

EASA Aerodromes Conference

Aspects Around Madeira Airport (Funchal)

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Summary

1. Presentation of Madeira Region
2. Presentation of Madeira Airport
3. Certification Status
4. SWOT Analysis
5. Conclusion



Presentation of Madeira Region



Presentation of Madeira Region

- Autonomous Region within the Portuguese Republic comprising mainly the islands of Madeira and Porto Santo.
- 262.302 inhabitants
- 758.52 km²
- Highest point: 1 862 m
- Average altitude: 646 m

Presentation of Madeira Region

- Distance Lisbon > Funchal: 980 km /
/ 608 nm
- Distance Funchal > Porto Santo: 72
km / 45 nm
- **Tourism (2013 about one million,
extended staying, critical to economy).**

Presentation of Madeira Region

On next slides please note:

Map and picture showing Madeira's two natural features: Mountainous terrains and "indented" coastline that (both) adversely affect sites to locate an airport.

Presentation of Madeira Region

Mountainous orography and “indented” costline



Presentation of Madeira Region

Mountainous orography and coastline



Presentation of Madeira Airport

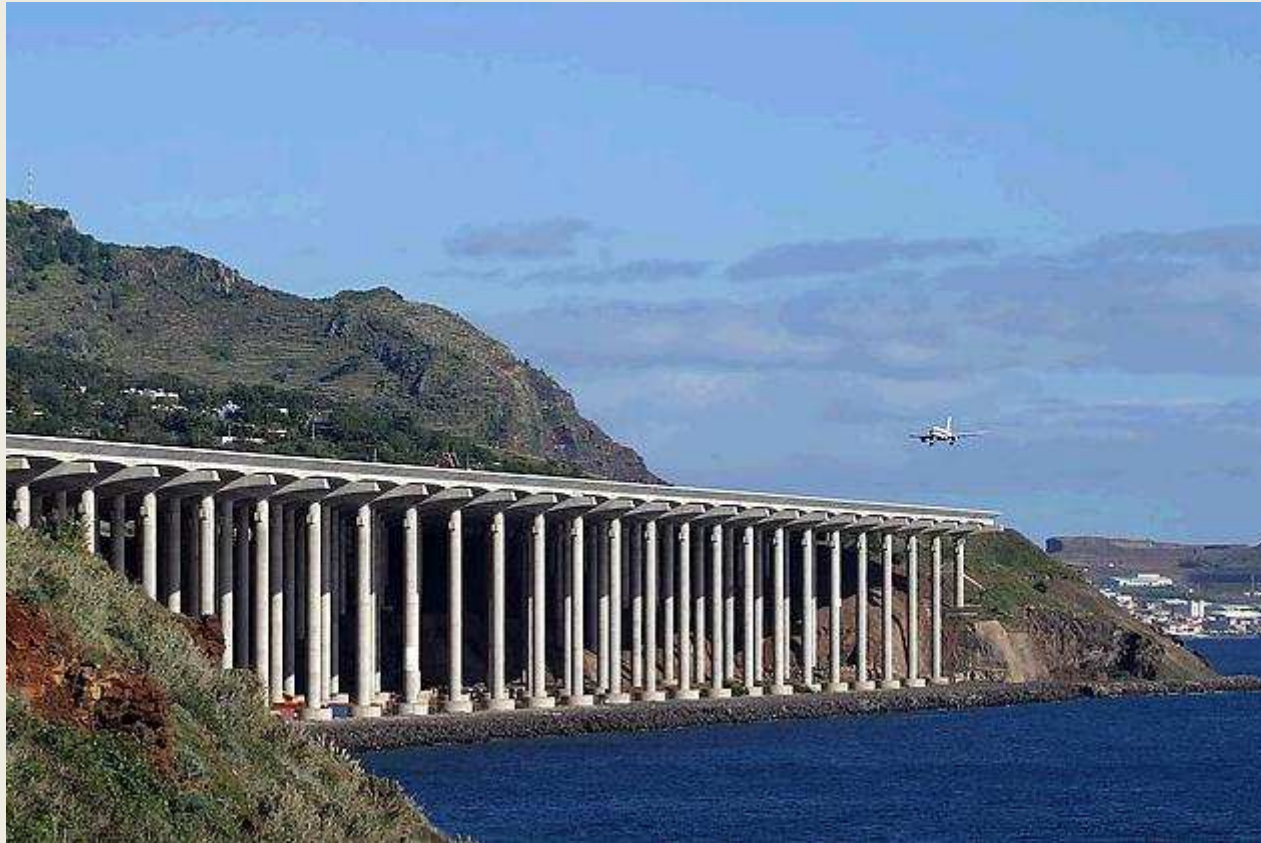
On next slides, please note:

- Pictures showing the Madeira Airport and the (iconic) “bridge” of the airport;
- The “bridge” unites two coast fringes.

Presentation of Madeira Airport



Presentation of Madeira Airport



Presentation of Madeira Airport



Presentation of Madeira Airport



Presentation of Madeira Airport



Presentation of Madeira Airport

- **ICAO Location indicator** **LPMA**
- **Date First flights** **1964 (old rwy)/ 1999 (new)**
- **Location** **13,2km from Funchal**
- **Operational hours** **H24**
- **Non-precision approach**
- **Passengers per hour** **3200 (1600+1600)**
- **Movements per hour** **14 (7+7)**

Presentation of Madeira Airport

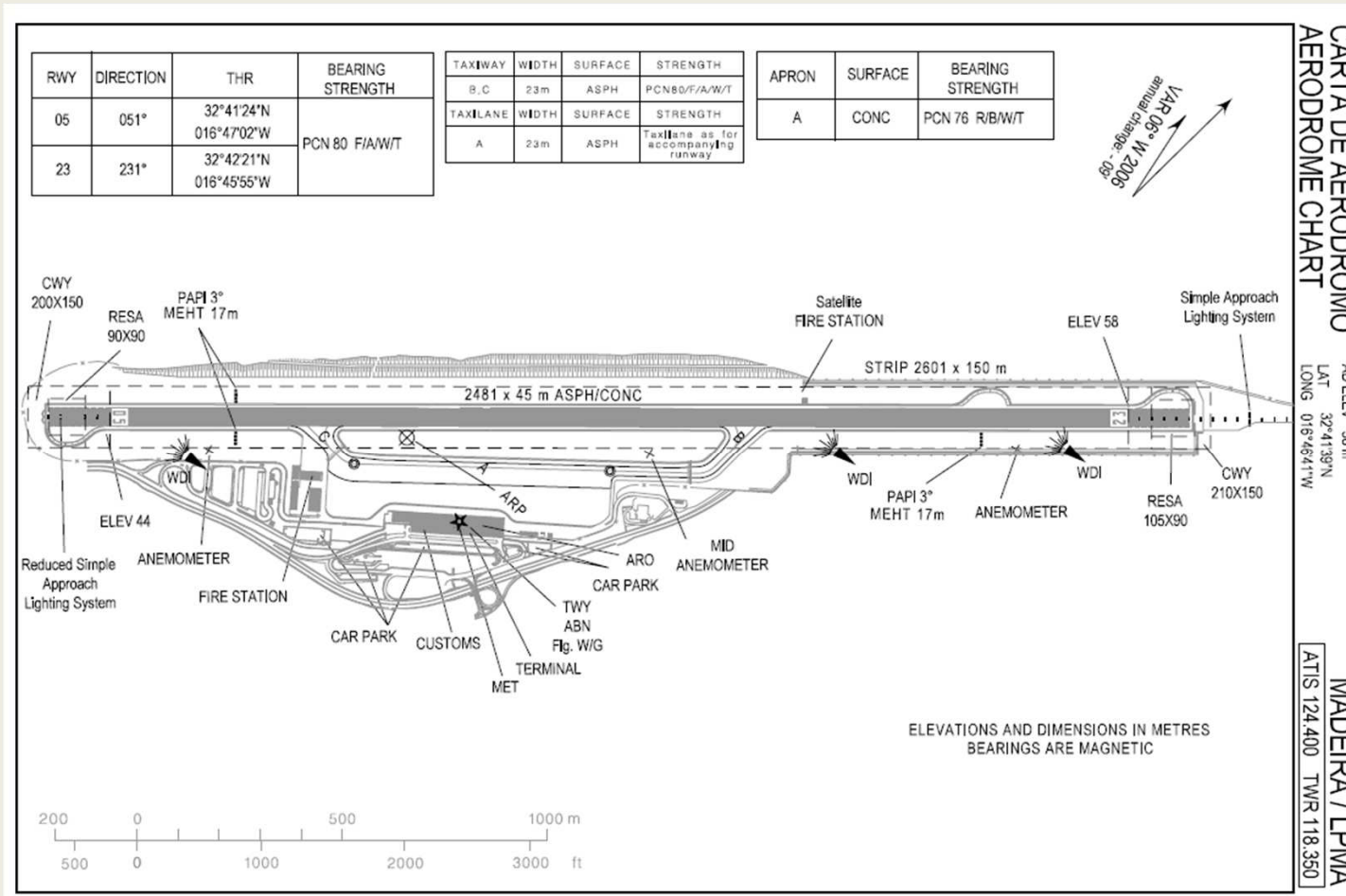
- **Departure gates** 16
- **Terminal capacity** 3.500.000 pax per year
- **Check-in counters** 40
- **Arrival aprons** 4
- **Rwy's** 05 / 23
- **Rwy's length and width** 2.781m x 45m +shoulders
- **Taxiways width** 23m
- **Elevation's** 44 / 58m

Presentation of Madeira Airport

2013

- **2,4 million passengers**
- **20 thousand movements**
- **77 routes**
- **43 airlines**

Presentation of Madeira Airport



Presentation of Madeira Airport

CARACTERÍSTICAS FÍSICAS / PHYSICAL CHARACTERISTICS						
RWY	Dimensões e pavimento Dimensions and surface	Resistência Strength	Distâncias Declaradas Declared Distances			
			TORA	TODA	ASDA	LDA
05	2481x45 ASPH/CONC	PCN80/F/A/W/T	2631*	2841	2631*	2481**
23			2631*	2831	2631*	2481**
* Including 150M of pavement before THR						
** RWY05 first 98.5m in concrete; RWY23 first 113.5m in concrete						
CWY RWY05 210x150m CWY RWY23 200x150m						
STRIP 2601x150 m						
RESA RWY05 105x90m ASPH/CONC RESA RWY23 90x90m ASPH/CONC						

Porto Santo Airport

(May be used as alternate airport)
(70 km from Madeira – Rwy 3000m x 45m)



Certification Status

- Certified in 2013, valid until 2018, according to Portuguese Law (Decreto-Lei 186/2007 and Decreto-Lei 55/2010);
- Portugal CAA (INAC) currently revising certification procedures in order comply with EU “Regulation 139/2014”;
- New certification expected until 2017

SWOT Analysis

Strengths / Airport

- Highly qualified and locally experienced personnel
- Good safety records
- Developed SMS
- Developed emergency planning including full scale exercises in hostile environment
- **Part of major group with management and investment capabilities**

Strengths / CAA

- Highly qualified and experienced personnel
- Qualified inspectors and auditors with experience on this airport
- Consolidated experience on aerodromes certification

SWOT Analysis

Weaknesses / Airport

- **Transitional Surface infringing 14,3%**
- **Wind regime**
- **RESA (only on enhancing deceleration – fully complies with length & width)**
- **Rwy Strip**



Weakness / CAA

- **Shortage of staff**

SWOT Analysis

Weaknesses / Airport > implemented mitigation

Special procedures and operating limitations.

Examples for crew:

- **Pilot in command with at least 200 hours as captain on the concerned aircraft;**
- **Specific training requirements on Madeira Airport and with the concerned aircraft;**
- **Recent experience in Madeira (operated there on the last six months).**

SWOT Analysis

Weaknesses / Airport > implemented mitigation measures

Examples related to wind / turbulence:

- **Specific wind information;**
- **Specific wind limitations at both landing and take-off.**

SWOT Analysis

Weaknesses / Airport > implemented mitigation measures results

Operations limitations - Total due to strong winds and reduced visibility (2013):

- Nr. days / hours: 2,87 / 68.52 (0,79%);**
- Pax affected: 30.558 (1,27%).**

SWOT Analysis

Weaknesses / Airport > mitigation measures

- **RESA and Rwy Strips: Assessment of eventual further safety/optimisation measures.**

SWOT Analysis

Opportunities (CAA and Operators)

- Regulation 139/2014 close to former national aerodrome design regulation;
- Managerial and technical capability to implement 139/2014 requirements on Annexes II (CAA) and III and IV (operators).

SWOT Analysis

Opportunities (CAA, airport operators and industry)

Common EU requirements may:

- For regulators, improve cooperation and partnerships;
- For aerodromes and industry, including consultancy, service providers, universities, etc., improve cooperation, business opportunities, R&D, etc.

SWOT Analysis

Threats (CAA and Operators)

Simultaneous implementation of new Portuguese CAA (INAC / Public Institut to Agency), new airports' ownership (public to private) and new EU regulation is itself a major and demanding challenge for concerned entities.

Conclusion

- Madeira Airport was developed on very difficult circumstances due mainly to natural features. Solutions have been developed to ensure safe operations;
- Due to the natural features some mitigations measures consist of compensation of design non-compliances with specific operational procedures and limitations.

Conclusion

- Regulation 139/2014 will trigger a new cycle on consolidating, revising and implementing existing procedures for both the CAA and the airport operator;
- Regulation 139/2014 provides CAA and operator(s) with an even more detailed “common ground” knowledge;
- At European level, harmonization of rules regarded as positive “to maintain a high uniform level of civil aviation” and an “overall improvement in aerodrome safety”;

So, confidence and optimism prevails!

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Thank you!
Questions?

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