# The Bowtie model

## Visualising how risks are prevented and controlled



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# Why the Bowtie model?

*Connecting threats, controls and consequences*




**The challenge**

A simple risk statement or risk matrix does not show how an event might happen or how it is controlled.

**The value**

The Bowtie model provides a clear visual link between threats, preventive controls, a top event, mitigating controls and consequences.

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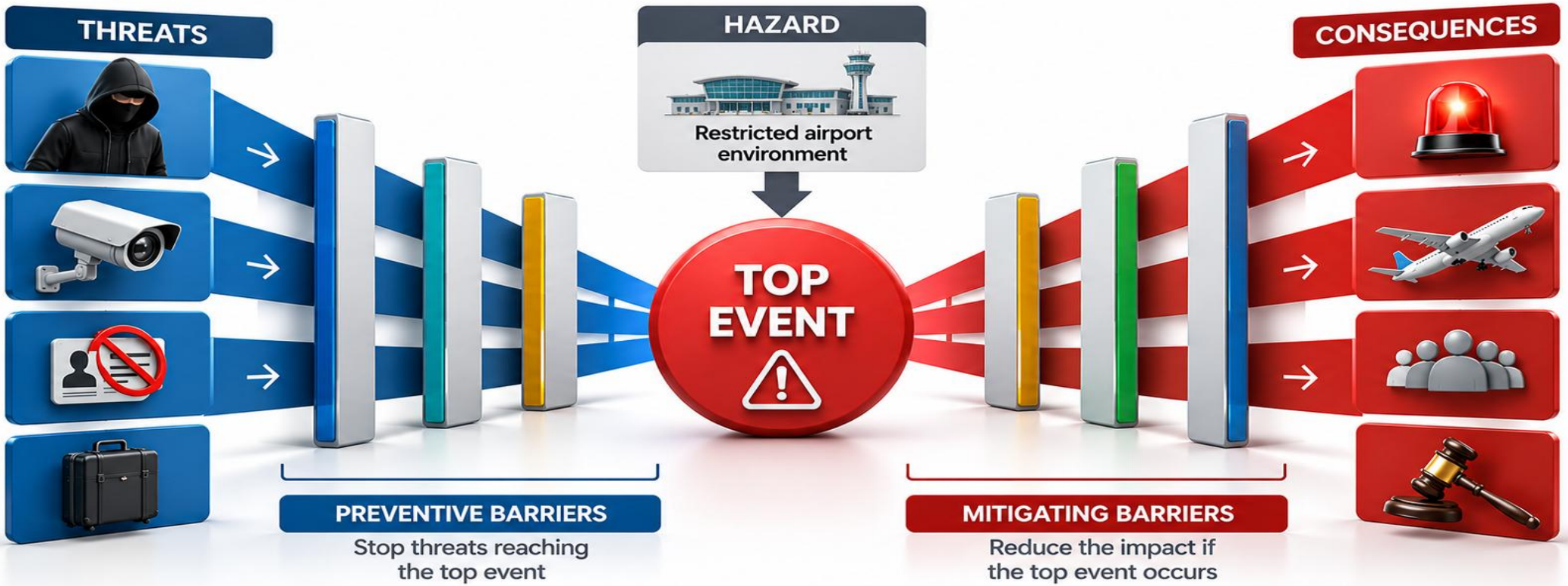
# The Bowtie structure

*One risk picture - two sides*

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# The hazard

*What has the potential to cause harm?*




**Potential**
Has the potential to cause harm

**Wide scope**
Includes people, aircraft, infrastructure, operations and information

**Multiple pathways**
Can lead to different threats and top events

**Context specific**
Varies between airports, operations and risk scenarios

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# The top event

*The moment control is lost*




**What is the top event?**

The top event is the moment control is lost and the hazardous event occurs.

**Important point**

The top event is not the final consequence. It is the event that could lead to one or more consequences.



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# Threats

*What could cause the top event?*




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# Preventive barriers

## Preventing threats from reaching the top event




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# Consequences

*What could happen after the top event?*




**Security breach**
Potential threat to people, aircraft or critical infrastructure

**Operational disruption**
Delays, diversion, increased costs and resource impact

**Evacuation and re-screening**
Terminal or area evacuation and additional screening

**Regulatory consequences**
Investigation, enforcement action and potential penalties

**Reputational impact**
Loss of public confidence and long-term brand damage

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# Mitigating barriers

## Reducing the consequences after control is lost




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# Escalation factors

*What could weaken a barrier?*




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# Escalation controls

*Protecting the barriers themselves*




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# Barrier effectiveness

*A barrier on paper is not enough*




**Present**
Is the barrier in place?

**Suitable**
Is it the right barrier?

**Functioning**
Does it work as intended?

**Monitored**
Is it regularly checked?

**Assured**
Is it effective and reliable?

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# Reading the complete Bowtie

*Following the pathway from threat to consequence*




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# Why use the Bowtie model?

*Making risk controls visible*




**Clear visualisation**
Shows how threats, barriers and consequences are connected.

**Better risk understanding**
Highlights where controls prevent or reduce harm.

**Informs decision-making**
Helps prioritise and target resources effectively.

**Improves communication**
Simple and intuitive for a wide range of stakeholders.

**Supports assurance**
Provides a structured basis for review, testing and continuous improvement.

**Also consider**

- A simplified view of complex reality.
- Quality depends on good information and subject-matter expertise.
- Needs regular review and updating.

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