

*The New Zealand Society for*  
***RISK MANAGEMENT Inc.***  
*[www.risksociety.org.nz](http://www.risksociety.org.nz)*

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Power

# Risk Management

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## within Safety Management Systems in Aviation

*Keeping it simple!*

Peter Wakefield  
Navigatus Consulting

# SMS is .....

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simple and systematic

as much about mind-set as process

about recognising and managing your risk

# What's the objective of an SMS?



# NZ CAA SMS Format – AC00-4

NZ CAA has issued an Advisory Circular (AC)

Proposal to progress to a requirement for NZ based aviation operators to have an SMS

Key SMS differences from current QMS based systems are → 

|    | AC00-4 SMS Element                                                     |
|----|------------------------------------------------------------------------|
| 1  | Safety Policy and Accountability                                       |
| 2  | Coordinated Emergency Response Planning                                |
| 3  | Development Control and Maintenance of Safety Management Documentation |
| 4  | Hazard Identification                                                  |
| 5  | Risk Management                                                        |
| 6  | Safety Investigation                                                   |
| 7  | Monitoring and Measuring Performance                                   |
| 8  | The Management of Change                                               |
| 9  | Continuous Improvement of the SMS                                      |
| 10 | Internal Audit Programme                                               |
| 11 | Management Review                                                      |
| 12 | Safety Training and Education Programme                                |
| 13 | Communication of Safety-Critical Information                           |



# NZ CAA SMS Format – AC00-4

NZ CAA has issued an Advisory Circular (AC)

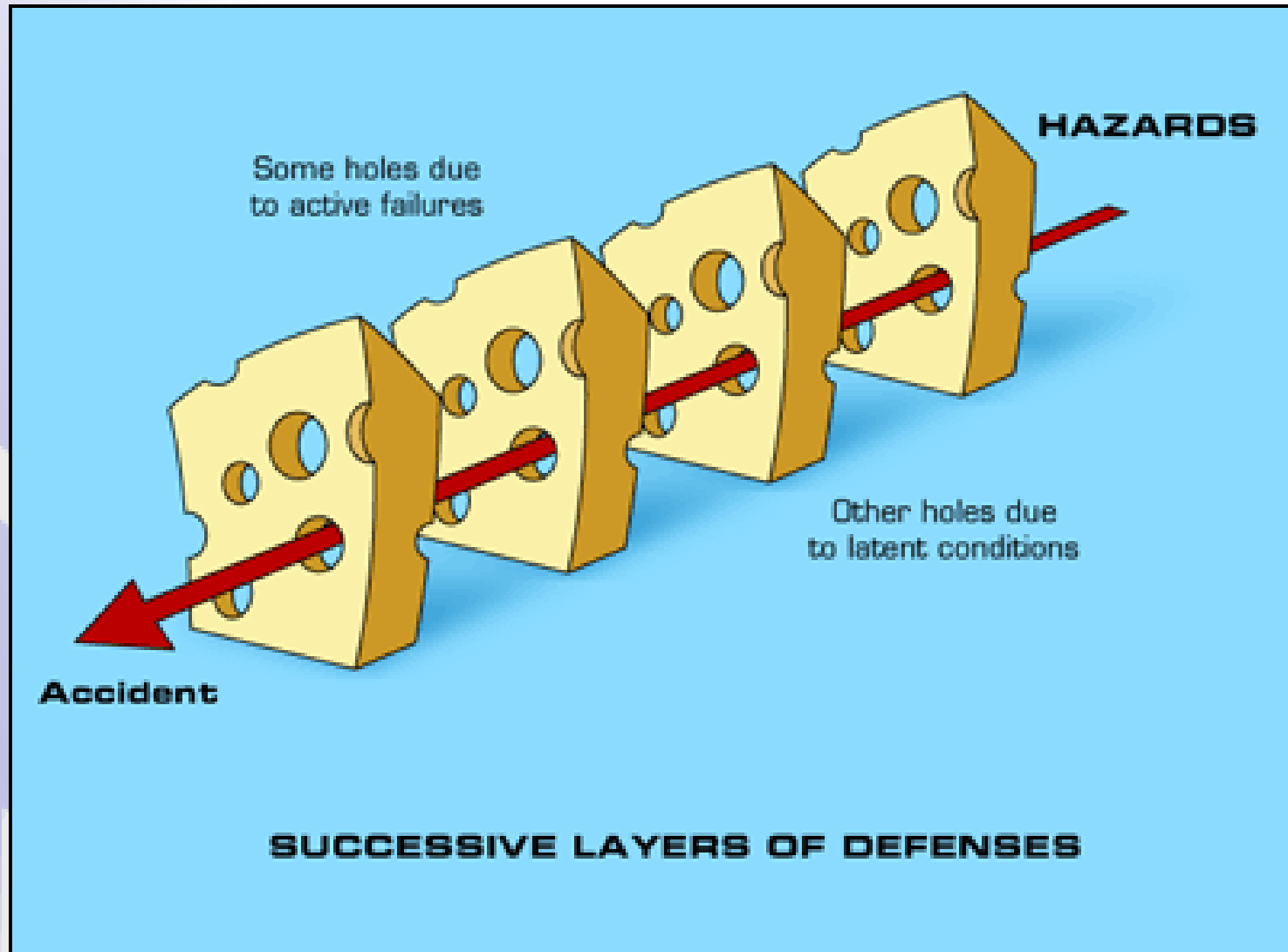
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# The James Reason Model



# Why do we need SMS?

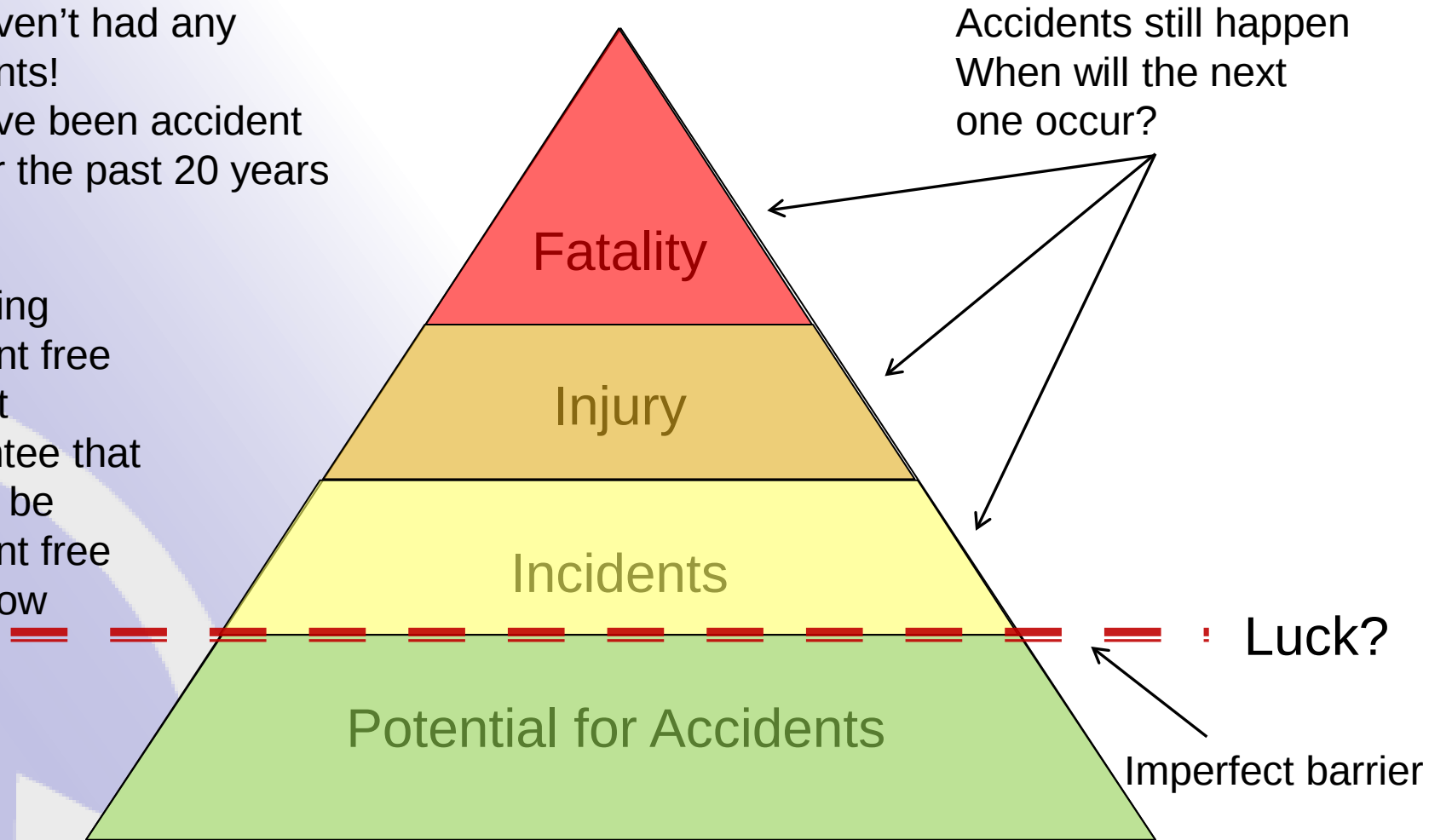
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# Why do I need an SMS?

## I've never had an accident!

We haven't had any accidents!  
We have been accident free for the past 20 years

But being accident free doesn't guarantee that we will be accident free tomorrow



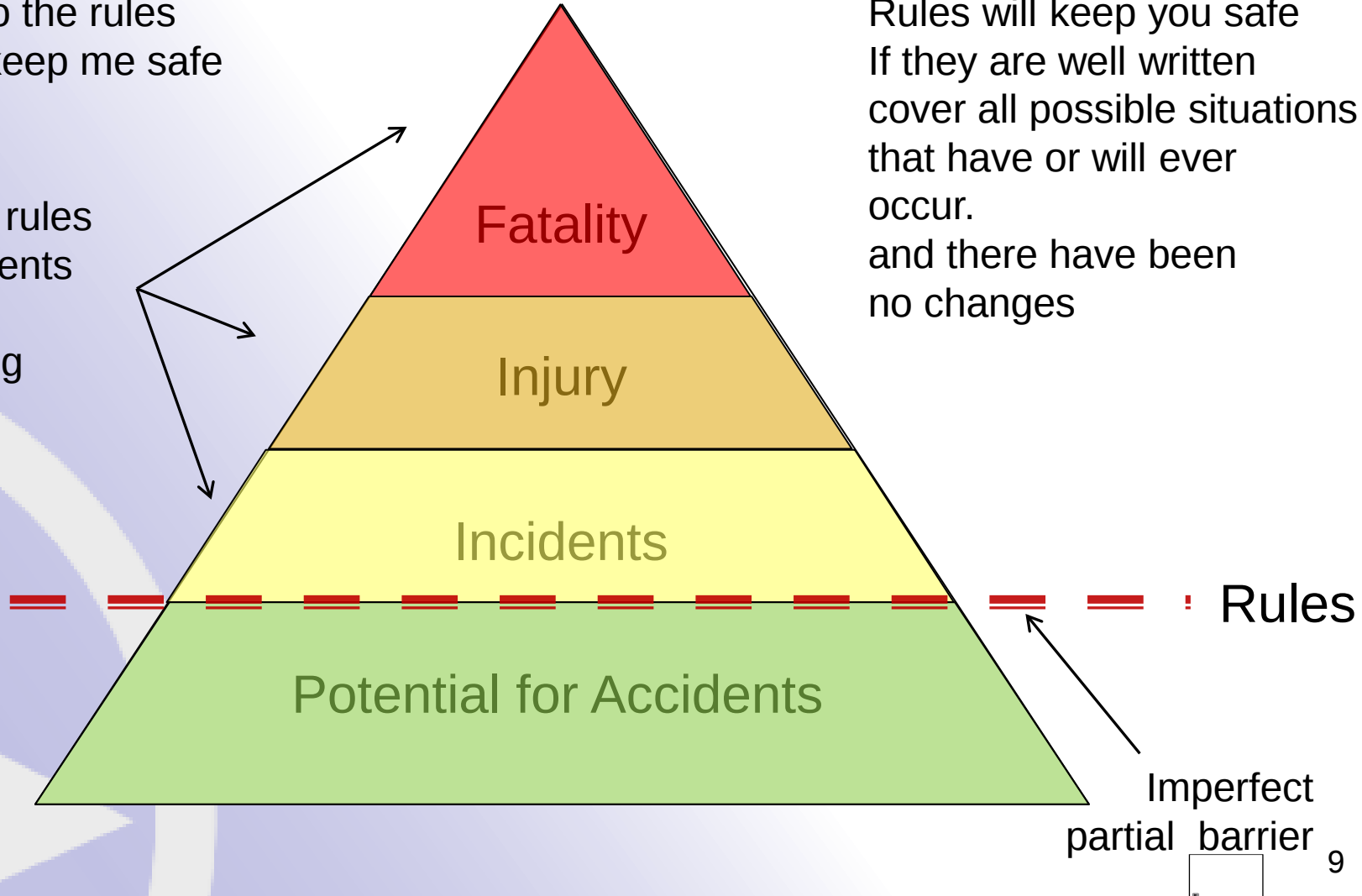
# Why do we need SMS?

## We follow the Rules!

I'll stick to the rules  
that will keep me safe

We have rules  
but accidents  
are still  
happening

Rules will keep you safe  
If they are well written  
cover all possible situations  
that have or will ever  
occur.  
and there have been  
no changes



# Why do we need SMS?

## I'm a skilled airman!

### Airmanship: I...

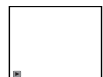
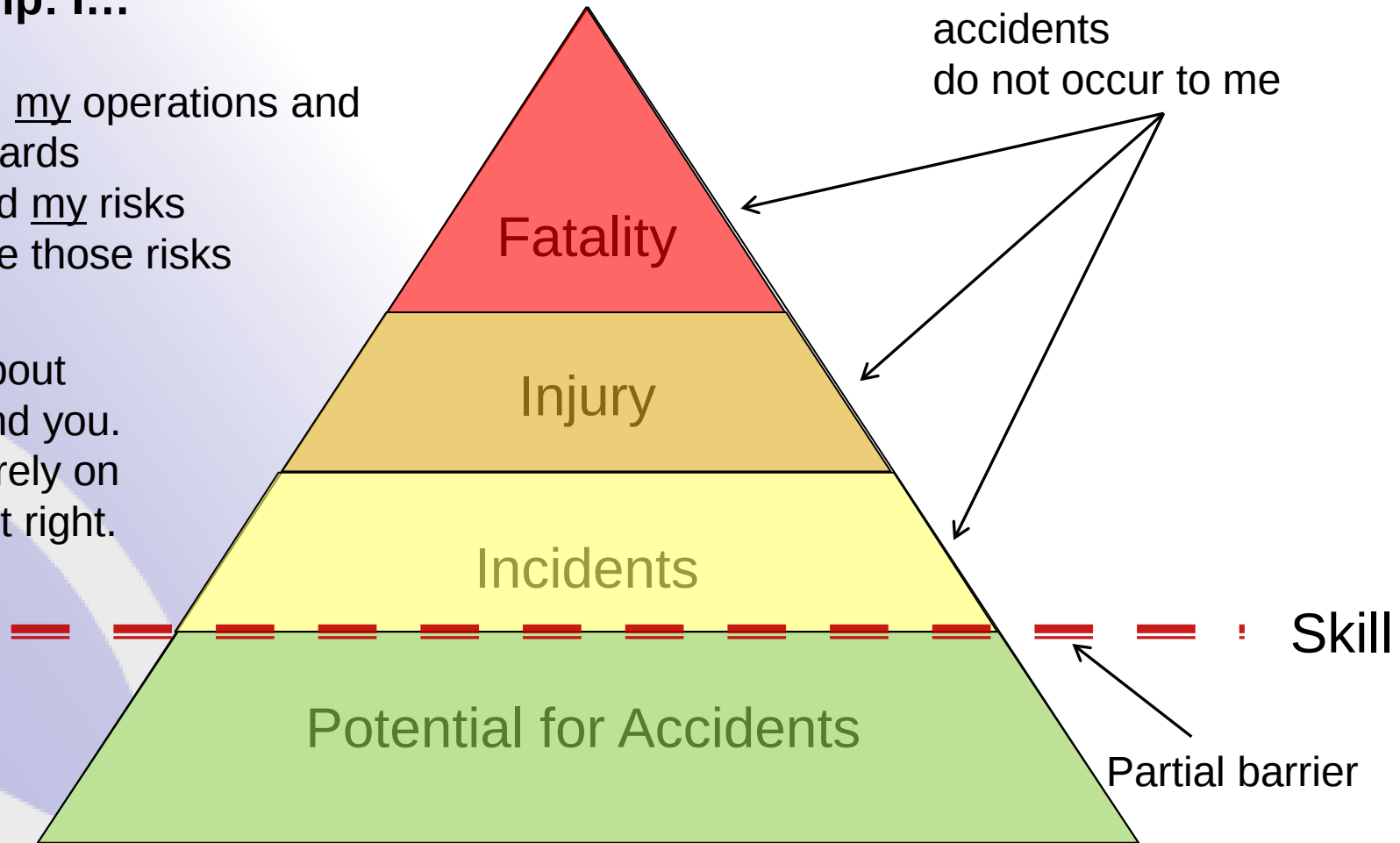
Plan well

Understand my operations and identify hazards

I understand my risks and manage those risks

But what about those around you. Those you rely on to also get it right. Are they as skilled?

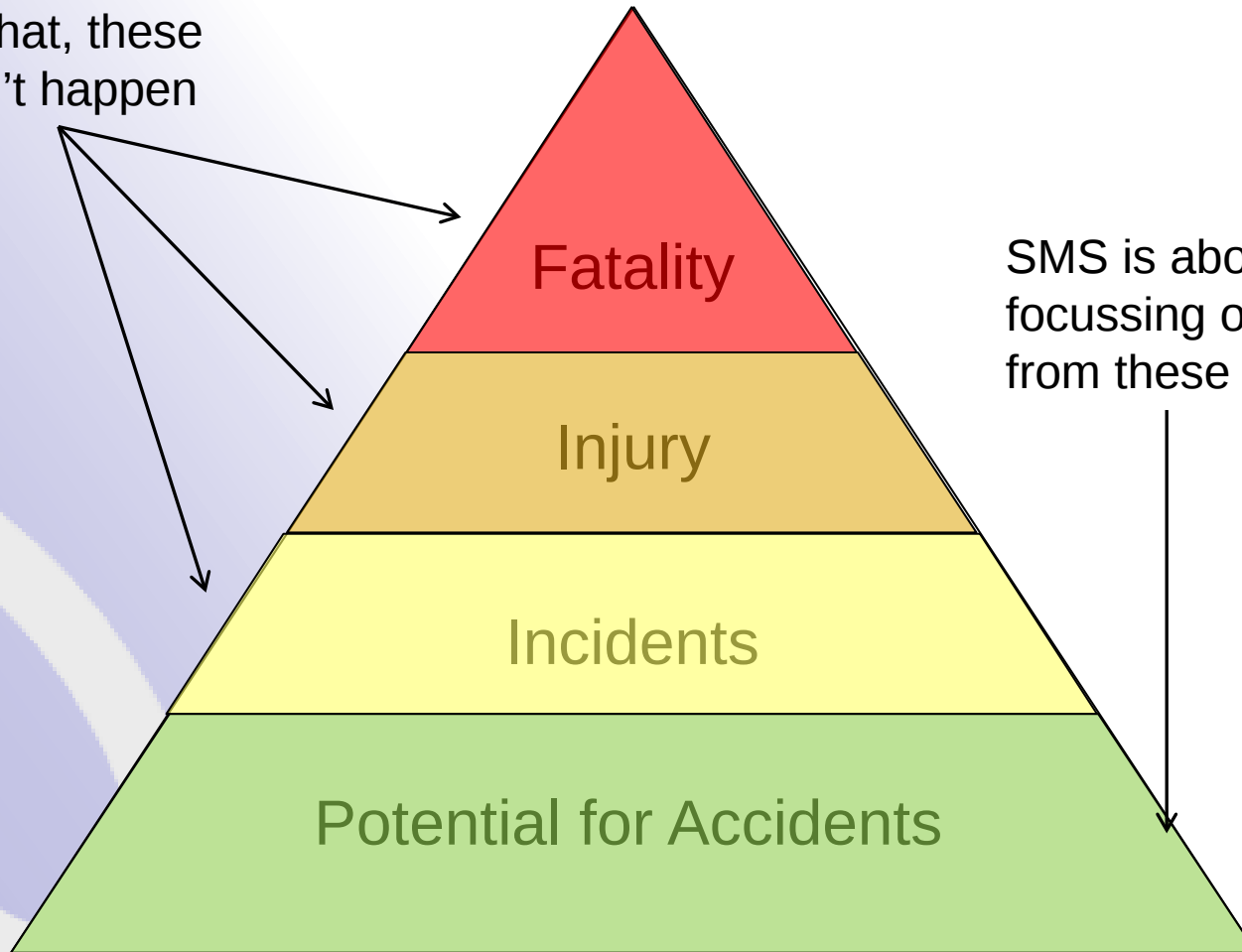
I therefore ensure accidents do not occur to me



# Why do we need SMS?

A structured way to **recognise** risk!

So that, these  
don't happen

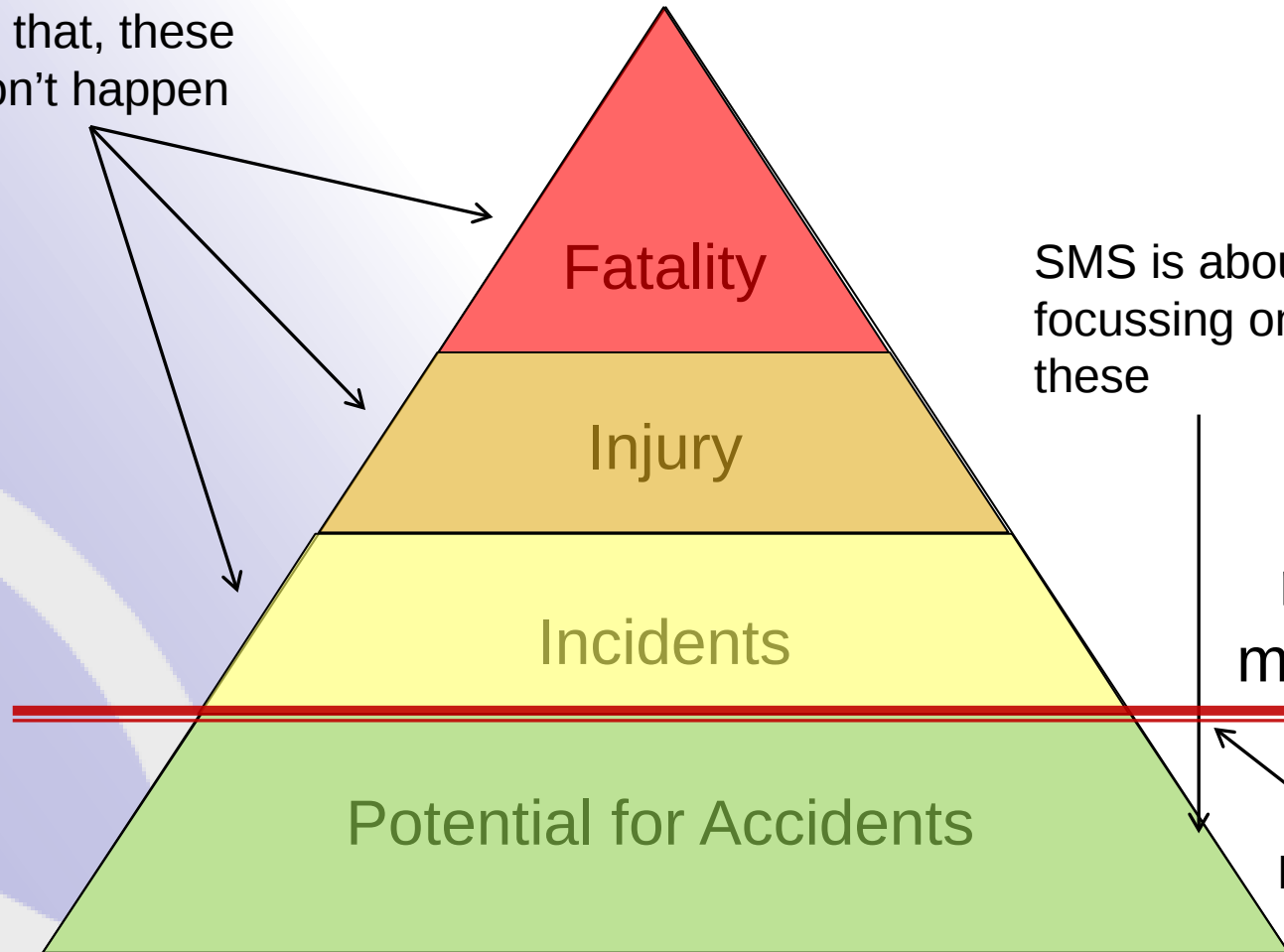


SMS is about  
focussing on and learning  
from these

# Why do we need SMS?

## A structured way to **manage** risk!

So that, these  
don't happen



SMS is about  
focussing on  
these

Systematic  
recognition/  
management  
of risk

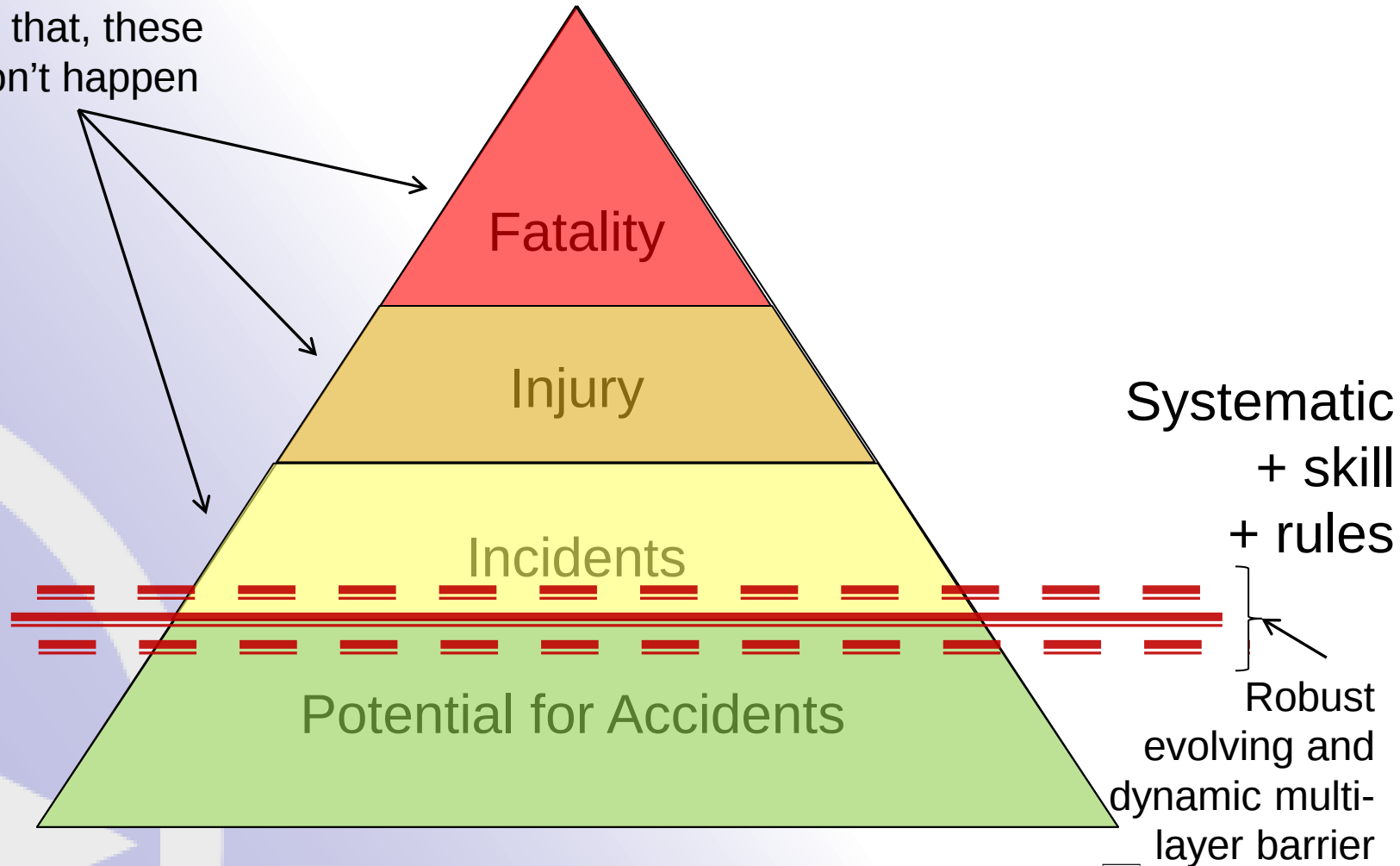
Dynamic and  
evolving  
barrier



# Why do we need SMS?

## A structured way to **manage** risk!

So that, these  
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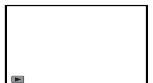
# Real World Examples

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Simple systematic

Attitude and mind set

Identify and manage risk



# What do we mean by mind-set?

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- > Having a mind-set which is always looking for hazards and potentials for harm
- > Being part of a culture that openly communicates on all issues
- > Using a process that captures
  - » Near Miss reports
  - » Unusual situations which may cause an accident
  - » Situations that present a potential for harm (hazards)



# How do we recognise hazards?

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- > We can use our experience of past accidents, near misses and hazards
- > Think about the operation and seek to identify what could go wrong
- > Report it if you see it, or are unsure
- > Question everything
- > **Mindfulness and awareness**

# Real World Example

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Aircraft Re-Fuelling  
Contaminated Fuel



# Real World Example



Freedom Air flight arrives from overseas.  
Taxi's to stand at Palmerston North airport.  
What happens next?

# Real World Example

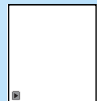
## Aircraft Emergency Slide

### Inadvertent deployment

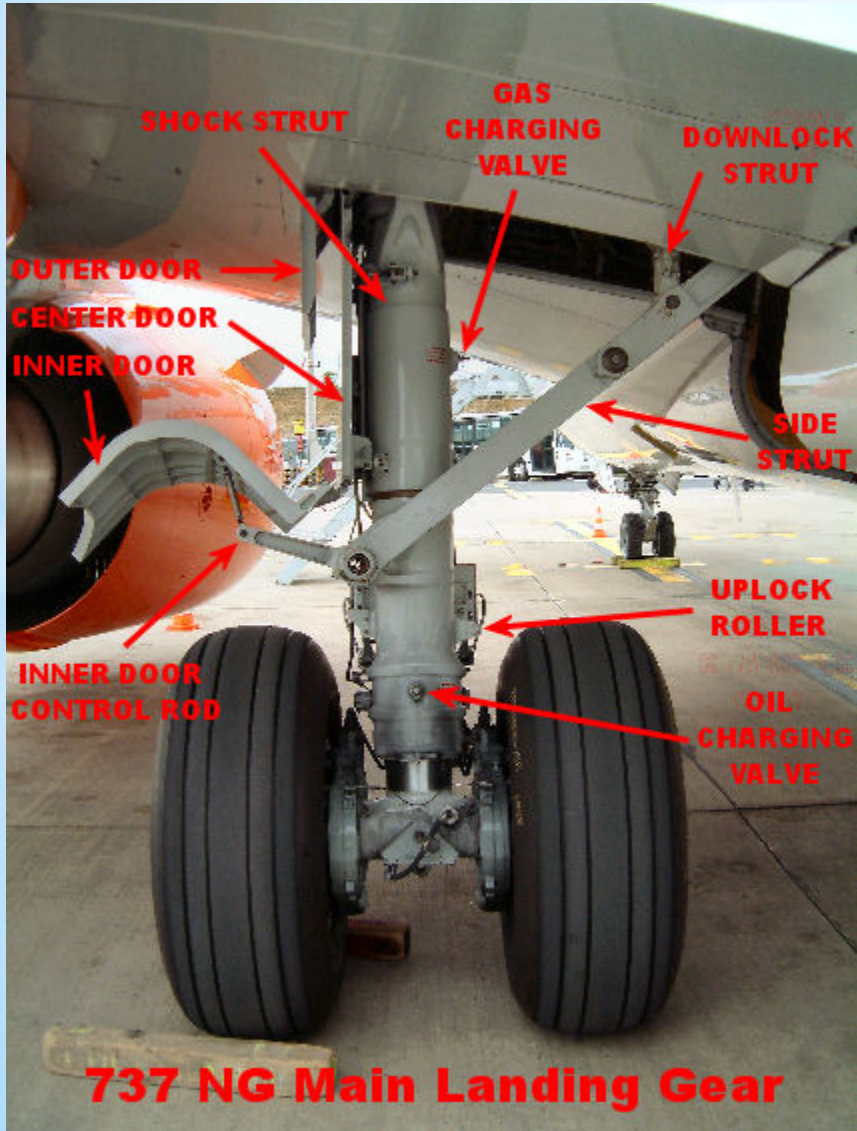


# Real World Example

What did we learn post incident?



# Real World Example



## 737 Main Landing Gear Tyre Failure.

Bolts came loose.  
Nut found by airport worker.  
Not reported.

Subsequent to the tyre failure during landing  
Other aircraft in the fleet  
were found with loose nuts!  
Post incident.

# Real World Example

Tarpaulin



# Real World Example

Tarp near planned area of GA aircraft ops = Hazard



# Real World Example

Tarp near GA aircraft ops = Risk



# Real World Example

Tarp caught in aircraft down draft = Incident



# Real World Example

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Tarp caught in aircraft rotor disk = Too late mate!



# Real World Example

Potential Hazard - Identified & Controlled



# Real World Example

Tarpaulin Near Aircraft = Managed Hazard



# Real World Example

Not caught in Aircraft Down Draft = Managed Hazard



# Real World Example

Nil Incident = Hi Honey, I'm Home



# Context is Key



**The same  
problem in a  
different  
situation can  
have a much  
worse  
outcome.**



# Safety Quote

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“In virtually all aviation accidents the key contributing factors prior to the accident were known .....

However, little or nothing had been done to rectify these factors until after the accident occurred”

Dr Rob Lee (ATSB, RAAF)

# Flight 1549

Took off from  
La Guardia  
Airport  
New York

Struck a flock  
Of Canada  
Geese

Both engines  
Failed

Landed in  
The Hudson  
River

No fatalities

Post accident  
Actions taken

But why  
Post Accident?



# What's the objective of an SMS?



# SMS is .....

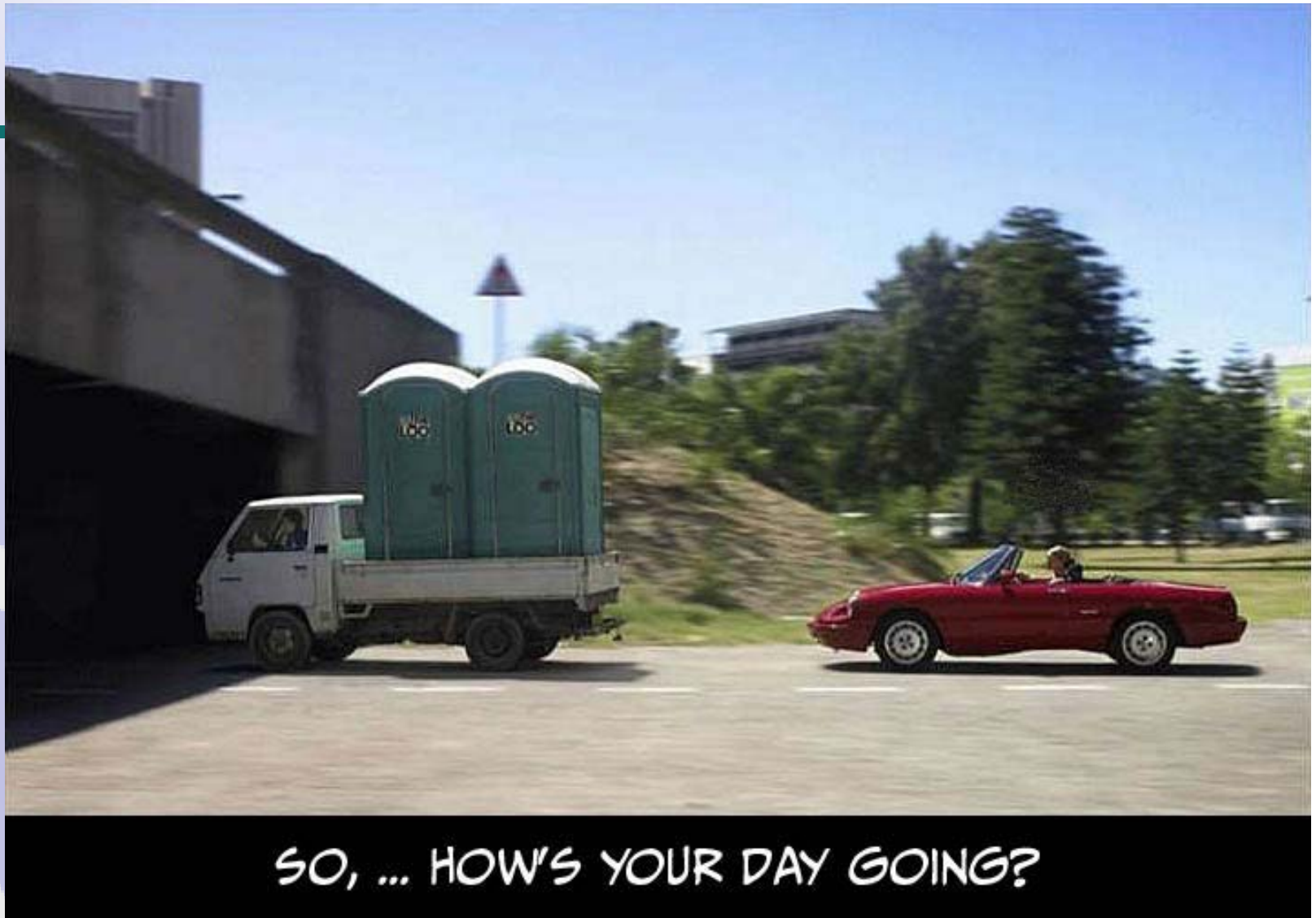
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Simple and systematic

as much about mind-set as process

about recognising and managing your risk

..... Period



Questions?

# Thank you

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Navigatus Consulting

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