

# IS SAFETY REALLY ENOUGH?

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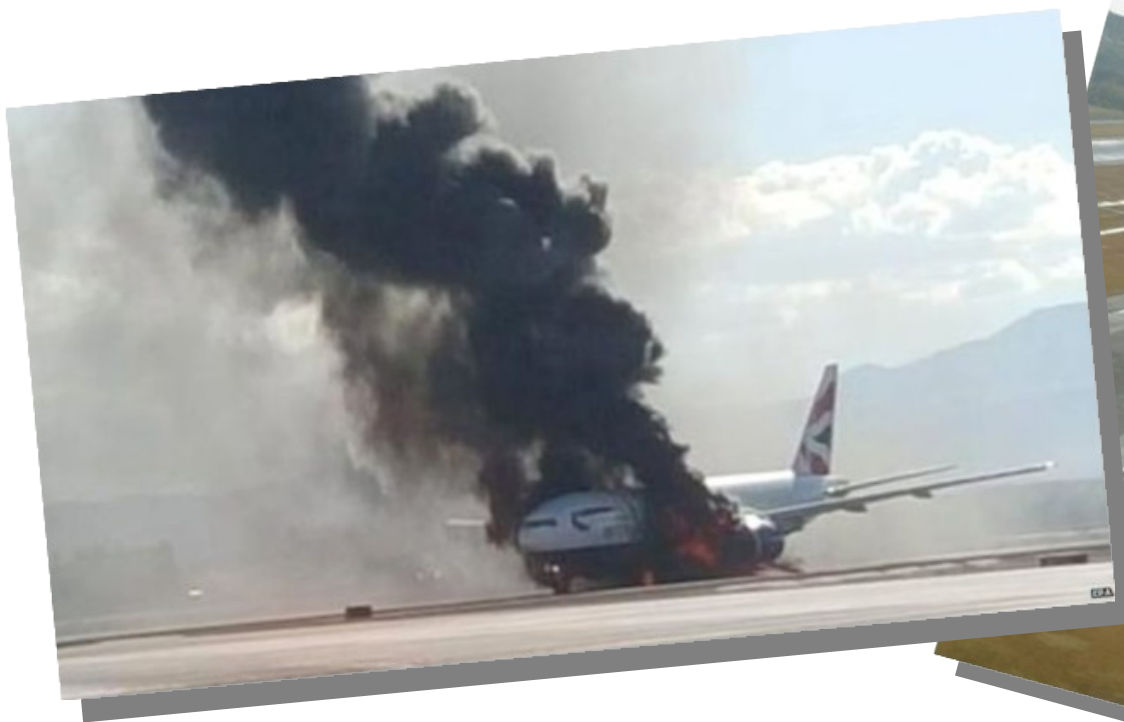
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# The problem is safety!



## 3. DEFINITIONS

3.20 Safety. Freedom from unacceptable risk.



Safety is the activity of ensuring that accidents are avoided.

# How do we think about safety?

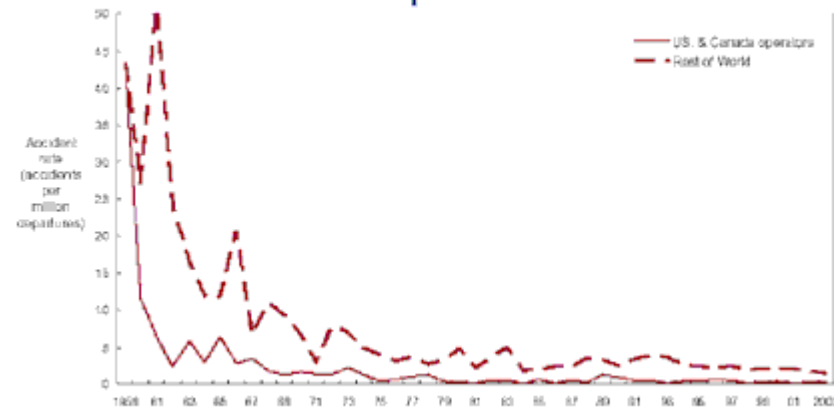


When we think about safety, we usually think about accidents - about (low probability) events with adverse outcomes.

The central aim of safety management is to prevent failures, malfunctions, and harm.

A system is safe if as little as possible goes wrong.

Statistical Summary of Commercial Jet Airplane Accidents  
Worldwide Operations 1959-2001



Airplane Safety. Boeing Commercial Airplane

# How do we define safety?

**Safety:** Freedom from unacceptable risk.

**Risk** An estimate of the probability of a hazard-related incident or exposure occurring and the severity of harm or damage that could result.

**Acceptable Risk.** That risk for which the probability of an incident or exposure occurring and the severity of harm or damage that may result are as low as reasonably practicable (ALARP) in the setting being considered.

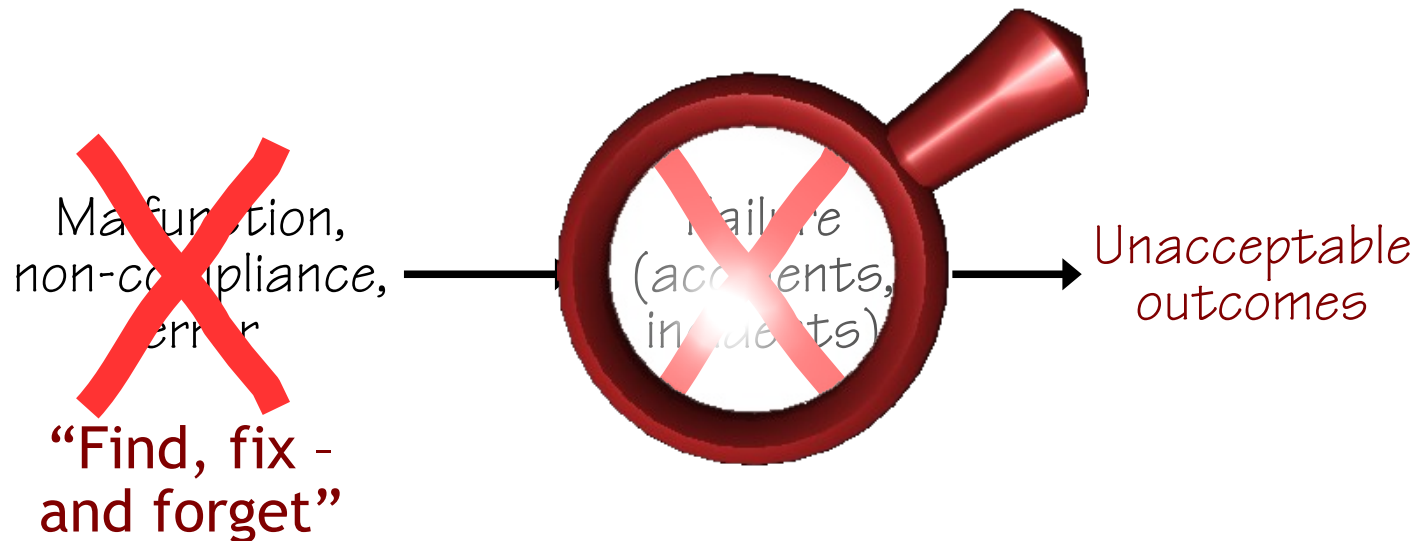
**Hazard.** The potential for harm.

**As Low As Reasonably Practicable (ALARP).** That level of risk which can be further lowered only by an increase in resource expenditure that is disproportionate in relation to the resulting decrease in risk.

**Safety:** Freedom from unaffordable harm.

# Managing Safety-I

Safety-I is a condition where the number of adverse outcomes (accidents / incidents / near misses) is as low as possible.



Prevent, eliminate, contain, constrain.

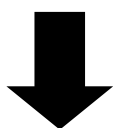


“Identification and measurement of adverse events is central to safety.”

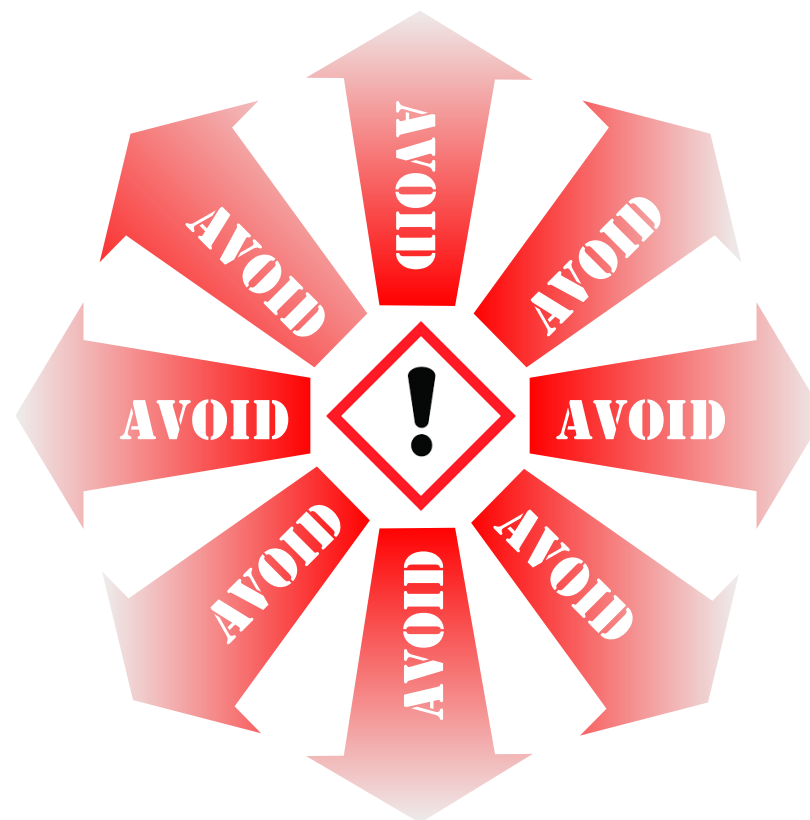
# Safety-I: Without unwanted outcomes

Safety is the condition of being without harm or other non-desirable outcomes.

Negative outcomes are caused by failures and malfunctions.



Find and eliminate causes of accidents and incidents



If you want to avoid or get away from something, then any direction you take will work!

# Managing safety by its absence



Harmful events attract attention. But they are rare and isolated.



Events are analysed step-by-step and part-by-part.



Responses are developed for each problem separately.

# The problem is NOT safety!

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Safety (reliability) is a dynamic non-event ... it is an ongoing condition in which problems are momentarily under control due to compensating changes



Non-events are *invisible*:  
reliable outcomes are  
constant, which means  
there is nothing to pay  
attention to.

Performance as  
required is the basis for  
safety, productivity,  
quality, trust, ...

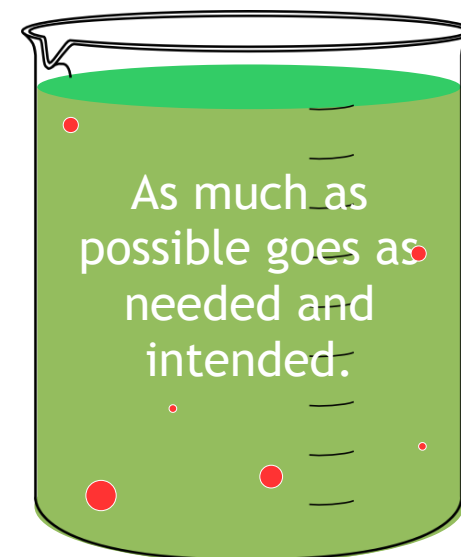
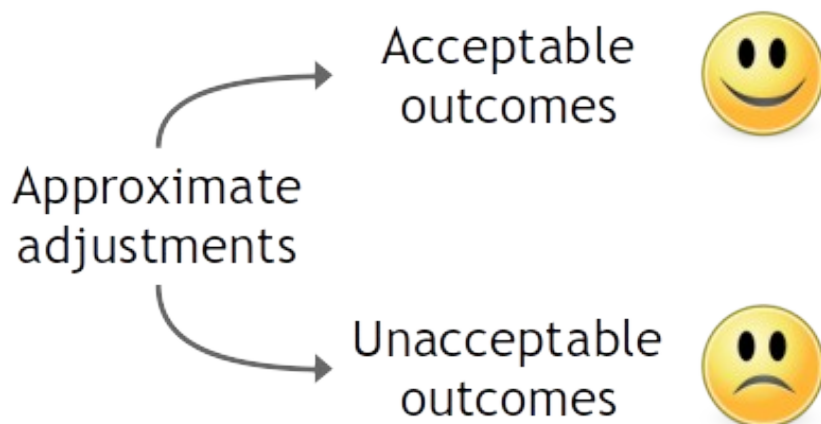
Weick, K. E. 1987. Organizational culture as a source of high reliability. California Management Review 29 (2), 112-128.

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# Managing Safety-II

Safety is a condition where as much as possible goes well. It is the ability to perform as required under varying conditions.



Support, strengthen, facilitate, improve.

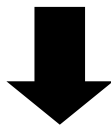


**“Something cannot go well and fail at the same time.”**

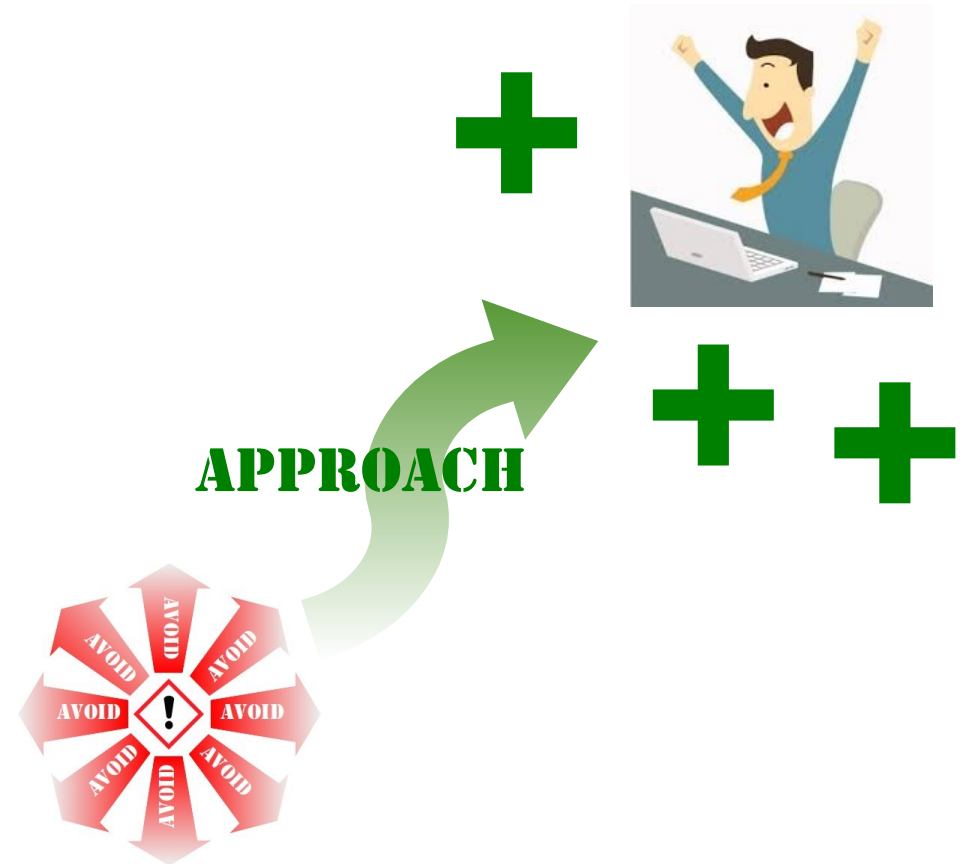
# Safety-II: With wanted outcomes

Safety is the condition of being with intended and wanted outcomes.

All outcomes involve some performance variability.

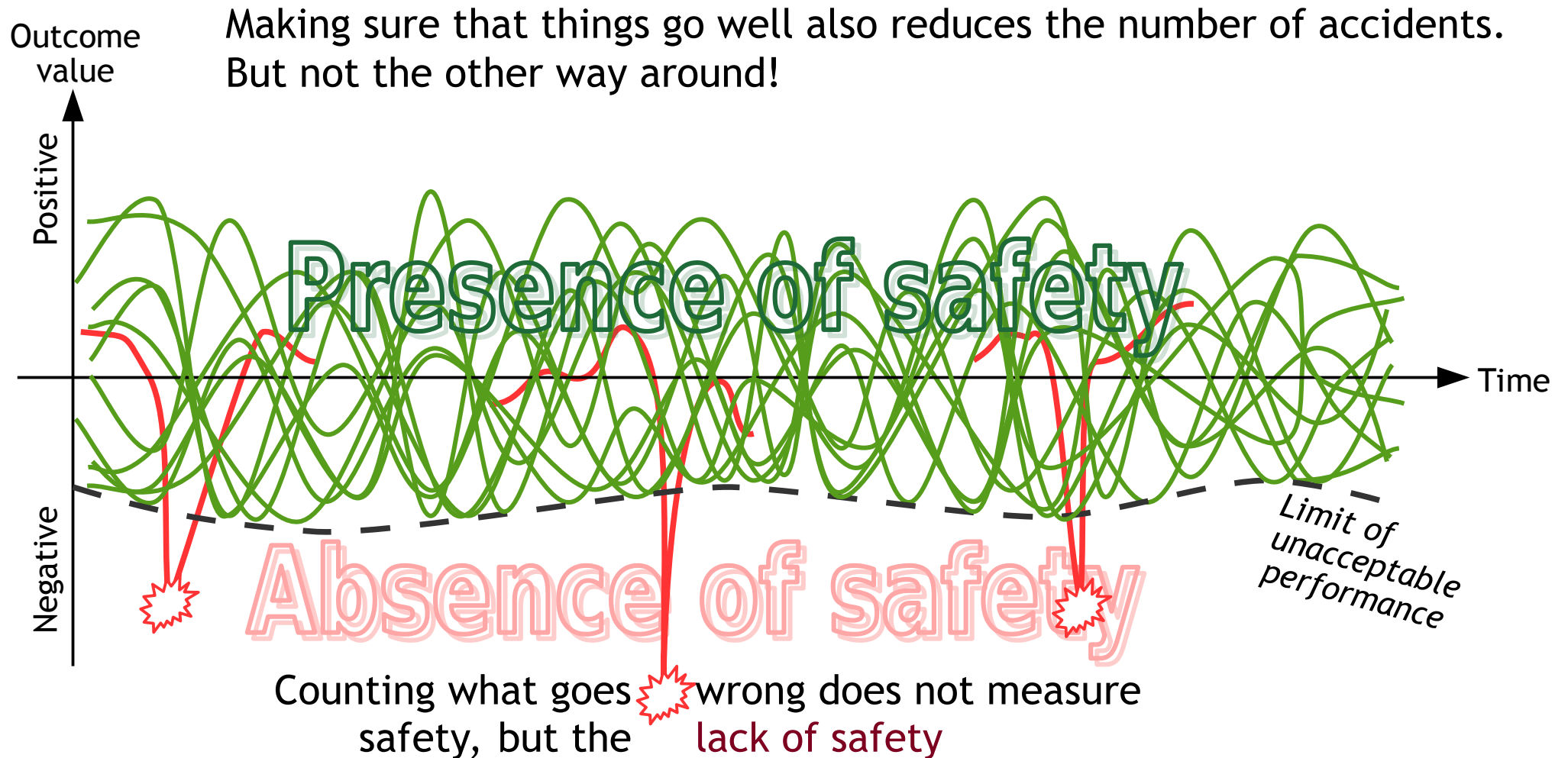


Study everyday performance in order to support what goes well.



If you want to approach or get close to something, you need to move in the right direction!

# Managing safety by its presence



# In practice, most of what we do goes well

*Every day, from morning to night,*



*practically everything we do*



*works just as it should ...*



*... and we take it for granted*

# Why do most things go well?



By responding in a flexible way



By monitoring what goes on



By learning what works and what doesn't



By anticipating  
- looking ahead



# Safety as “with” or “without”?



Health is ‘a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity’.

SAFETY

Safety-I:  
Safety is the freedom  
from unacceptable  
risk

Safety is the ability to perform as  
required under expected  
and unexpected  
Conditions alike.

Reduce unacceptable outcomes  
(accidents, incidents, etc)

Safety as “without”

Increase acceptable outcomes  
(everyday work)

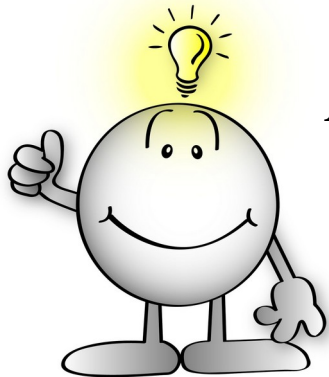
Safety as “with”

# What is management?



Management is a process of preparing, organising, and controlling the resources of an organisation to ensure that it can perform as required.

In order to manage something it is necessary to understand how it works – why things happen the way they do.



An understanding of how something happens is necessary to know:

- ▶ what to do and when – how to **respond**.
- ▶ what to look for, signals and trends – how to **monitor**
- ▶ what (and where) the relevant experience is – how to **learn**.
- ▶ what to keep in mind and be concerned about – how to **anticipate**.

# Management requires knowledge

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Position:

How (well) do you know the current position?  
Are there any delays?  
What happens around the organisation?

Goal:

How have goals been defined and targets set?  
Are there priorities or conflicting interests?  
What is the time window / time horizon?

Means:

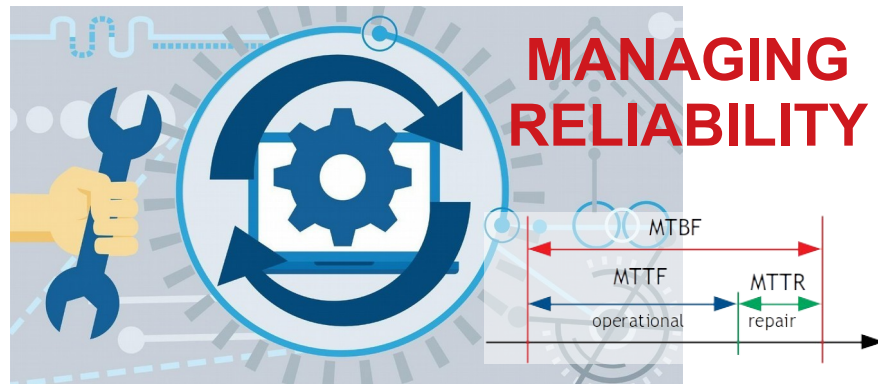
Are the means appropriate for the goals?  
How much effort will be required and by whom?  
Is there any “noise” that may drown the “signals”?

Three assumptions:

Everything will go according to plans.  
Conditions will be stable during the change.  
Nothing else will happen.



# Managing must embrace many aspects



Can an organisation be managed by looking at different aspects in isolation?

Are goals and means independent of each other?

# Final thoughts?

