

# RISK ASSESSING AN OPERATIONAL CHANGE

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# Why it is important to conduct a risk assessment prior to operational change?

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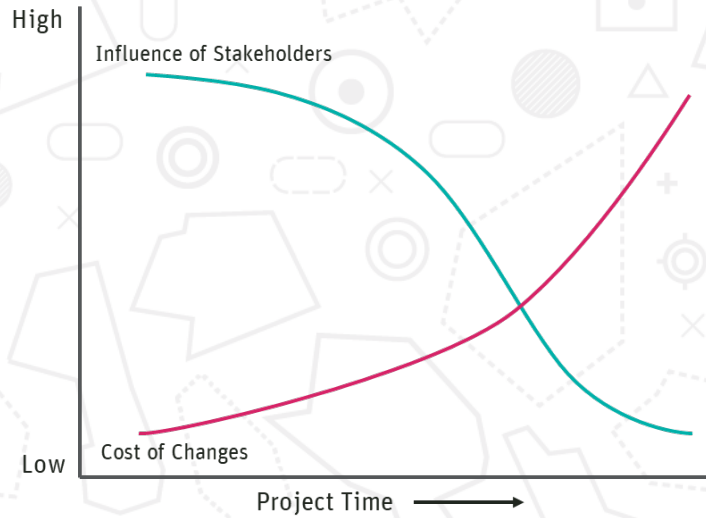
The Think Safety Assurance Service encompasses the development of concepts, principles and methods to **understand, assess and manage** safety. At its heart this considers the assessment of risks when introducing or planning changes to the ATM or airport system or for establishing the existing safety baseline of the system.

**Risk assessing changes ensures that we understand** what sequences of events or scenarios may lead to an accident, what the consequences of that accident may be and what **the risks associated** with these events are.

This is crucial **not just to be compliant** with regulation but **to truly understand how the risk changes** compared to current operations.

Think can support by providing a comprehensive and rigorous risk assessment helping to reveal operational risks and mechanisms to reduce them as far reasonably practicable.

# Tailoring your Safety Assessment



Your risk assessment should be tailored to the maturity of the concept or change being considered.

This enables you to focus on the key risks at the initial concept development stage when the cost of change is smallest and then develop a full comprehensive assessment as the concepts mature.



# Process to assess safety following a change

Think's safety assessment processes meet national and international aviation regulatory guidance as well as corporate governance expectations.



# Process to assess safety following a change





# Hazard Identification



A example of Think's core hazard identification techniques include:

Hazard identification and operability workshops;	Review of historic occurrences and lessons identified;
Geometric Hazard identification;	Hierarchical Task analysis (HTA) and Human Error Assessment (HEA);
Procedure Design Analysis (PDA); and,	Failure Modes and Effects Analysis (FMEA).

All hazards are a source of risk and to be able to understand this risk the hazards must first be identified.

This is performed using a variety of techniques that use both top-down and bottom-up approaches to provide a comprehensive hazard identification.

The tip to ensuring a comprehensive identification of hazards is not only to apply a variety of techniques and involve the correct stakeholders but also to ensure the full range of operational conditions is considered. Depending on the scope this will include e.g. not forgetting to consider all runway directions, operational modes, visibility conditions and the combinations of all three.



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# Risk Assessment

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For every change our risk assessments are structured to consider:

- Limitation of an individual's risk exposure;
- Limitation of societal risk exposure;
- Optimisation of risk exposure;
- Type of risk assessment required;
- Justification of risk exposure;
- Monitoring of risk exposure;
- Continuous improvement.



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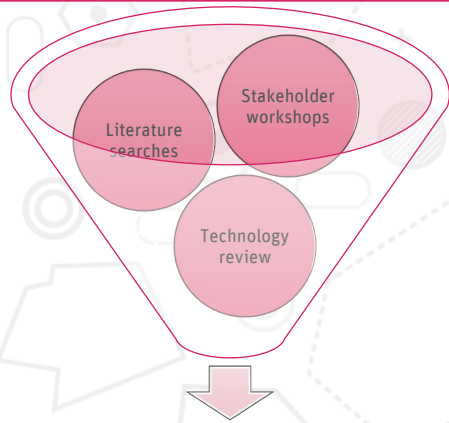
There is a legal expectation that the operational risk exposure associated with operations today as well as the proposed should be managed in accordance with “as low as reasonably practicable” (ALARP).

Think apply a set of risk principles at the core of our risk assessment that are aligned to our clients SMSs, the Health and Safety at Work, etc. Act, 1974, case law, as well as principles applied in other high-consequence industries, not only limited to transport.

Risk assessments will either be comparative or absolute. They can also either be qualitative or quantified. The ability to quantify the risk exposure depends upon the availability of data, the accuracy of the data that is available and the applicability of the data that are available to the risk assessment under consideration.

Think will ensure that the risk assessment performed is correct considering the nature of the change and operational complexity.

# Risk Optimisation



- 🔍 Identify risk reduction concepts
- 🧠 Initial filtering of risk reduction concepts
- ✓ Initial evaluation of risk mechanism
- 📄 Detailed evaluation of risk mechanism
- 👥 Mutual interactions between concepts
- 💡 Recommendations

Risk optimisation involves the identification of technologies, infrastructure, procedural measures, or other concepts to control and minimise the hazards, and their consequences, associated with the proposed operation. Risk optimisation involves applying the management principle of “As Low As Reasonably Practicable” (ALARP) to the optimisation of risk of an operation.

Risk optimisation is often an iterative process. Our process also considers the mutual interactions between risk reduction concepts, this reveals any concepts which are not complimentary and allows the whole operation to be considered as one system.

The final assessments should enable a set of safety requirements to be stipulated.



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# Justification

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Documentation of the safety argument that the risk exposure/benefit ratio is acceptable

The risks are known

The risks are controlled to an acceptable level

The risks are owned by specific organizations

Implementation safety cases to cover various phases from construction to change over day

Operational safety cases to cover each operational mode and various conditions

The risk exposure for each population group should be justified in comparison with the benefits that they receive and for society as a whole. This document considers the risk-benefit balance for the different individual groups classified as “occupants of an aircraft”.

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# We can help you understand the safety of your operation following a change and identify ways to reduce risk.

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Capacity



Airport  
Infrastructure



Airspace



ATC  
Procedures



Airline/Aircraft  
type



Flight  
Procedures



Safeguarding



Environment



Comms/NAV/S  
UR



AGL



Trajectory Based  
Operations



Remote and Digital  
Tower



Wake and Time  
Based Separation



Airport CDM



Performance Based  
Navigation



Flexible Use of  
Airspace



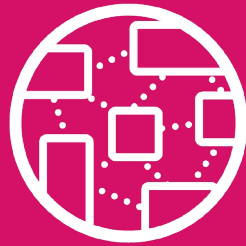
Unmanned Aerial  
Systems



Runway  
Optimisation



Virtual Centre



Enterprise and Airspace  
Architecture



Airspace Change



ATCO Team  
Organisation & Training