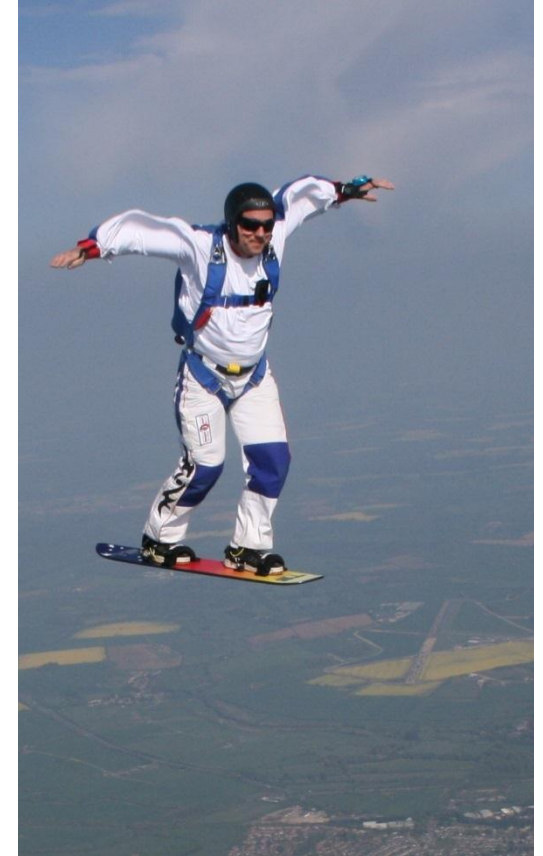


# Managing an Acceptable Level of Safety

Dr Simon Mitchell  
Visiting Fellow  
Safety and Accident Investigation Centre

[s.mitchell@cranfield.ac.uk](mailto:s.mitchell@cranfield.ac.uk)





16 July 2002,  
11 Fatalities





20 April 2010,  
11 Fatalities

1.3.3 The air transportation industry's future viability may well be predicated on its ability to sustain the public's perceived safety while travelling. The management of safety is therefore a prerequisite for a sustainable aviation business.

4.2.2 There is no such thing as absolute safety. Before any assessment can be made as to whether or not a system is safe, it is first necessary to determine what the acceptable level of risk is for the system

“Good ideas are not adopted automatically.  
They must be driven into practice with  
courageous patience.”

Hyman Rickover

*US (Polish-born) admiral (1900 - 1986)*

- Technical
- Legal
- Political
- Social

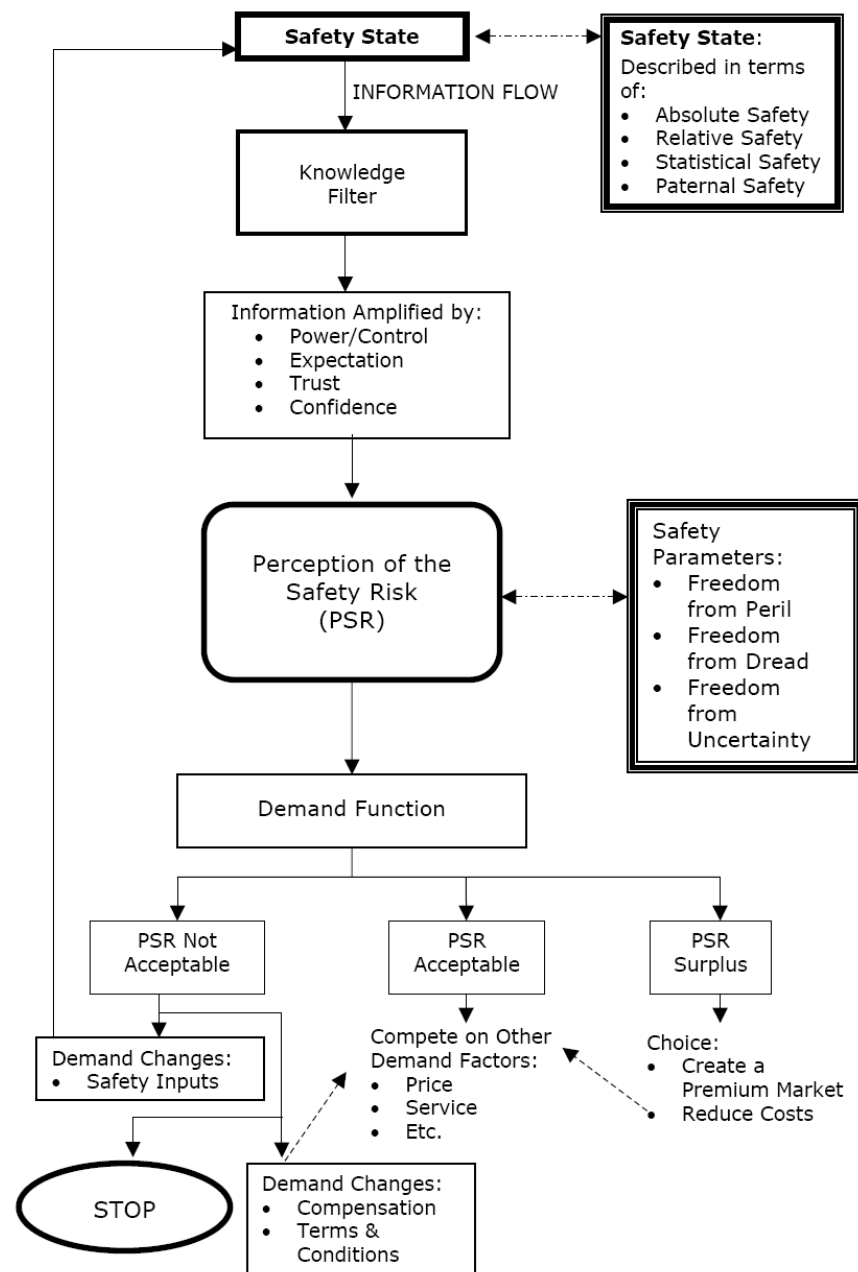


Acceptable Safety



Market  
Stable

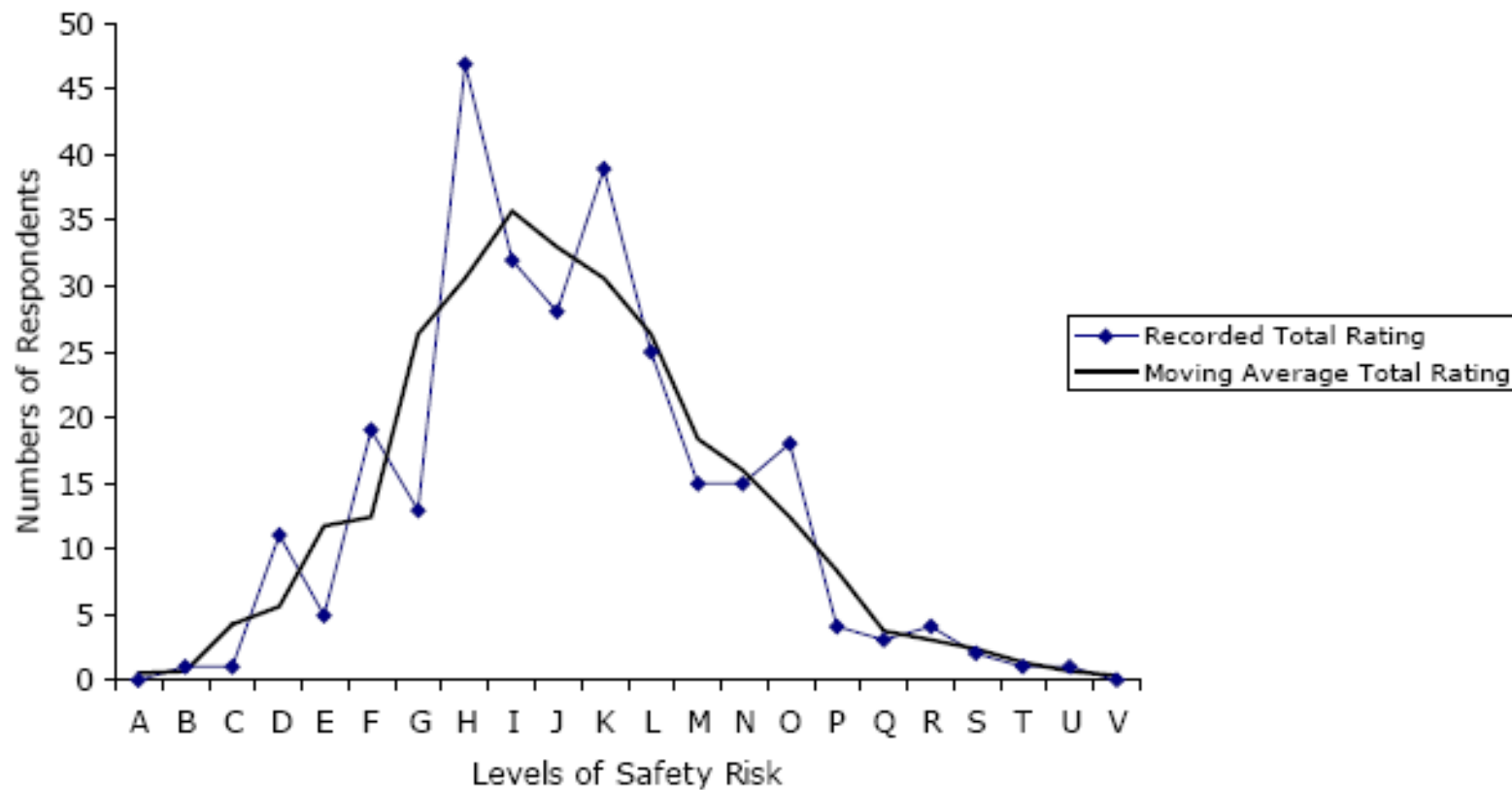
Market  
Unstable



Mitchell, S.J.LeM (2006)

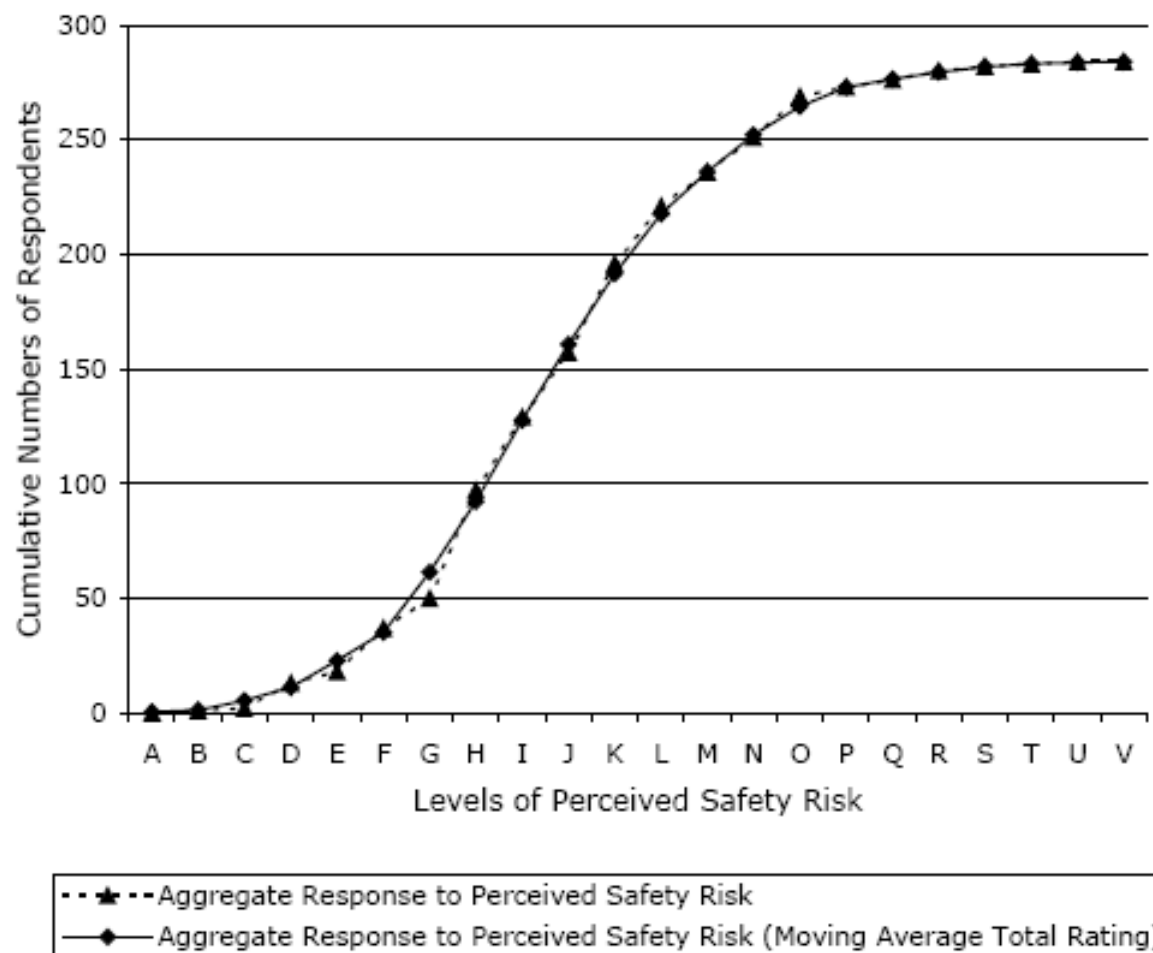


Figure 33: Relative Levels of Acceptable Risk as Stated by Respondents in Survey Sample



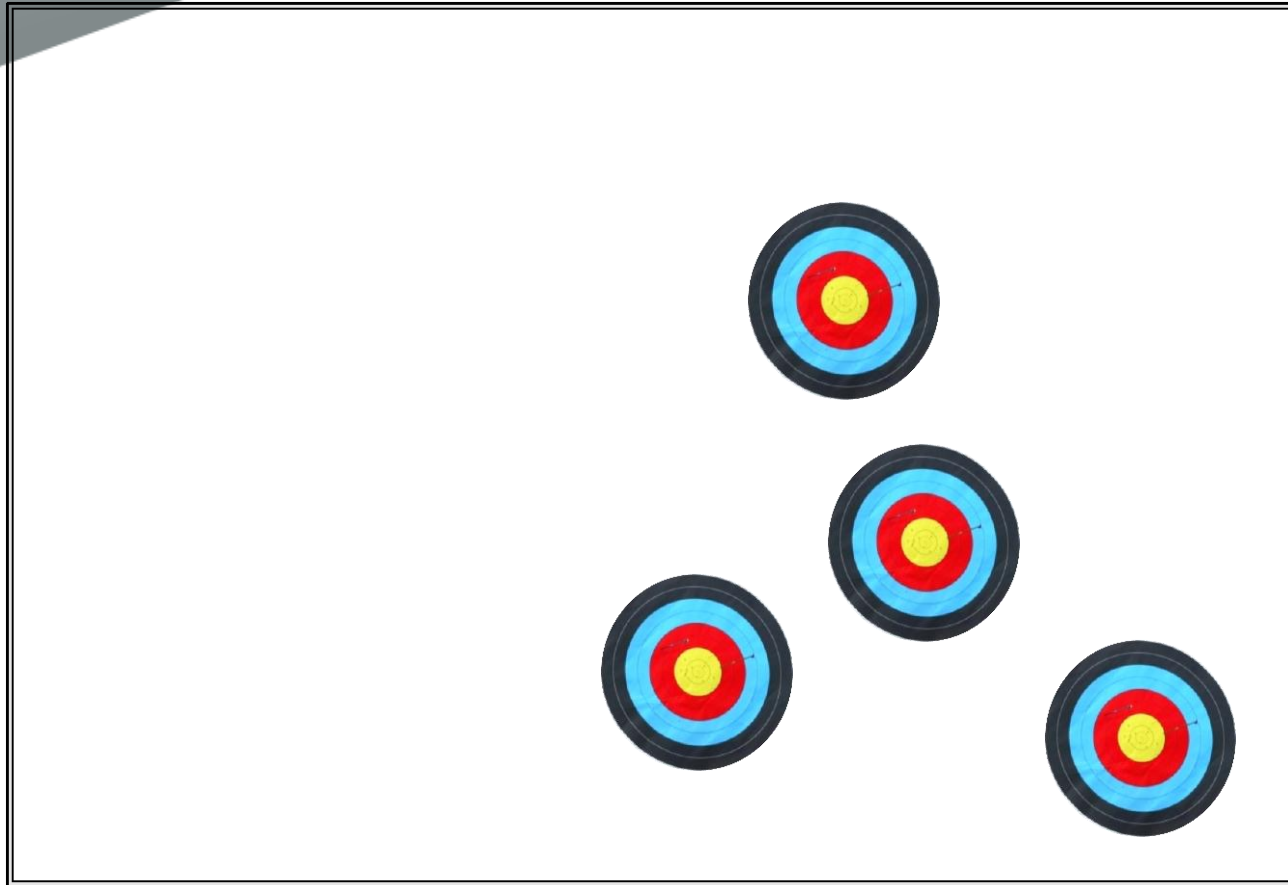
Mitchell, S.J.LeM (2006)

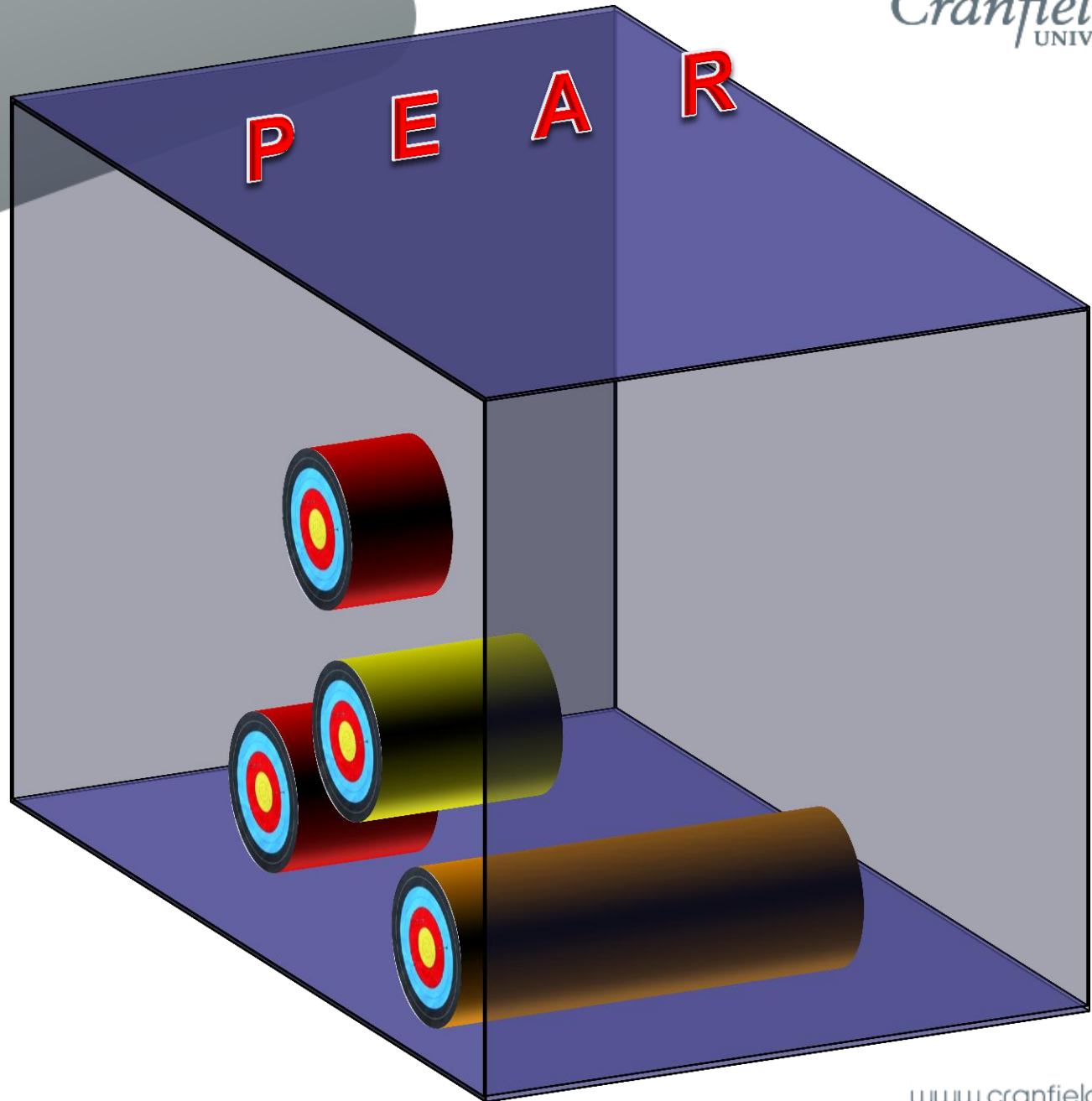
Figure 34: The Cumulative Numbers of Respondents Affected at Each Level of Perceived Safety Risk





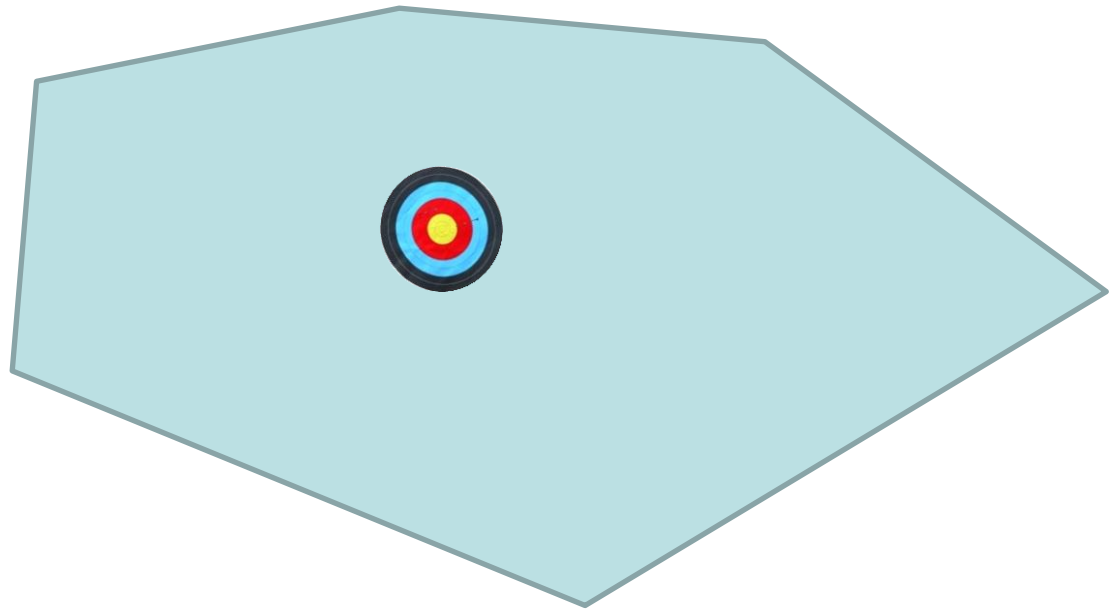
# Safety Targets





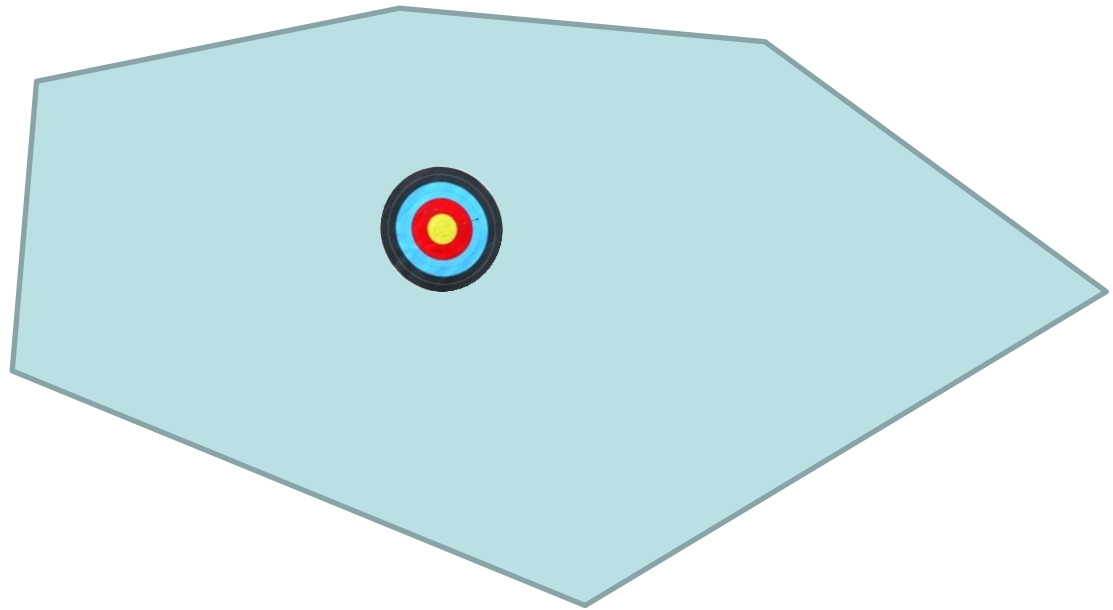


# Uncertainty and Risk Assessment

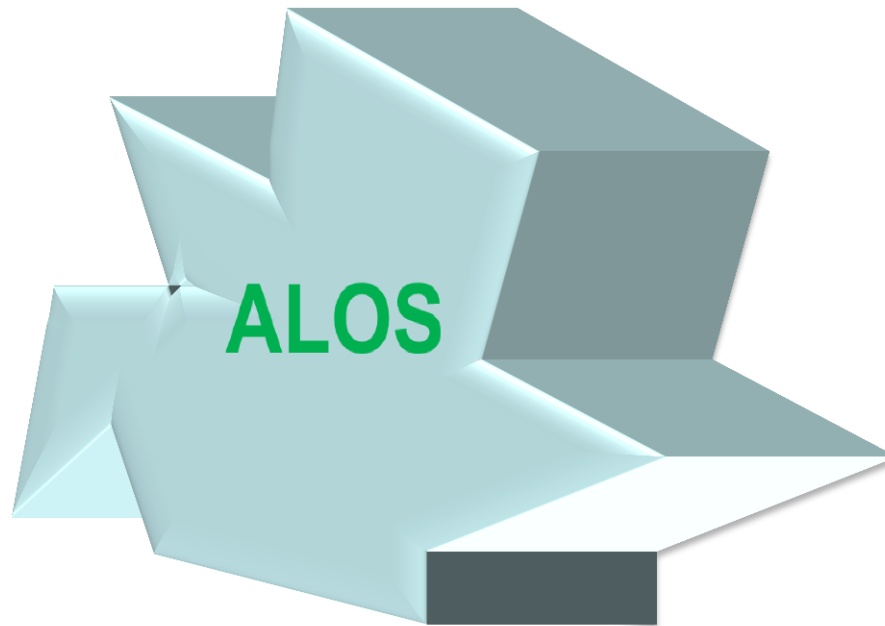


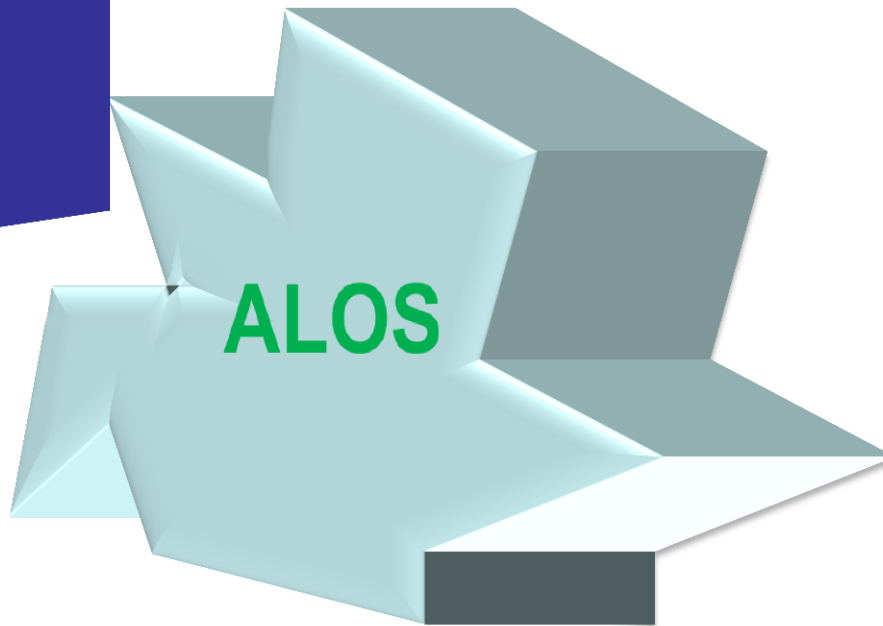
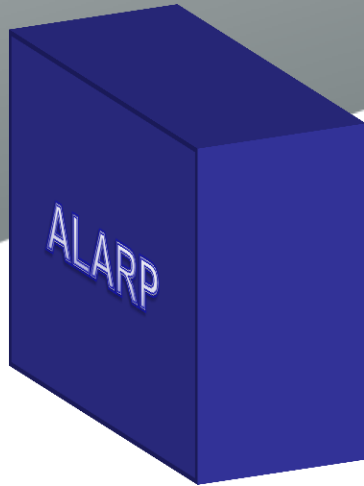


# Uncertainty and Risk Assessment



1. Industry
  - i. Manufacturers
  - ii. Operators
  - iii. Service Providers
2. Government
  - i. Executive
  - ii. Judiciary
  - iii. Legislative
3. Consumers & Society
  - i. Passengers
  - ii. General Public





# Sufficiency Paradox



Guido Calabresi & Philip Bobbitt  
“Tragic Choices”  
1978

# Stakeholder Groups

## 1. Industry

- i. Manufacturers
- ii. Operators
- iii. Service Providers

**ALARP**

## 2. Government

- i. Executive
- ii. Judiciary
- iii. Legislative

## 3. Consumers & Society

- i. Passengers
- ii. General Public

**ALoS**

# Stakeholder Groups

## 1. Industry

- i. Manufacturers
- ii. Operators
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**ALARP**

## 2. Government

- i. Executive
- ii. Judiciary
- iii. Legislative

## 3. Consumers & Society

- i. Passengers
- ii. General Public

**ALoS**



Risk Assessment = Technical Process

Risk Management = Value Judgement

= ***F*** {Ethics, Culture,  
Environment, Identity,  
Values, Options, Fairness,  
Equity, Respect, Benefits,  
.....}

Financial Times  
18 August 2009

Financial Times  
18 August 2009

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# Key Metrics

- Who Benefits?
- What are the Benefits?
- Who is at Risk?
- What is the nature of the Risk?
- Is there Informed Consent?
- Is there Equity and Fairness?
- What are the Alternatives?
- How much Trust?

# QUESTIONS

?

