing / colour/ Intensity	RWY End Lights Colour / WBAR	SWY Light Length / Colour	Remarks
1	6	7	8	9	10
05	2481M / 30M / White FM 1581M-2181M Red and White FM 2181M Red / Variable	2481M / 60M / White FM 1881M Yellow / Variable	RED	NIL	See AD 2.24.01-1
23	2481M / 30M / White FM 1581M-2181M Red and White FM 2181M Red / Variable	2481M / 60M / White FM 1881M Yellow / Variable		NIL	

© NAV Portugal, E.P.E.

LPMA AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

1	ABN/IBN location, characteristics and hours of operation	ABN (324137.28N 0164631.71W): ALTN FLG W G EV 10 SEC, HN
2	LDI location and lighting Anemometer location and lighting	LDI: NIL Anemometers: RWY 05: Right Side, 300M THR.Lighted RWY 23: Left Side, 300M THR. Lighted Middle Point: 1320M THR and Right side RWY05. Lighted
3	TWY edge and centre line lighting	All Taxiways
4	Secondary power supply/switch-over time	Secondary power supply available within 15 seconds
5	Remarks	NIL

LPMA AD 2.16 HELICOPTER LANDING AREA

1	Coordinates TLOF or THR of FATO	NIL
2	TLOF and/or FATO elevation	NIL
3	TLOF and FATO area dimensions, surface, strength, marking	NIL
4	True BRG of FATO	NIL
5	Declared distance available	NIL
6	APCH and FATO lighting	NIL
7	Remarks	NIL

LPMA AD 2.17 ATS AIRSPACE

1	Designation and lateral limits	MADEIRA CTR A circle with 5NM radius centred at ARP (324139N 0164641W)
2	Vertical limits	2000FT ALT (600M)
3	Airspace classification	C
4	ATS unit call sign / Language(s)	Madeira Approach, Madeira Tower EN, PT
5	Transition altitude	5000FT
6	Remarks	NIL

LPMA AD 2.18 ATS COMMUNICATION FACILITIES

Service designation	Call sign	Frequency	Hours of Operation	Remarks
1	2	3	4	5
APP	MADEIRA Approach	119.605 MHZ	HO	Primary
		120.455 MHZ	HO	Secondary
		121.500 MHZ	H24	Emergency
		243.000 MHZ	H24	Emergency
		279.050 MHZ	H24	
TWR	MADEIRA Tower	124.660 MHZ	H24	Primary

Service designation	Call sign	Frequency	Hours of Operation	Remarks
1	2	3	4	5
		121.500 MHZ	H24	Emergency
		243.000 MHZ	H24	Emergency
		279.050 MHZ	H24	
ATIS	MADEIRA Information	130.355 MHZ (arrivals) 121.630 MHZ (departures)	H24	ATIS Service also available by ACARS for Aircraft equipped with ACARS Management Unit. Providers are SITA for data link communications and MADEIRA Control for ATIS Service. Telephone Service: +351 291520633 or 2333 of NAV Portugal E.P.E. internal network.

LPMA AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type Category (MAG Variation)	ID	Frequency	Hours of operation	Site of transmitting antenna coordinates	Elevation of DME transmitting antenna	Remarks
1	2	3	4	5	6	7
DVOR (04° W - 2020)	FUN	112.200 MHZ	H24	324449.8N 0164219.6W		Coverage: 200NM FL500 Not usable: 240°/310° BYD 20NM BLW 9000FT
DME	FUN	CH 59X	H24	324449.3N 0164220.5W	500FT	Coverage: 200NM FL500 Not usable: 240°/310° BYD 20NM BLW 9000FT
DVOR (04° W - 2020)	SNT	114.900 MHZ	H24	330525.5N 0162102.3W		Coverage: 200NM FL500 Not usable: RDL050 BYD 29NM BLW 4000FT RDL066 BYD 31NM BLW 4000FT 070°/170° and 195°/250° BYD 10NM below 9000FT
DME	SNT	CH 96X	H24	330525.0N 0162101.3W	400FT	Coverage: 200NM FL500 Not usable: 070°/170° and 195°/250° BYD 10NM below 9000FT

LPMA AD 2.20 LOCAL AERODROME REGULATIONS

1. Limitations on use of aerodrome

Restricted to aircraft capable of maintaining two way communications with Madeira TWR.

The peculiar operation of MADEIRA AD and operating limitations are stated in paragraph 2 below.

For request of Airport Slots see paragraph GEN 1.2.2, Item 1.2.2.1

© NAV Portugal, E.P.E.

2. Special procedures and operating limitations

2.1 Operating at Madeira Aerodrome

Introduction

a. The Airport is located on a plateau on the east coast of Madeira Island. Except for the seaside, ground raises rapidly very closed to it. This fact generates, very often, wind variation and turbulence. Also severe low altitude wind shear conditions and / or micro burst are likely to be encountered.

b. Straight-in approaches not authorized from Funchal VOR to Runway 23.

Applicability

a. The items described below in “Crew requirements”, “Minimum training requirements”, “Line training” and “Aircraft Type change”, are mandatory to schedule and non-scheduled revenue flights involving aircraft with more than 10 passengers of capacity.

b. Pilots are informed that, any time, they may be required to show evidence to Madeira Airport Authorities of compliance with referred items.

Crew requirements

a. Initial experience
To operate at Madeira Airport, the Pilot-in-command must have a minimum of 200 flying hours as Captain on the concerned type of aircraft, before completing the initial training.

b. Recent experience
To operate at Madeira Airport, the Pilot-in-command must have performed there, on the last six months:

- one landing and take-off or,
- a flight simulator training comprising a landing and take-off on each runway, on a simulated adverse weather condition or,
- a line training flight to Madeira Airport, comprising a landing and take-off, assisted by a qualified instructor occupying the right-hand seat.

c. The Pilot-in-Command is authorized to operate to Madeira Airport (LPMA) for a period of six months starting from the date of issue.

Minimum training requirements

In order to operate at Madeira Airport, the operator must establish and accomplish beforehand a training program concerning the type of aircraft to be used. This training, if performed on local flights, must include at least, landings and take-off by day and night in both directions, emphasising:

a. the TKOF flight path to runway 23,

b. the TKOF flight path to runway 05,

c. the balked landing (go-around initiated in landing configuration from very low height) on both directions,

d. the let down and approach to both runways,

e. the operation effect on runway slope and dimensions and associated safety margins.

If the flight is to be performed in a flight simulator, the following procedures must be included in the training program, for each runway:

a. take-off with engine failure after V1,

b. relight after engine failure,

c. VOR approach,

d. balked landing and go-around,

e. visual approach,

f. landing,

g. weather conditions: wind - the maximums as indicated in paragraph 2.3. Severe turbulence, Windshear and up and down drafts, must be included in the different approaches,

h. one landing at night must be executed for each runway.

Line training

No line training is required if the flight simulator used is level D.
If level C flight simulator is used, line training must be performed with one landing and take-off in Madeira Airport, with an instructor occupying the right-hand seat

Aircraft type change

A Captain qualified in Madeira Airport in one type of aircraft, changing to another type, must do the flight simulator training program mentioned in paragraph “Minimum training requirements” or, instead, will land and take-off in both runways without passengers on board and no line training will be required on both cases.

Training program

The training program referred in paragraph “Minimum training requirements” above will have to be approved by ANAC (Autoridade Nacional da Aviação Civil).

Deviations or unconformities

Any deviations or unconformities stated from requirements stated in the previous paragraphs will be dealt in a case by case basis.

2.2 Responsibility

Compliance with operating limitations is mandatory. Any deviation, landing or take off without clearance must be reported to ANAC by Tower, with the exception of the situations described in bullet “d” of Wind out of limits procedures.

2.3 Operating procedures and limitations

Wind / Turbulence

Wind Information

a. Control Tower will provide two minutes mean wind values at Rosário and touchdown zone simultaneously with landing clearance or missed approach / go around instructions when landing clearance cannot be issued due to winds exceeding airport published landing limits.

b. Further wind information after a landing clearance has been issued will be provided at Pilot’s request or upon occurrence of variations from the last 2 minutes mean wind direction of 60º or more, or mean wind speed of 3 knots or more.

c. Instantaneous wind read outs will be provided at pilot’s request.

Wind Limitations

a. When landing

1. Maximum of two minutes mean Wind Speed Values indicated by the Touchdown anemometer:

- In the sector 300° to 010° MAG (clockwise) - 15KT, with the maximum Wind Gust of 25KT
- In the sector 020° to 040° MAG (clockwise) - 20KT, with the maximum Wind Gust of 30KT
- In the sector 120° to 190° MAG (clockwise), and if Runway in use is 05 - 20KT with a maximum Wind Gust of 30KT, and if Runway in use is 23 - 15KT, subject also to maximum Wind Gust of 25KT as indicated by MID Anemometer.

2. Maximum of two minutes mean Wind Speed Values,including Gust indicated by the MID or ROSÁRIO Anemometers

- In the Sector 200° to 230° MAG (clockwise) - 25KT.

b. When Taking-off

- 1.Maximum of two minutes mean Wind Speed Values indicated by the MID anemometer:
- In the sector 300° to 010° MAG (clockwise) - 20KT with no Gust limitations

 © NAV Portugal, E.P.E.

- In the sector 020° to 040° MAG (clockwise) - 25KT with no Gust limitations
- In the sector 120° to 190° MAG (clockwise) and if Runway in use is 05 - 25KT with no Gust limitations, and if Runway in use is 23 - 20KT, also with no Gust limitations

NOTE: The limitations above do not supersede any Operators or Aircraft Operations Manual (AOM) limitations if these are more restrictive

Turbulence

- Attention should be paid to the WIND DIRECTION INDICATORS located on the south side of the runway, near each touchdown area. They will reflect unexpected wind changes. Occasionally they will indicate wind from opposite directions;
- When landing on RWY 05 wind differences greater than 5 KT, between Rosário and MID anemometers, may indicate turbulence on final;
- When landing on RWY 23 with winds from South and Westerly Sectors, one may experience severe turbulence at low altitude over the RWY Threshold;
- Headwind or nearly so, up to 15 KT will cause “WEAK” turbulence on final;
- Wind of 15 KT from sector 020° to 050° MAG (clockwise) may cause “MODERATE” turbulence;
- Wind of 15 KT or even less from sector 300° to 020° MAG (clockwise) may cause “SEVERE” turbulence;
- Down drafts or up drafts are to be expected near the threshold of runways 05 and 23.

NOTE: Pilots are strongly requested to report to the Control Tower as soon as possible any turbulence and/or windshear that may affect operational conditions.

Authorization Required Details

To obtain from ANAC (Portuguese competent Authority) an "Authorization Required" to fly RNP AR APCH procedure in LPMA, for which a procedure-specific approval is required, Operator has to provide it's flight crew members an additional ground training and FSTD training, as appropriate, to cope with the mitigations procedures that were described in it's FOSA.
The Operator should ensure that the additional training programmes, inserted in Operator's Manual (normally Part-D), for such procedures, include as at least all of the following:

- what Regulation (EU) n° 965/2012 in AMC 1 SPA.PBN.100 (b) alínea c)(2) from (vi) till (xii), describes as necessary;
- the crew training recommendations and mitigations stated in the procedure flight operational safety assessment (FOSA); and
- specific training and operational provision published in this AIP, which is for Madeira, at least, special emphasis on a Missed Approach for RWY 05 in which "TOGA to LNAV" (or similar function) fails, in a "RF" leg;
- another approach with Missed Approach in One Engine Inoperative and a "loss of GNSS navigation".
- At least, taking in account what above is stated, 2 approaches for RWY 05 and 2 Approaches for RWY 23 in FFS should be trained. One of these, for RWY 05, should be for a full stop landing, with left limiting crosswind.
- Training and Checking may be combined and conducted by the same person, TRE (Type Rating Examiner), CRE (Class Rating Examiner) or SFE (Synthetic Flight Examiner) during LPCs (License Proficiency Check), OPCs Operator Proficiency Check) or specials FFS (Full Flight Simulator) sessions for this purposes.

In the correct sequence to obtain the Authorization, the operator shall e-mail to ops@anac.pt its intentions, and:

(i) Operator has to prove to ANAC, via its AOC Appendix II "Opspecs", or Letter of Authorization, from its Competent Authority that is Approved for "Generic" RNP AR APCH (with "RF" leg capability), before an application for an Authorization may be accepted.

(ii) A FOSA taking in account, at least, that for RWY 05, FROP is shorter than recommended, due terrain morphology in final approach leg / Decision point (DA/H) is in "RF" leg / RWY 23 Missed Approach Sector bank angle, limited by Speed Restriction.

(iii) Evidence of "Training and Checking" program as above stated.

(iv) Evidence of operational procedures for normal, abnormal and contingency situations and specific for LPMA RNP AR APCHs taking in account what (ii) states.

Note:

- DME/DME is not applicable (except for a contingency aircraft extraction from the procedure, after 6 minutes of a "GPS PRIMARY LOST", while flying in IRS only).

- As a contingency and in case of remote, or extremely remote failures, with a probability of loss of all navigation information (or similar situation), an immediate turn to 139° (by the shorter direction) and climbing to 3000FT or above, will always extract in a safe manner the aircraft from the obstacle areas. Contact Madeira TWR or APP for further clearance.

When "Authorization Required" is obtained from ANAC, a Letter of Authorization will be sent to "operator" with all conditions stated.
One of the conditions is a "Temporary Initial Limitation" for specific operational experience gaining:

(i) Each approved pilot Commander for this operation will operate the first RNP AR APCH in VMC conditions.

(ii) The 2nd and 3rd approach will be limited with CMV (Converted Meteorological Visibility) for RNP 0.3 (for any of the runways and their "approach category" A, B, C or D) plus 500M.

(iii) 4th approach and further, according to the approval that all of operator's aircraft / pilot are approved by its competent authority (i.e. RNP 0.1 minima).

RWY Backtrack Operations

RWY backtrack operations forbidden to aircraft with MTOW above 30 TONS. These operations must be done only on turning bays. Exception made to Medical Evacuation, SAR and Emergency Flights.

Departure procedures

Introduction

- Pilots are advised to select full power on Take-off in the presence of turbulence or down draft reports.

- Take-off on both runways must be made in a minimum visibility of 2800 meters. Required take-off alternate.

- There are curved trajectories defined for both runways and for all engines operating.

- Each operator must prepare its own engine failure procedure.

Take-off Runway 05

1. After take-off start right turn, as soon as practicable to avoid high ground on the left side (see appropriate visual take-off chart-MAP/LPMA-TKOF).

2. See description of SID on paragraphs LPMA AD 2.22.

Take-off Runway 23

1. After take-off start the left turn, as soon as practicable, to avoid high ground on the right side (see appropriate visual take-off chart-MAP/LPMA-TKOF).

2. With westerly winds, tail windshears may be expected. Anemometer readings reported by tower at the end of the runway and at Rosario may indicate this possibility.

3. See description of SID on paragraphs LPMA AD 2.22.

Night Operations

A captain can operate at night provided he has previously operated and got familiar with Madeira Airport during daytime.

Training flights are forbidden daily during night period, between 23:00 (22:00)and 08:00 (07:00).

3. Radio Communication

Departing Traffic shall contact Madeira TWR/APP in freq 124.660 MHZ or 119.605 MHZ according to ATIS information, til 10MIN before estimated time for departure, for:

1. AD information.

2. modify/confirm ETD.

 © NAV Portugal, E.P.E.

NOTE: Start up of flights affected by AFTM measures are to observe the stated in paragraph 1.9.5 of Air Traffic Flow Management (ATFM) and Airspace Management (ENR 1.9).

4. Acceptance of private Flying Club and Delivery aircraft

24 hours PPR required.

5. Pilots information report

Pilot's shall report to ATC or Airport Operations, as soon as possible, any deficiency that may affect operational conditions.

6. Apron operation and procedures

6.1 Push-back, Start-up and Taxiing

Aircraft engine start-up is only allowed after push-back manoeuvre with aircraft positioned in breakaway area.

All aircrafts must activate anti-collision lights before starting engines.

To prevent blast damage in aircraft equipment and personnel, all aircraft operations on the apron must be made using lowest power setting.

Pilots shall contact MADEIRA Tower for departure approval, 10 minutes before Start-up, and shall provide the following information:

a. Call Sign

b. Stand Number

c. Cruising Level

d. ATIS ACK

6.2 Marshaller

Marshaller assistance is compulsory for parking in entire airport Apron area. Stand entrance is only allowed with Follow-me assistance.

6.3 Engine Test runs

Engine test runs must be made on the runway. Engine test runs in idle power may take place on Stands, with the prior authorization of the Airport Operations.

Test are only permitted between 06:00 to 23:00 (05:00 to 22:00) and with the prior authorization of the Airport Operations .

7. Parking Restrictions

Due to Aircraft parking shortage at LPMA AD it is mandatory submit a request according procedures on GEN 1.2.2 item 1.2.2.1 - Scheduling Coordination.

Push-Back from A01 and A02 facing East, must be coordinated with Airport Operations and with the Follow-me assistance.

8. Refuel Operations

All refuelling operations with passengers on board, embarking or disembarking, are only allowed with a RFFS Vehicle on prevention and must have previous authorization of Airport Operations.

Accordingly Crews must contact the following frequencies:

- Ground Operations Groundforce - frequency 131.850 MHZ
- Ground Operations Portway - frequency 131.875 MHZ

9. Handling Services

All commercial aircraft operating in Madeira Aerodrome must be represented by one of the Agents mentioned on the list below.

Taxi / private crews are advised to contact Agent before operation.

Crew, Passengers and baggage transportation is only provided by full Agents only.

Cargo handling is only provided by full handling Agents only.

Authorized Full Handling Agents:

GROUNDFORCE PORTUGAL

Duty Station Manager

Telephone: +351 291520810

Mobile Phone: +351 965641227

FAX: +351 291520824

E-mail: stationmanager.fnc@groundforce.pt

AFTN: LPPTTAPF

SITA: FNCKKXH

Operations Center/Flight Watch/- VHF 131.850 MHZ

Telephone: +351 291520807

FAX: +351 291520829

E-mail: hoc.fnc@groundforce.pt

AFTN: LPPTTAPF

SITA: FNCSCXH

PORTWAY HANDLING PORTUGAL, SA

Telephone: +351 291520920

FAX: +351 291520921

SITA: FNCKPXH

Email: Duh.funchal@portway.pt

VHF FREQ 131.875 MHZ

OMNI HANDLING - MADEIRA STATION

Telephone: +351 291520860

Mobile Phone: +351 910275986

Email: madeira@omnihandling.com

Station Manager - Mobile Phone: +351 910275986 - Email: ivone.correia@omnihandling.com

LPMA AD 2.21 NOISE ABATEMENT PROCEDURES

1. GENERAL

Landing and/or take-off is forbidden by law between 00:00 (23:00) and 06:00 (05:00), except in cases of force majeure. However, according to governmental deliberation, exception regime has been granted for Madeira Airport in which landing and/or take-off of aircraft engaged in commercial aviation or aerial work are allowed in a limited number.

The authorisation for air movements during this period is conditioned to:

1. The maximum number of movements allowed (31 daily, 80 weekly)
   Special Seasons: Christmas, New Year's Day, Carnival, Easter and "Festa da Flor" (52 daily, 134 weekly)

 © NAV Portugal, E.P.E.

2. The noise level of the aircraft concerned, in compliance with ICAO:

Level 0	below 87 EPNdB
Level 0,5	between 87 EPNdB and 89,9 EPNdB
Level 1	between 90 EPNdB and 92,9 EPNdB
Level 2	between 93 EPNdB and 95,9 EPNdB
Level 4	between 96 EPNdB and 98,9 EPNdB
Level 8	between 99 EPNdB and 101,9 EPNdB
Level 16	above 101,9 EPNdB

Aircraft classified Level 4,8 and 16, cannot be scheduled between 02:00 (01:00) and 05:00 (04:00);

3. The operating restrictions set out in Item 1 shall not apply to the following cases of force majeure:

- Aircraft operating humanitarian, emergency or evacuation missions;
- Aircraft to come across urgent situations, taking in account weather, technical failure or flight safety reasons;
- Air movements subject to an unforeseen schedule alteration due to abnormal disturbance within Air Traffic Control;
- Air movements operated up to 01:00 (00:00) which were actually scheduled for periods up to 00:00 (23:00), due to delays for which neither the Airport Management Company nor the Operator were to blame;
- Landings operated during the period comprised between 05:00 (04:00) and 06:00 (05:00), due to weather reasons, as far as the arrival had been scheduled for a time after 06:00 (05:00).

2. Penalties for non-compliance with slot allocation rules during the night period.

Penalties for these offences are specified in f) and g), paragraph 2, article 28 of Decree Law 9/2007.

LPMA AD 2.22 FLIGHT PROCEDURES

1. FMS RNAV DEPARTURES ROUTES FROM MADEIRA AERODROME

RUNWAY 05/23

GENERAL REMARKS

If unable to comply with FMS RNAV-1 Departure Routes advise ATC on first contact and expect radar vectors.

See Special procedures and operating limitations on LPMA AD 2.20 paragraph 2, particularly paragraphs “Departure Procedures” and “Take-off Runway 05”.

RADIO COMMUNICATION FAILURE

In the event of RCF squawk A7600:

1. Fly at/to the last assigned and acknowledged level, or to the level of SID if is higher than the last assigned level until passing 30 NM DME FUN DVOR/DME;

2. Thereafter adjust level and speed in accordance with the filed flight plan;

3. If being radar vectored or proceeding offset, when passing 30 NM DME FUN DVOR/DME, rejoin the current flight plan route and proceed in accordance with item 2 above.

4. If cleared DCT to…, fly at/to the assigned and acknowledged level or to FL060, whichever is higher, until passing 30 NM DME FUN DVOR /DME maintain the current flight plan route and proceed in accordance with item 2 above.

FMS RNAV SIDs DESCRIPTION: See back of charts LPMA AD 2.24.08-1 and LPMA AD 2.24.08-5

2. FMS RNAV ARRIVAL TO MADEIRA AERODROME

GENERAL REMARKS:

If unable to comply with FMS RNAV-1 Arrivals Routes advise ATC on first contact and expect vectors for final approach.

See Special procedures and operating limitations on LPMA AD 2.20 paragraph 2, particularly paragraphs “Visual Approach Procedures” and “Landing Procedures”.

SPEED ADJUSTMENT:

See ENR Section 1.5, sub-section 1.5.4 paragraph 2a)

RADIO COMMUNICATION FAILURE

RNAV-1 certified

In case of Radio Communications Failure squawk 7600 and:

a. If cleared by Lisboa Control or Madeira Approach units to proceed via a STAR continue descent to 3000FT via the STAR. Comply with all speed and altitude restrictions to perform an RNAV (GNSS) or RNP-AR approach to the runway in use;

b. Otherwise continue descent to the last assigned and acknowledged FL or FL100 whichever is higher, proceed direct to PILIM and hold as published. At PILIM holding start descent to 3000FT to perform an RNAV (GNSS) or RNP-AR approach to the runway in use;

c. If unable to perform RNAV (GNSS) or RNP-AR approaches continue descent to the last assigned and acknowledged FL or FL100 whichever is higher, proceed direct to ABUSU and hold as published. At ABUSU holding start descent to 3000FT to perform a VOR/DME approach with circling to the runway in use.

Non RNAV equipped

In case of Radio Communications Failure squawk 7600 and continue descent to the last assigned and acknowledged FL or FL100 whichever is higher, proceed direct to ABUSU and hold as published. At ABUSU holding start descent to 3000FT to perform a VOR/DME approach with circling to the runway in use.

Flights below FL100

In case of Radio Communications Failure below FL100 squawk 7600,

a. If visual with the runway perform a Visual Approach;

b. If IMC and flying on a STAR continue descent to 3000FT via the STAR. Comply with all speed and altitude restrictions to perform an RNAV (GNSS) or RNP-AR approach to the runway in use;

c. If IMC and flying direct continue descent to 3000FT to:

   1. PILIM to perform an RNAV (GNSS) or RNP-AR approach or;

   2. ABUSU to perform a VOR/DME with circling to the runway in use.

FMS RNAV ARRIVAL DESCRIPTION: See back of charts LPMA AD 2.24.10-1

3. VISUAL APPROACH PROCEDURES

QFE values are related to the elevation of each threshold.

To Runway 05

- On downwind MNM 940 FT/QNH (794 FT/QFE).
- During approach, the aircraft must cross the coast over GELO (323952N 0164812W) MNM 850 FT/QNH (704 FT/QFE) THR 05, then he should follow the curved approach lights, not passing to the North side (to the left) of them. By ROSARIO (324042N 0164800W) he should be MNM 460 FT/QNH (314 FT/QFE).
- At night the RWY 05 approach lights MUST BE ON. If those lights fail before the aircraft is in such a position, over those lights, that will ensure that the high ground on their left side will be avoided, a missed approach (right turn) should be initiated.
- PAPI should be followed. They are set to define a 3° descent path crossing the Threshold at 57 FT.
- Runway slope - see LPMA AD 2.24.04-3

 © NAV Portugal, E.P.E.

NOTE: Due to high terrain, caution should be exercised to avoid flying left of approach lights path to RWY 05

To Runway 23

In order to never cross to the right (north) of radial 235 from DVOR/DME FUN:

- On the visual approach initiated overhead DVOR/DME FUN the aircraft should be kept slightly left on this radial until a point where - with touchdown zone and PAPI in sight - it has to line up with the runway.
- Maintain MDA (H) until intersecting the 3° final descend path defined by the PAPI, which crosses the Threshold at 57 FT
- Due to high terrain on the right (north) side of the approach - Pico do Facho mountain and a cliff - do not deviate to the right of the extended centre line of Runway 23

1. Pico do Facho: altitude 1129 FT, distance 1023 M abeam a point 1NM from Threshold;
2. Cliff altitude 558 FT, distance 608 M abeam the same point.

- At night the hills (Pico do Facho) on your right may be confused with mist. This obstacle is lighted.
- Touchdown Runway 23 out of control Tower visual range
- Touchdown zone lighting is provided
- A go around manoeuvre should be performed if the aircraft has not landed by the end of these lights.

4. Wind out of limits procedures

a. A landing clearance will not be issued and missed approach / go around instructions will be provided immediately by ATC if winds exceed published landing limits when:

   1. An approaching aircraft to runway 05 is reaching the following points:

      - MAPt, when established on approach DVOR RWY05 and instrument approach DVOR/DME CIRCLING RWY 05;
      - MA566, when established on RNP RWY05 and instrument approach RNP RWY 05 – a;
      - MA508, when established on instrument approach RNP Y RWY 05 AR;
      - MA522, when established on instrument approach RNP Z RWY 05 AR.

   2. An approaching aircraft to runway 23 is reaching the following points:

      - MAPt, when established on approach DVOR RWY 23 and instrument approach DVOR/DME CIRCLING RWY 23;
      - MA562 when established on RNP RWY 23 and instrument approaches RNP RWY 23 – b;
      - MA408 when established on instrument approach RNP RWY 23 AR.

b. If a pilot insists on landing even though clearance has not been issued and he/she has been informed of the current wind limitations on the use of aerodrome, ATC will ensure that runway is clear and inform him/her that landing without clearance will be his/her own responsibility.

c. Landing at pilot's responsibility does not relieve him/her from compliance with published wind operating limitations and of any responsibility whatsoever in connection with a violation of applicable rules and regulations.

d. In case winds exceed published landing limits after an aircraft has been cleared to land, TWR will not cancel landing clearance to avoid ATC–induced circumstances and it will be pilot's responsibility to evaluate whether flight conditions are suitable to complete the approach or flight safety dictates the initiation of a missed approach / go around procedure.

e. If a pilot insists on taking off even though he/she has been informed of the current wind limitations on the use of aerodrome for departure, ATC will not issue take off clearance, will ensure that runway is clear and inform him/her that taking off without clearance will be his/her own responsibility.

5. Landing procedures

All landings are to be made in visual conditions (see appropriate chart)

a. Approach Runway 05 must be made in a minimum visibility of 5000 meters (see AD 2.24.12-1)

b. Approach Runway 23 must be made in a minimum visibility of 7000 meters (see AD 2.24.12-3)

c. RNP AR - All landings are to be accomplished while maintaining visual references to the runway, either after passing DA or MDA in instrument approaches or in terminating visual approaches.

RNP AR RWY 05/23 - Additional Information

Criteria deviations from ICAO

Referring to Required Navigation Performance Authorization Required (RNP AR) Procedure Design Manual:

- the minimum IAS for Cat D is 165kt;
- for Missed Approach less than RNP 1 value, FROP should be at 50 seconds from DA;
- the maximum bank angle for Approach is 20° and 15° for Missed Approach.

All deviations from the above criteria are listed below and shall be addressed in the FOSA:

RNP AR RWY 05
FROP

- Located at 0.6 NM from THR05, so by definition, less than 50s from DA.
- For all aircraft categories and RNP AR values in final segment, DA is reached before FROP (MA502 - inside the RF turn).

Final Approach Speed

Type	Procedure Ident	Segment	Speed (kt)
Final Segment	MA522	MA522 - MA520	160

Missed Approach Bank Angle

Type	Procedure Ident	Segment	Procedure Bank Angle (°)
Missed Approach Segment	MONEC	MA550 - MA552	15.05

RNP AR RWY 23
Missed Approach Bank Angle

Type	Procedure Ident	Segment	Procedure Bank Angle (°)
Missed Approach Segment	MONEC PILIM	RWY05 - MA406	20.17

6. Holding Procedures

HLDG ID/FIX/WPT Coordinates	INBD TR (MAG)	Direction of PTN	MAX IAS (KT)	MNM-MAX HLDG LVL FL/FT (MSL)	TIME (MIN) or DIST OUBD
ABUSU ABUSU 325201N0163808W (RDL031-DME08 FUN DVOR/DME)	211°	RIGHT	230	3000 FT ALT FL 140	5 NM
ABUSU ABUSU 325201N0163808W (RDL031-DME08 FUN DVOR/DME)	211°	RIGHT	280	FL 150 FL 999	11 NM
FUSUL FUSUL 323605N0163943W RDL170-DME09 FUN DVOR/DME	350°	LEFT	230	4000 FT ALT FL 140	5 NM
FUSUL FUSUL 323605N0163943W RDL170-DME09 FUN DVOR/DME	350°	LEFT	280	FL 150 FL 999	12 NM

 © NAV Portugal, E.P.E.

HLDG ID/FIX/WPT Coordinates	INBD TR (MAG)	Direction of PTN	MAX IAS (KT)	MNM-MAX HLDG LVL FL/FT (MSL)	TIME (MIN) or DIST OUBD
MONEC MONEC 322723N0164949W	024°	LEFT	230	3000 FT ALT FL 100	1 MIN
PILIM PILIM 325115N0163529W	227°	RIGHT	230	3000 FT ALT FL 100	1 MIN

LPMA AD 2.23 ADDITIONAL INFORMATION

1. Bird concentrations in the Movement Area and in the vicinity of the Airport

Birds activity takes place daily from sunrise to sunset at the movement area (including STRIPS) and in the vicinity of the airport.As far as practicable, Air Traffic Service will inform pilots of this bird activity and the estimated location, if possible.During the above periods, pilots of aircraft are advised that birds may not always be promptly detected and caution is requested during approach-to-land, descent, take-off, climb and taxi procedures.

Dispersal activities include the using of gas cannon units, scarecrow hand-held and vehicle devices distress calls, the presence of wildlife personnel and falconry is also used with predatory birds, such as falcons and hawks.A Wildlife Hazard Management Plan is also in force in Madeira Airport.

Gas cannon activity and falconry takes place during all year, daily from sunrise to sunset and scarecrow devices area activated whenever birds are detected.Wildlife personnel available daily between sunrise and sunset.

2. Grass cutting

Grass cutting will take place along Strip RWY 05/23, daily from 08:00-18:00 (07:00-17:00). Men and equipment under Tower control and airport authority supervision.

LPMA AD 2.24 CHARTS RELATED TO AN AERODROME

© NAV Portugal, E.P.E.