

# Risk assessments – Case studies

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# Risk assessments – Case studies

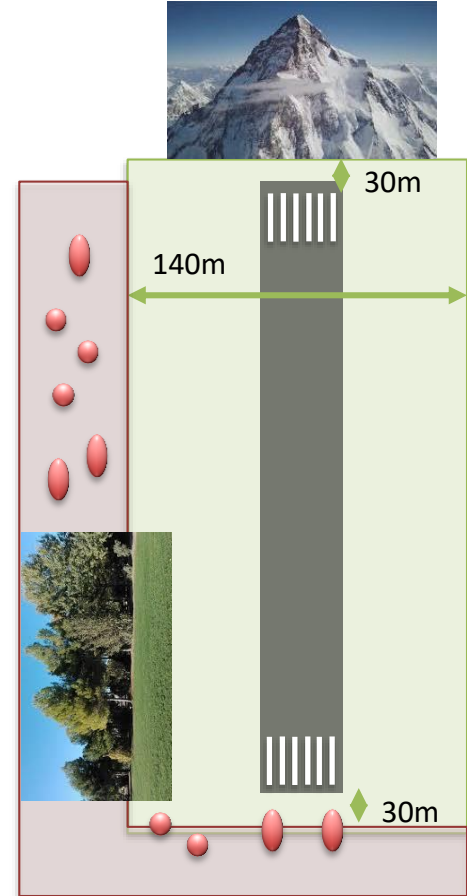
- In this part of the course, the instructors will propose a practical study case, related to the theoretical subject provided.
- The intention for this case is that attendants, by groups, analyze the case, and achieve possible conclusions.
- On the groups have exposed their conclusions, the instructors will open a discussion on the content, to gather all the points of view.



# Case study 1

# Risk assessments – Case studies

- The CAA of the country LALALAND is inspecting the RIALTO airport, and they identify the following situation:
- ❑ The airport has instrumental CAT I procedures in both runways.
  - ❑ The runway strip is non-compliant with the regulation, because:
    - It's 140m width in total (instead of the 280m established in the regulation for airports with these operations).
    - Has a 30m length strip (doesn't have the 60m required).
  - ❑ Out of the declared strip, the airport is surrounded by mountains up north, and has additional objects on the west and south.
- The airport is planning the works to increase the strip, but in the mean time, the CAA asks the aerodrome operator a risk assessment of the situation.



# Risk assessments – Case studies

Analysis / preliminary identification

HAZARDS	DEFENSES	FACTORS	POTENTIAL RISKS	FINAL RISKS

# Risk assessments – Case studies

## Analysis / preliminary identification

HAZARDS	DEFENSES	FACTORS	POTENTIAL RISKS	FINAL RISKS
The runway strip does not comply with the regulation	Runway visual aids	Mountain on the North Side	Veer off (R1)	<b>Collision of an aircraft with an obstacle</b>
	Runway maintenance programme	Obstacles on the South and West	Overrun (R2)	
	Friction test to the RWY	Cliff on the East Side	Undershoot (R3)	

# Risk assessments – Case studies

## Risk analysis (with experts)

LIKELIHOOD		QUALITATIVE DEFINITION
5	<b>Frequent</b>	<i>Is expected to occur in most circumstances</i>
4	<b>Occasional</b>	<i>Will probably occur at some time</i>
3	<b>Remote</b>	<i>Might occur at some time</i>
2	<b>Improbable</b>	<i>Could occur at some time</i>
1	<b>Extremely improbable</b>	<i>May occur only in exceptional circumstances</i>

SEVERITY CLASS	DEFINITION
<b>CATASTROPHIC</b>	Accident, equipment destroyed, loss of aircraft and multiple deaths.
<b>HAZARDOUS</b>	A large reduction in safety margins / no safety barriers remaining, the outcome is not under control, major equipment damage and serious or fatal injury to a number of people.
<b>MAJOR</b>	Serious incident or accident, significant reduction in safety margins, serious equipment damages and injury to persons
<b>MINOR</b>	Nuisance, operations limitations, minor incident and small damages to aircraft, vehicles or objects.
<b>NEGLIGIBLE</b>	Non-significant consequences and circumstances which may lead to a non-significant reduction of safety and no immediate effect on safety.

# Risk assessments – Case studies

## Risk analysis (with experts)

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R1, R2, R3

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# Risk assessments – Case studies

## Risk analysis (with experts)

Risk probability		Risk severity				
		Catastrophic	Hazardous	Major	Minor	Negligible
		A	B	C	D	E
Frequent	5	5A	5B	5C	5D	5E
Occasional	4	4A	4B	4C	4D	4E
Remote	3	3A	3B	3C	3D	3E
Improbable	2	2A	2B	2C	2D	2E
Extremely improbable	1	1A	1B	1C	1D	1E

# Risk assessments – Case studies

## Risk analysis (with experts)

Risk probability		Risk severity				
		Catastrophic	Hazardous	Major	Minor	Negligible
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Remote	3	3A	3B	3C	3D	3E
Improbable	2	2A	2B	2C	2D	2E
Extremely improbable	1	1A	1B	1C	1D	1E

# Risk assessments – Case studies

## Risk analysis (with experts)

Risk index range	Description	Recommended action
5A, 5B, 5C, 4A, 4B, 3A	High risk	Cease or cut back operation promptly if necessary. Perform priority risk mitigation to ensure that additional or enhanced preventive controls are put in place to bring down the risk index to the moderate or low range.
5D, 5E, 4C, 4D, 4E, 3B, 3C, 3D, 2A, 2B, 2C, 1A	Moderate risk	Schedule performance of a safety assessment to bring down the risk index to the low range if viable.
3E, 2D, 2E, 1B, 1C, 1D, 1E	Low risk	Acceptable as is. No further risk mitigation required.

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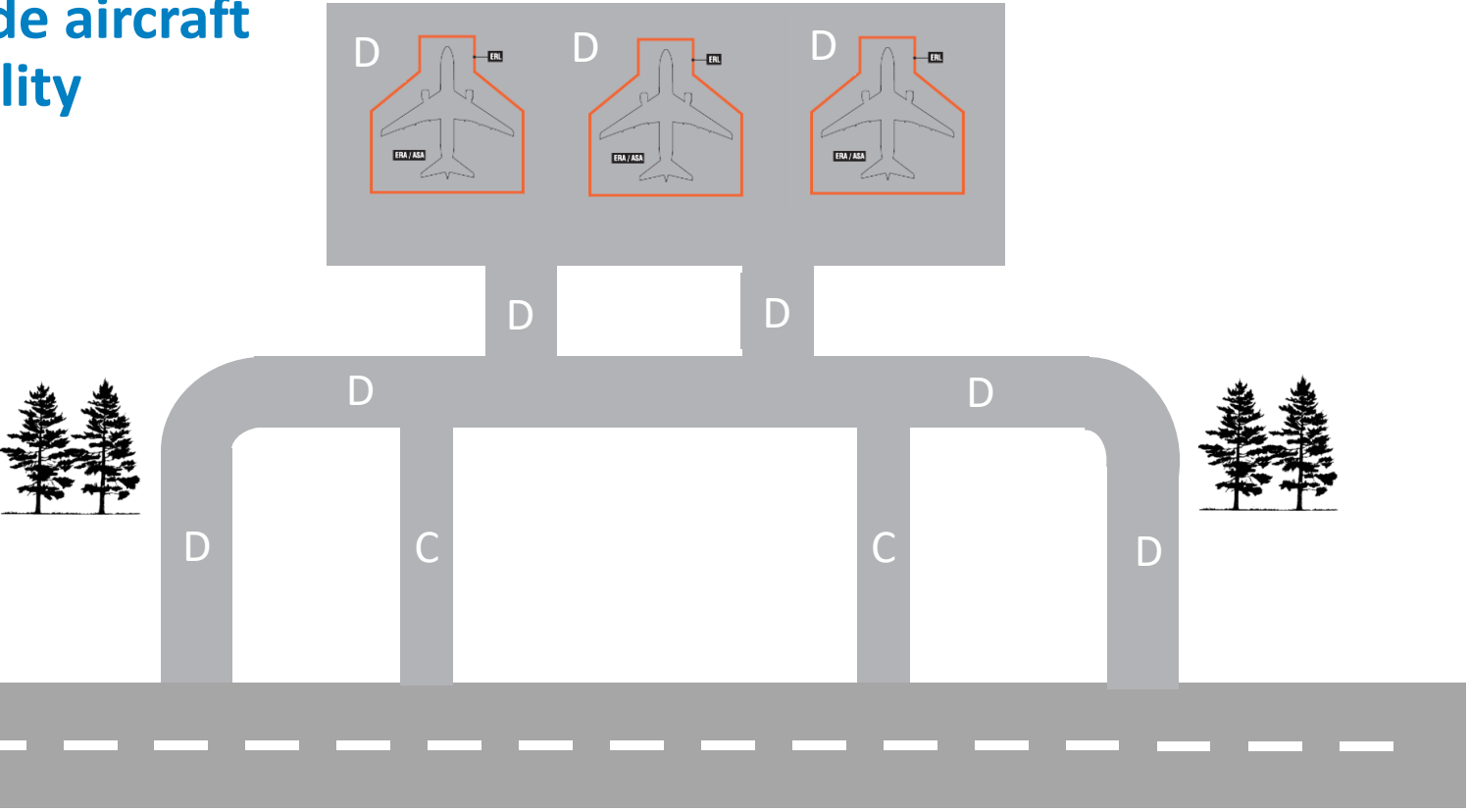
## Possible additional mitigation measures?

- Prior approval required for the pilots that operate at the aerodrome.
- AIP information related with the characteristics of the RWY strip.
- Increase of the periodicity of the rubber removal of the runway.
- (assess if it's needed to restrict to visual)

# Case study 2: Higher code aircraft compatibility

# Case study 2: Higher code aircraft compatibility

TERMINAL



# Case study 2: Higher code aircraft compatibility

## SCENARIO

- Airport Certified as 3D
- New Aircraft (3E)
- Apron with 3 stands D

- Identify the Hazards (non compliances)
- Assess Risks
- Propose Mitigations
- Assess Risks



# Case study 2: Higher code aircraft compatibility

Analysis / preliminary identification

HAZARDS	DEFENSES	FACTORS	POTENTIAL RISKS	FINAL RISKS



## Case study 2: Higher code aircraft compatibility



## Risk assessments – Case studies

[www.eu-sea-app.org](http://www.eu-sea-app.org)  
[easa.europa.eu/connect](http://easa.europa.eu/connect)



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