Understanding risk and how to derive Value - with Recent New Zealand Case Studies

Geraint Bermingham

NAVIGATUS CONSULTING

Risk?

- Perceptions of “Risk”
- Perceptions of “Risk Management”

Why manage risk?

Reduce uncertainty
Confront threats
Eyes wide open
Reporting
Increase chance of ….

Success

Principles

Risk management should:

- create and protect value.
- be an integral part of all organizational processes.
- be part of decision making.
- explicitly address uncertainty.
- be systematic, structured and timely.
- be based on the best available information.
- be tailored.
- take human and cultural factors into account.
- be transparent and inclusive.
- be dynamic, iterative and responsive to change.
- facilitate continual improvement of the organization.

Create and protect value

But first

Objectives

Risk = The uncertainty of achieving objectives
Eg:

- *Be safe*
- *Meet programme*
- *Come in under budget*

So you need first to define the Objectives

Case Study 1

Defining top level objective

Defining objectives?

Boeing 777-300 ER Introduction Project

AGGRESSIVE 2 YEAR PROGRAMME

“WOW” the customer!

What was the defined objective?

The risk process?

1. Introduction to team:
   - Expectations
2. The key principles
   - Defined objectives
   - Identify risks / issues early
   - Stay solution focused
   - Disciplined process
   - KISS

How done?

The process:

All teams involved

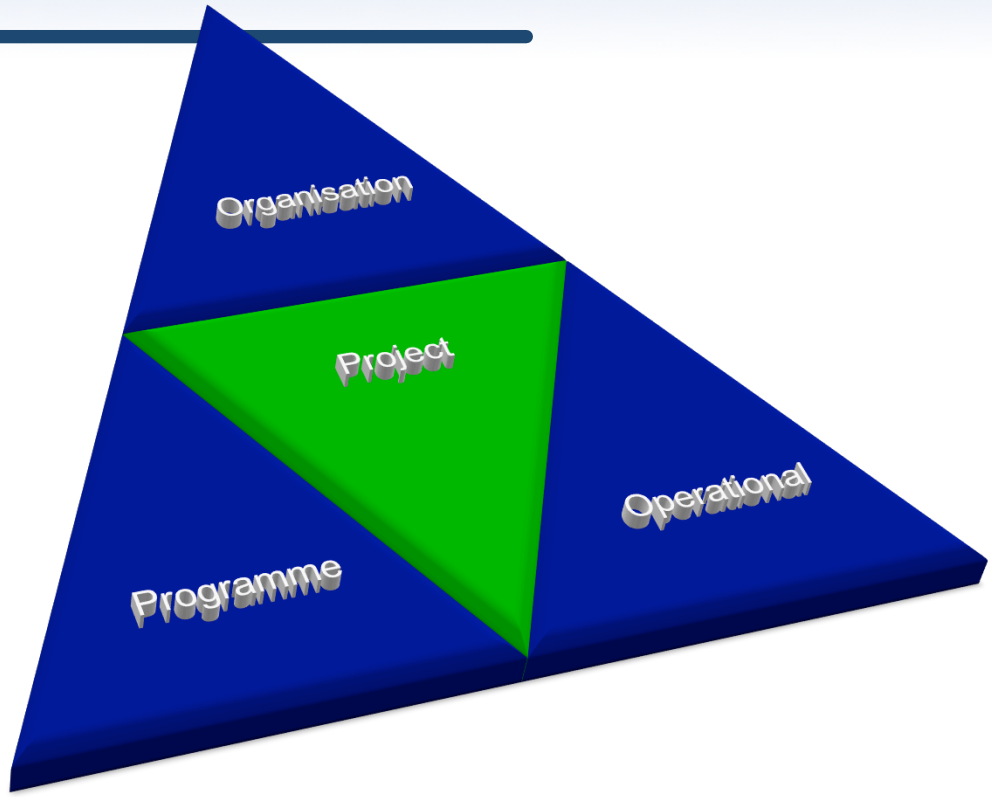
Regular review and reporting

Asked:

- What are the issues/concerns
- Why are these issues (cause?)
- So what? (Impact on objectives?)

Your Objectives?

Objectives



Top objective
Self imposed objectives (internal)
Externally imposed objectives (eg: H&S, Consent requirements etc)

Case Study 2

Delivering Exceptional Value through understanding risk

Queenstown!

- Sustained and continuing growth

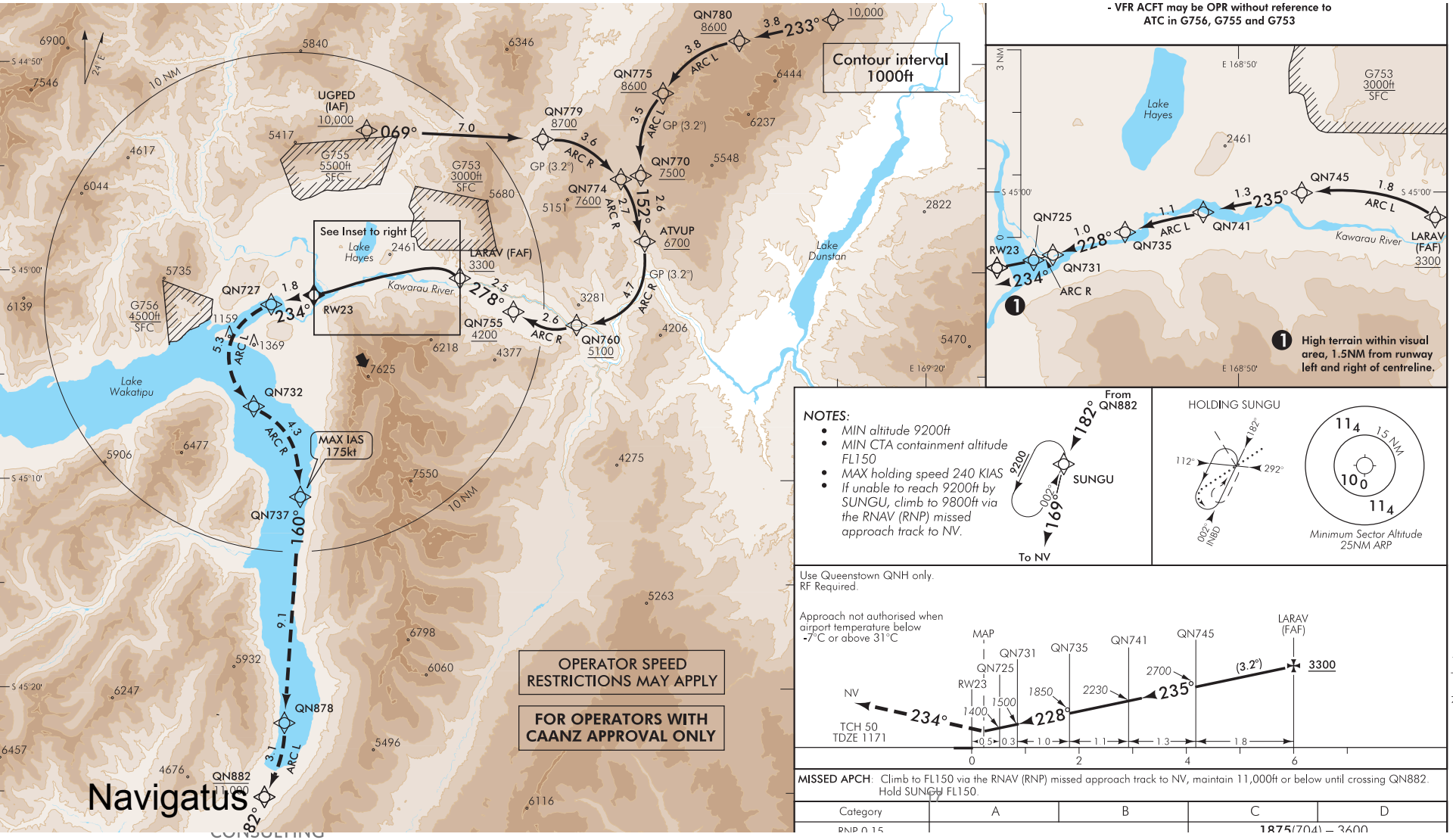
July 14:
International up 27.9%
Total up 10%

September 14:
Domestic up 7.3%
Total up 6.5%

Queenstown Airport Constraints

- Constrained by daylight only operations due operational constraints
- Short winter days
- Uneven schedule across the year

Terrain challenged!



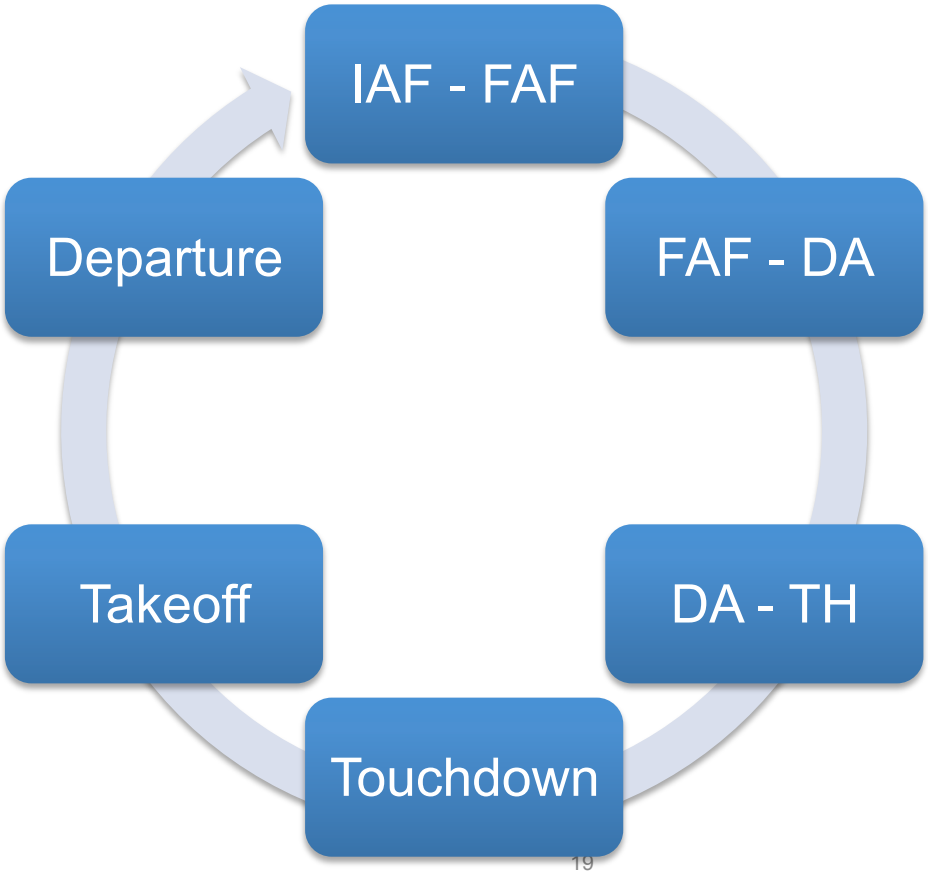
Navigatus

Process Integrity Rules

- Preconceived ‘views’ have no validity
  - Let ‘pet’ issues go
  - “The risk is whatever the risk is”
- Workshops:
  - All contributions to go through same and complete analysis process
  - All ‘expert’ contributions carry equal weight
  - Open debate
  - Inform ‘judgments’ with hard data wherever possible
- Employ Delphi out of workshop
  - Output hidden until after Delphi and QA
- No ‘preferred’ mitigation package
- Commercial factors explicitly out of scope

Analysis methodology

Break the problem down into manageable pieces



Analytical Tools

Contemporary best practice. Conforms to: ISO 31010 & AC139-15

Analysis tools used:

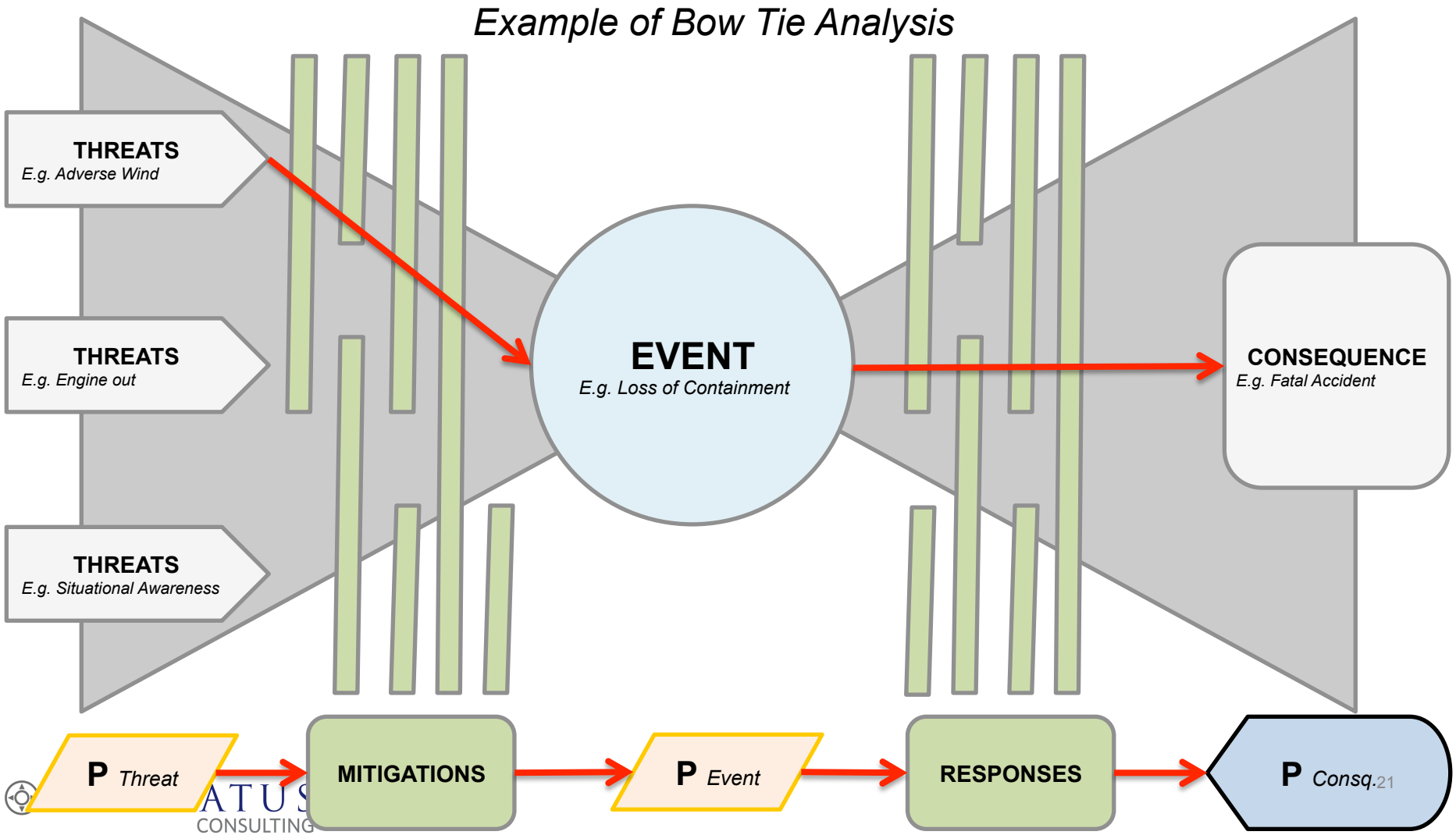
- Scenario analysis
- Classic risk assessment (Matrix)
- Human Factors analysis
- Modelling (Visualizations)

- Simulator testing

Take away:
Use the right tool for the problem in hand
There is no ‘One size fits all’

Example tool

Contemporary best practice. Conforms to: ISO 31010 & AC139-15



Modelling – Visulisations

The following visualisations developed:

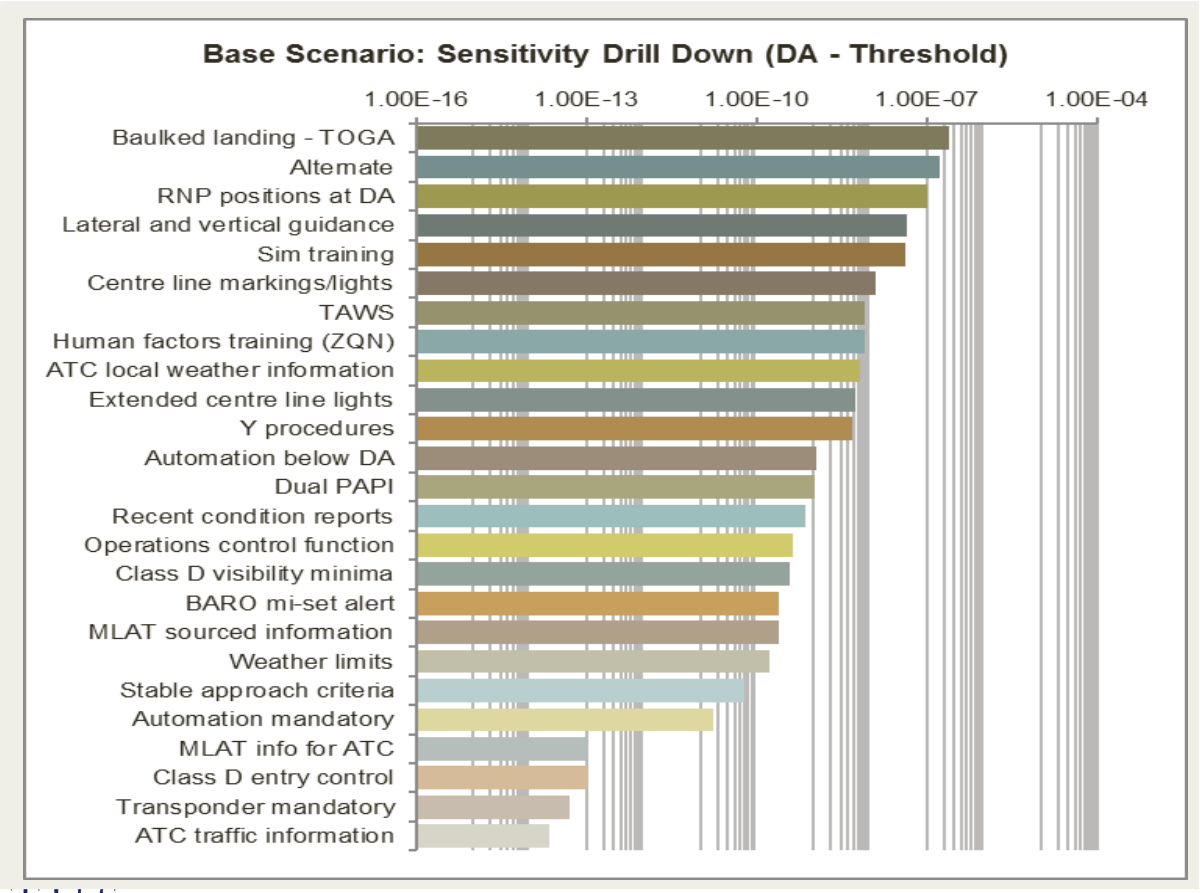
- Existing runway (30m)
- Various lighting packages

- Widened runway (45m)
- Various lighting packages


RNP Y RWY 05 (APP)
Altitude: 400’ AAL
Runway heading: 054°
Aircraft course: 048°
Rate of turn: ~ 1° /sec
Offset from CL: 22m
Next WP: QN545 (320’)

Focus on what matters

Example: Sensitivity analysis



The Risk Criteria Problem

Hazard ID (Eliminate, Minimise, Protect)

- *Simple in theory – but difficult in practice*

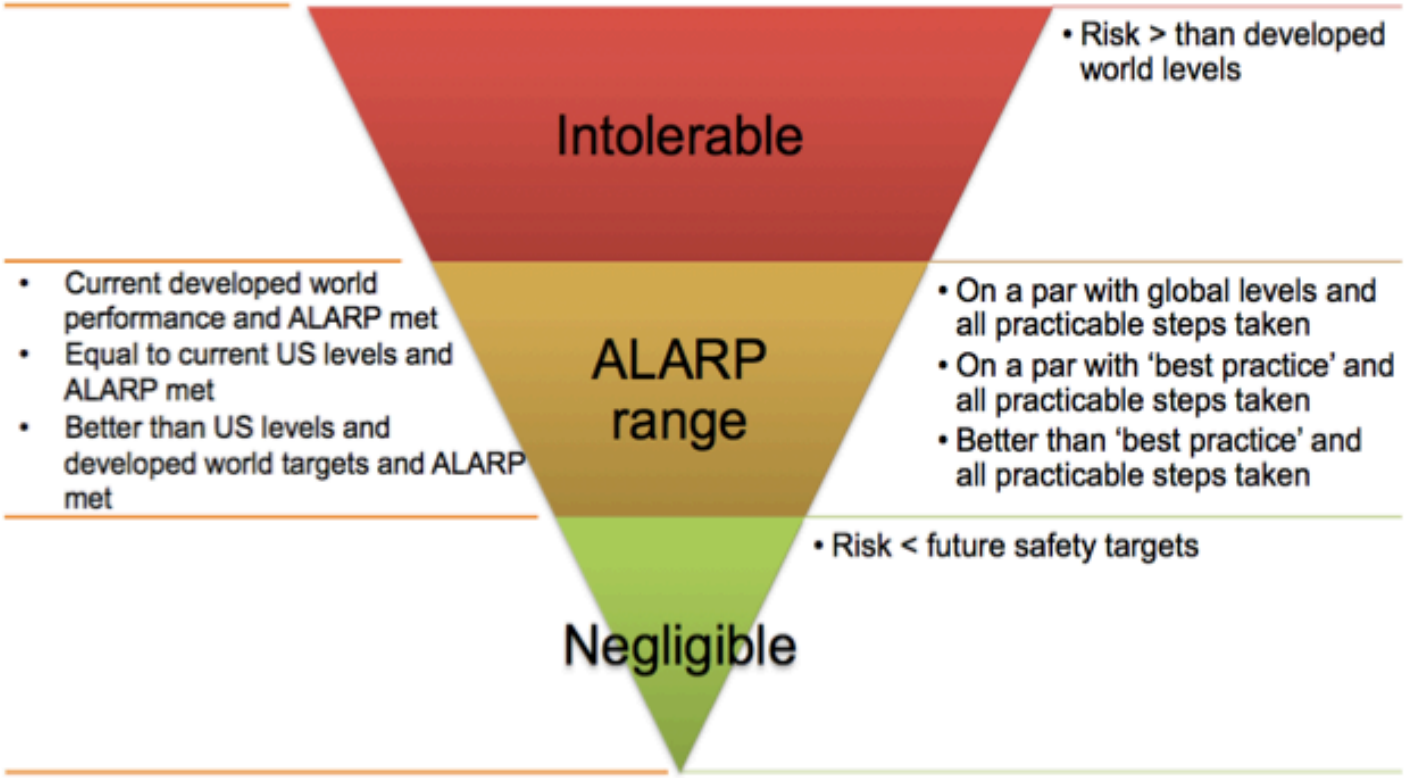
ALARP (As Low As Reasonably Practicable)
ISFARP (In So Far As Is Reasonably Practical)

- *But what is Reasonable?*

Benching marking (What is accepted elsewhere)

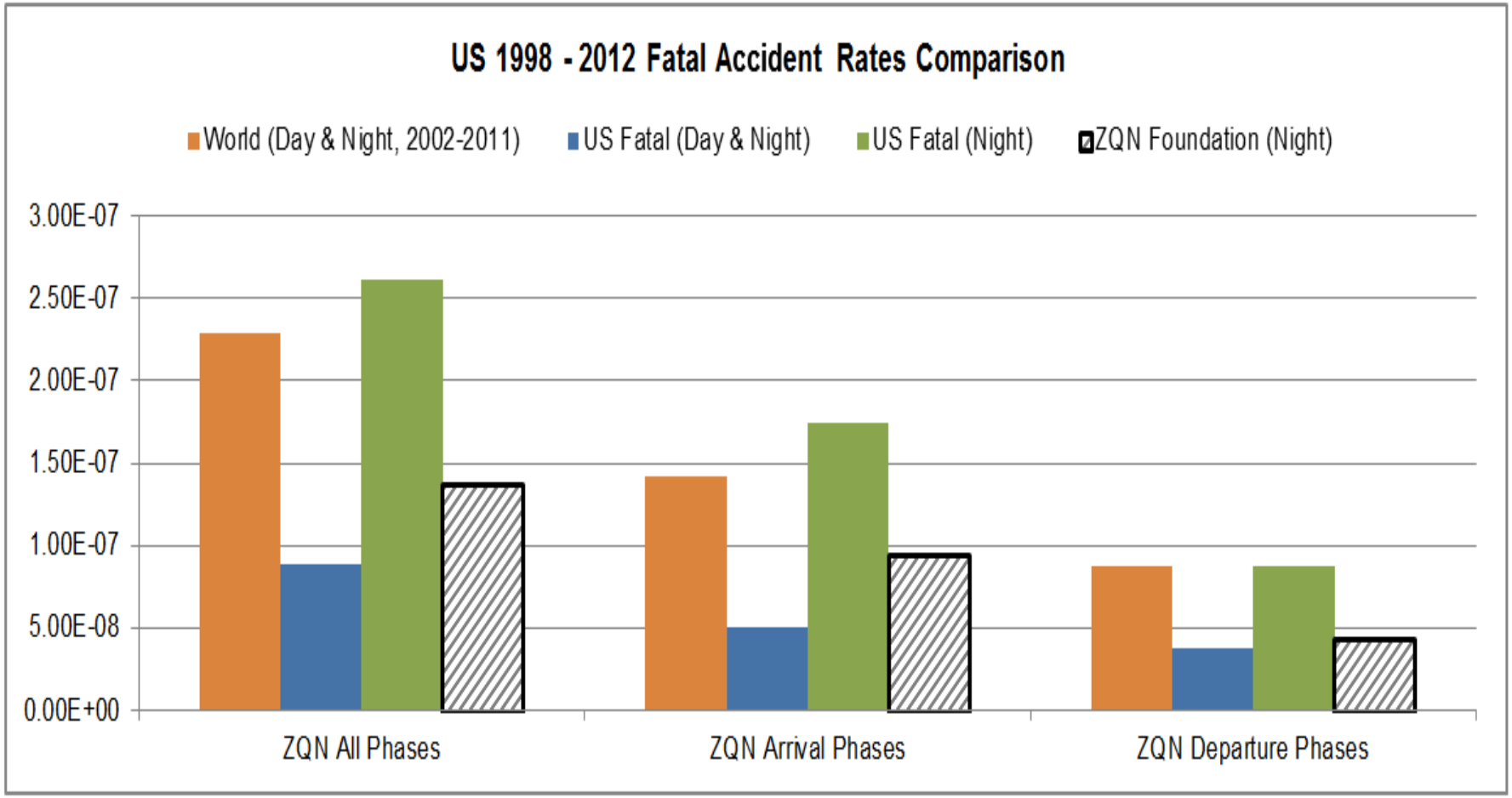
- *Implicit acceptance of what is acceptable*

ALARP



Note: The three bullet points shown in the above figure are intended to define in general terms the upper, mid and lower bounds of the ALARP region.

Benchmarked Criteria



NAVIGATUS CONSULTING

Exceptional Value

- 10 - 70% greater utilisation with same infrastructure (across the year)
- De-peaking = less infrastructure needed
- Improved flexibility for customers
- Stable schedule – enables realistic commuting (AKL / Oz)
- Forecast doubling of PAX numbers over 5 years
- Key enabler of growth:
  - Airport
  - Central Otago
- *Weekend skiing ☺*

NAVIGATUS CONSULTING

Lesson?

- Understanding risk = Freedom to grasp opportunities,
- To have the confidence to step boldly forward ….

- *See the future – embrace the future!*

NAVIGATUS CONSULTING

This is why we fly