

The Nimrod Review

An independent review into the broader issues surrounding the loss of the Nimrod MR2 Aircraft XV230 in Afghanistan in 2006

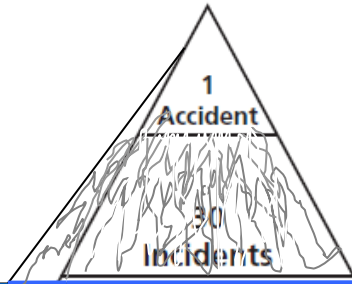
Charles Haddon-Cave QC

Report



XV230

**A FAILURE OF LEADERSHIP, CULTURE
AND PRIORITIES**



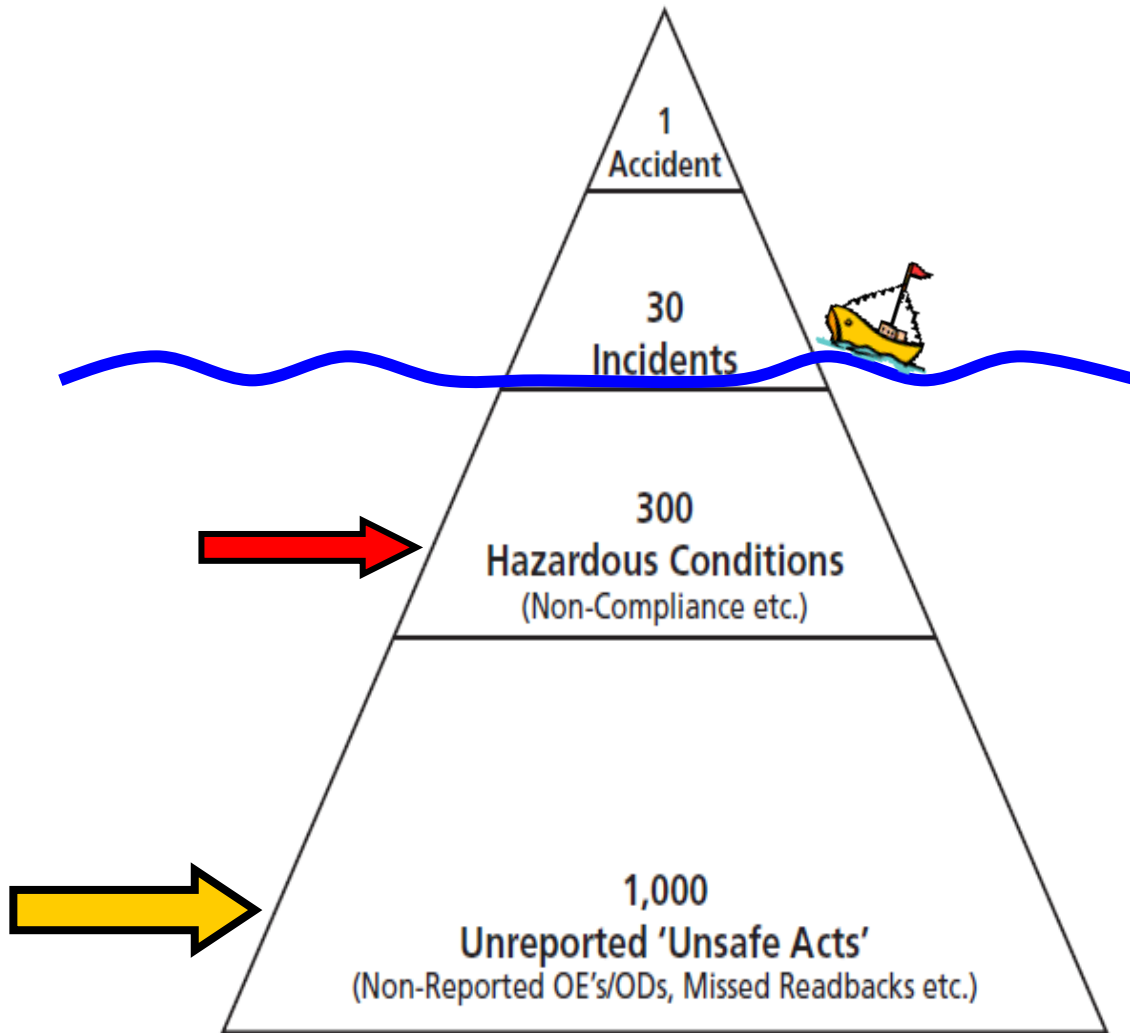


Figure 18.5: Examples of Heinrich's Triangle

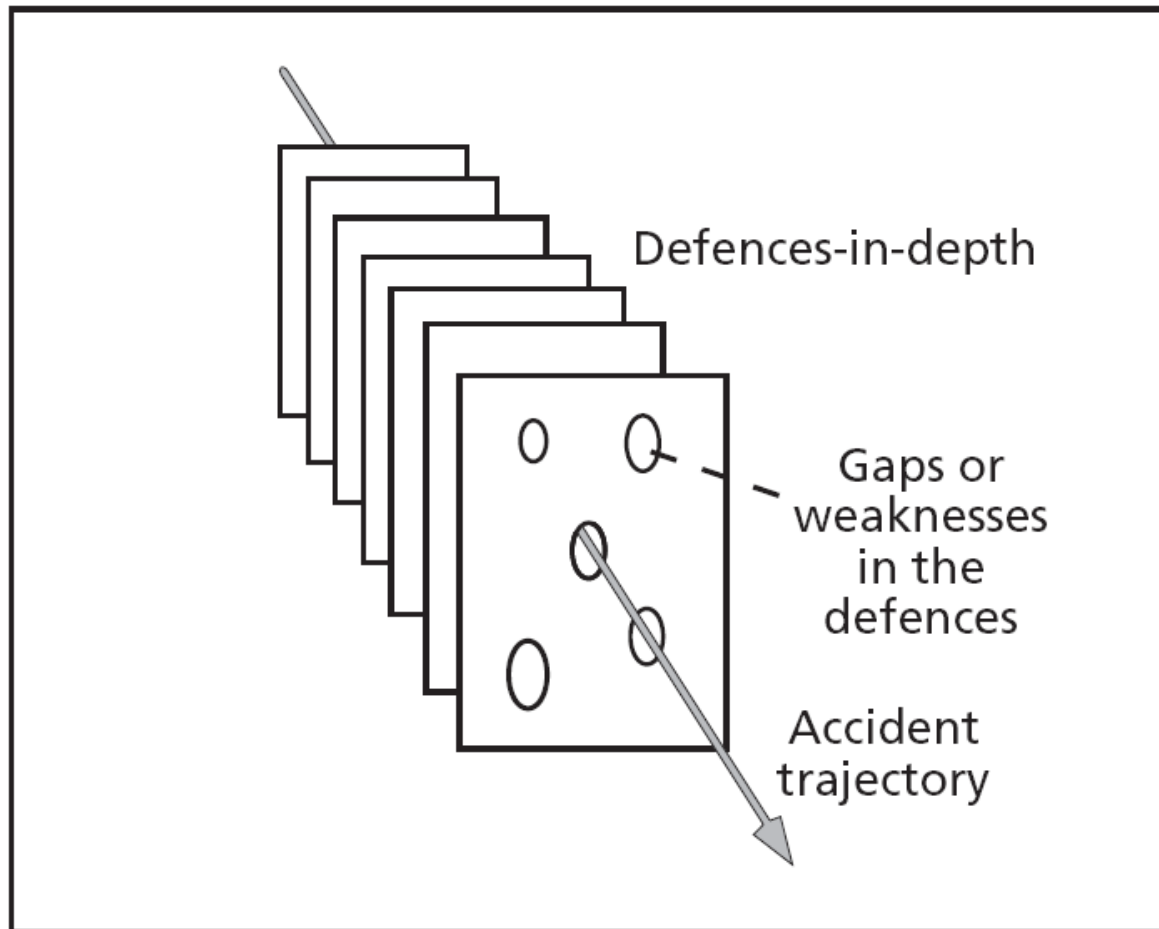


Figure 18.1: Classic 'Swiss Cheese' Model from Beyond Aviation Human Factors (Ashgate Publishing)

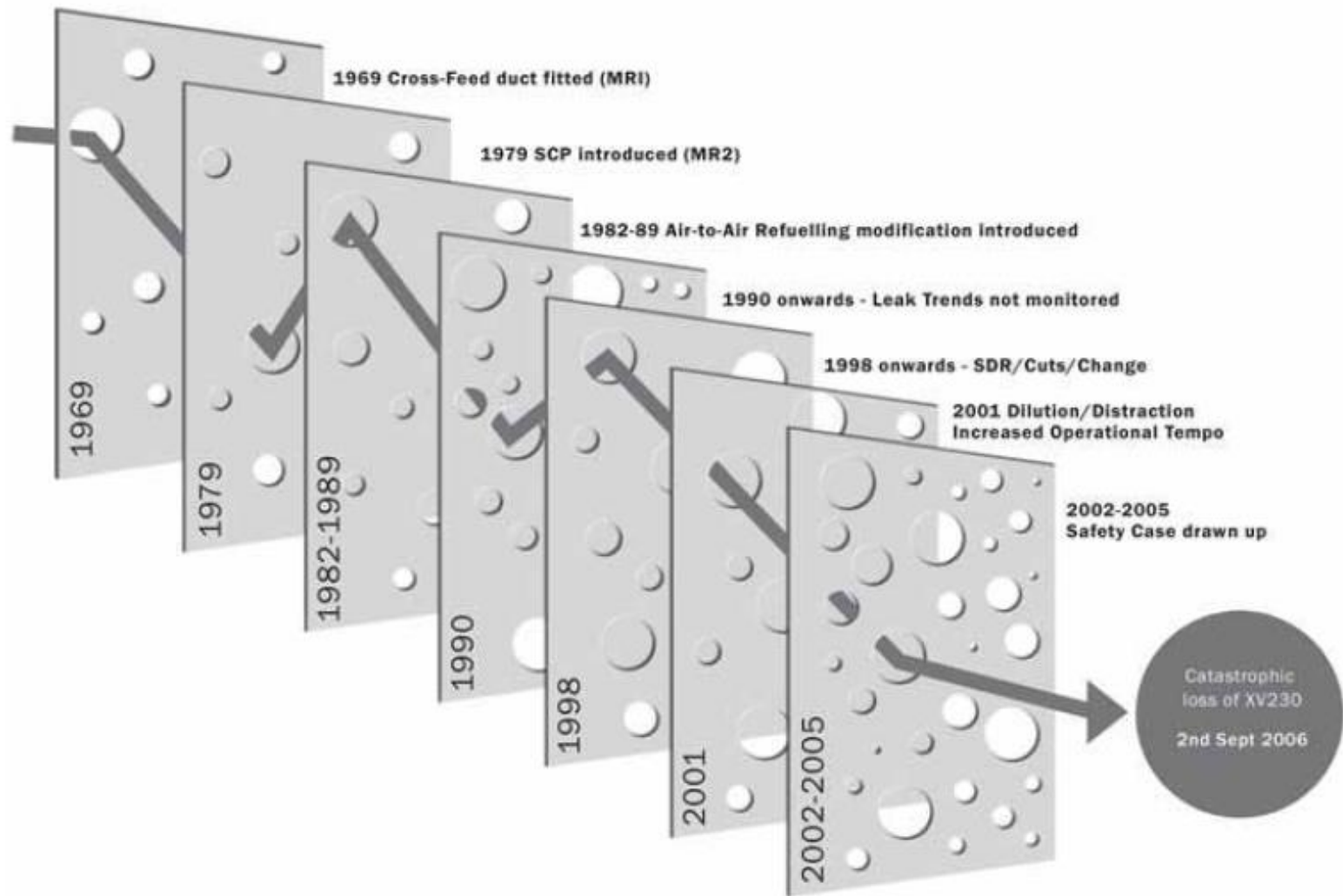


Figure 18.2: 'Swiss Cheese' Model as applied to XV230

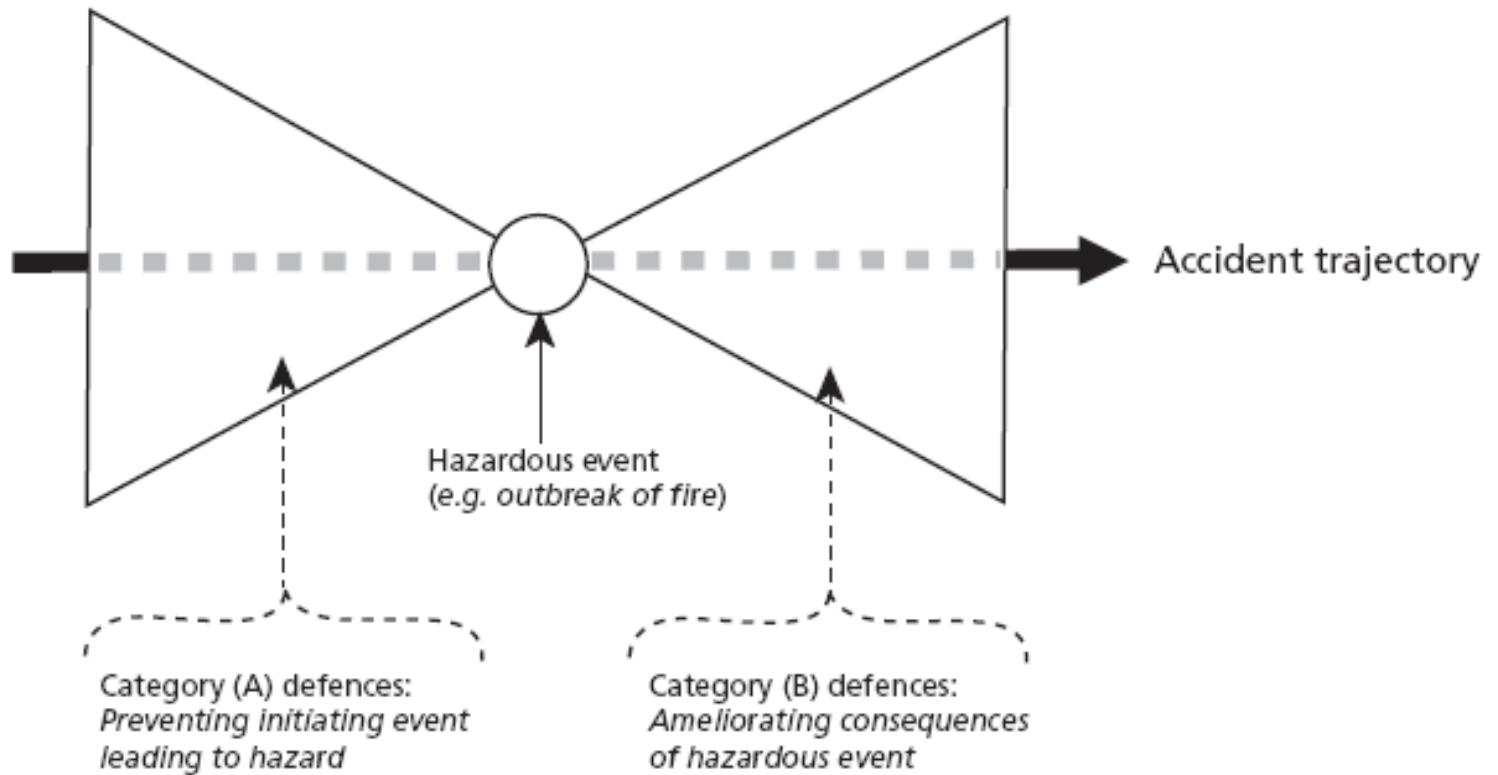


Figure 18.3: Classic 'Bow Tie' Model

Category (A) Defences/Barriers:
preventing initiating event
from leading to hazard

Category (B) Defences:
effect-reducing
defences/ameliorations

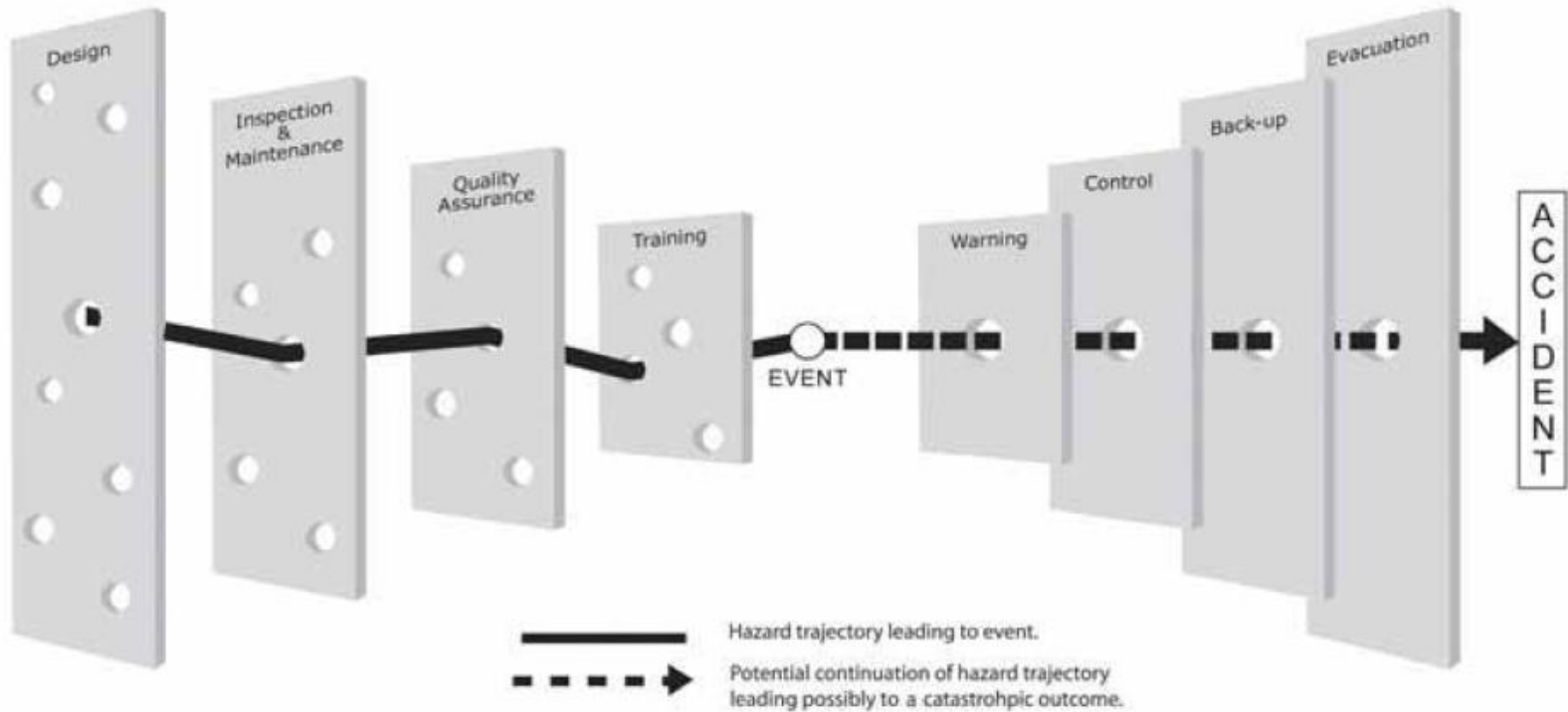


Figure 18.4: 'Composite Model'

Issue 2 of BP1201 also included at Annex B a revised Safety Risk Classification Table,⁸⁶ as follows:

		Accident Severity Categories			
		Catastrophic	Critical	Marginal	Negligible
Accident Probability Categories	Frequent	A(1)	A(3)	A(7)	B(13)
	Probable	A(2)	A(5)	B(9)	C(16)
	Occasional	A(4)	B(6)	C(11)	C(18)
	Remote	B(8)	C(10)	C(14)	D(19)
	Improbable	C(12)	C(15)	D(17)	D(20)

Risk Classification	
A	Unacceptable – Urgent management action required since such risk cannot be justified save in extraordinary circumstances.
B	Undesirable – Requires management action to introduce control measures to reduce risk and shall only be accepted when risk has been reduced to ALARP.
C	Tolerable – The residual risk is tolerable only if further risk reduction is impracticable or requires action that is grossly disproportionate in time, trouble and effort to the reduction in risk achieved.
D	Broadly Acceptable – The level of residual risk is regarded as insignificant and further effort to reduce risk not likely to be required as resources to reduce risks likely to be grossly disproportionate to the risk reduction achieved.

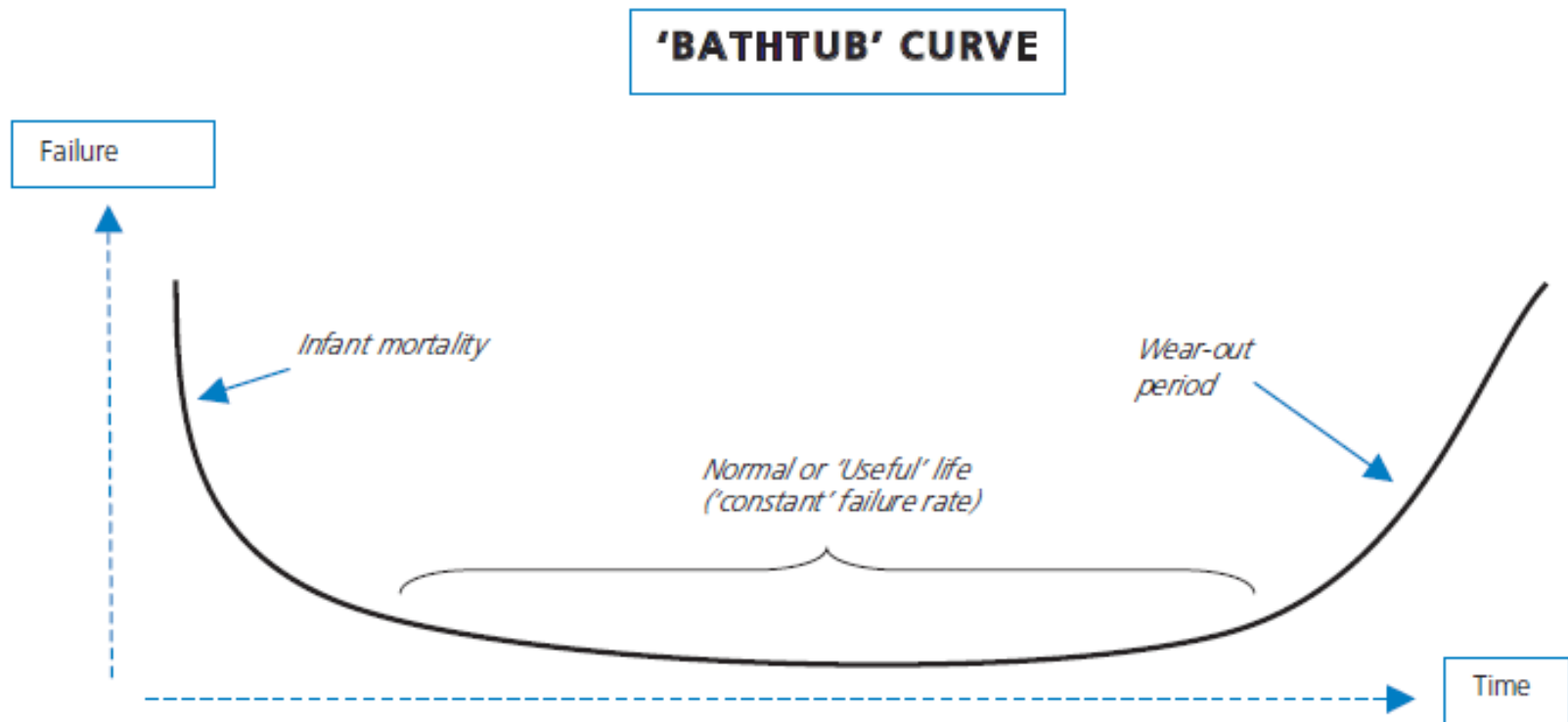


Figure 23.1 The 'bathtub' Curve

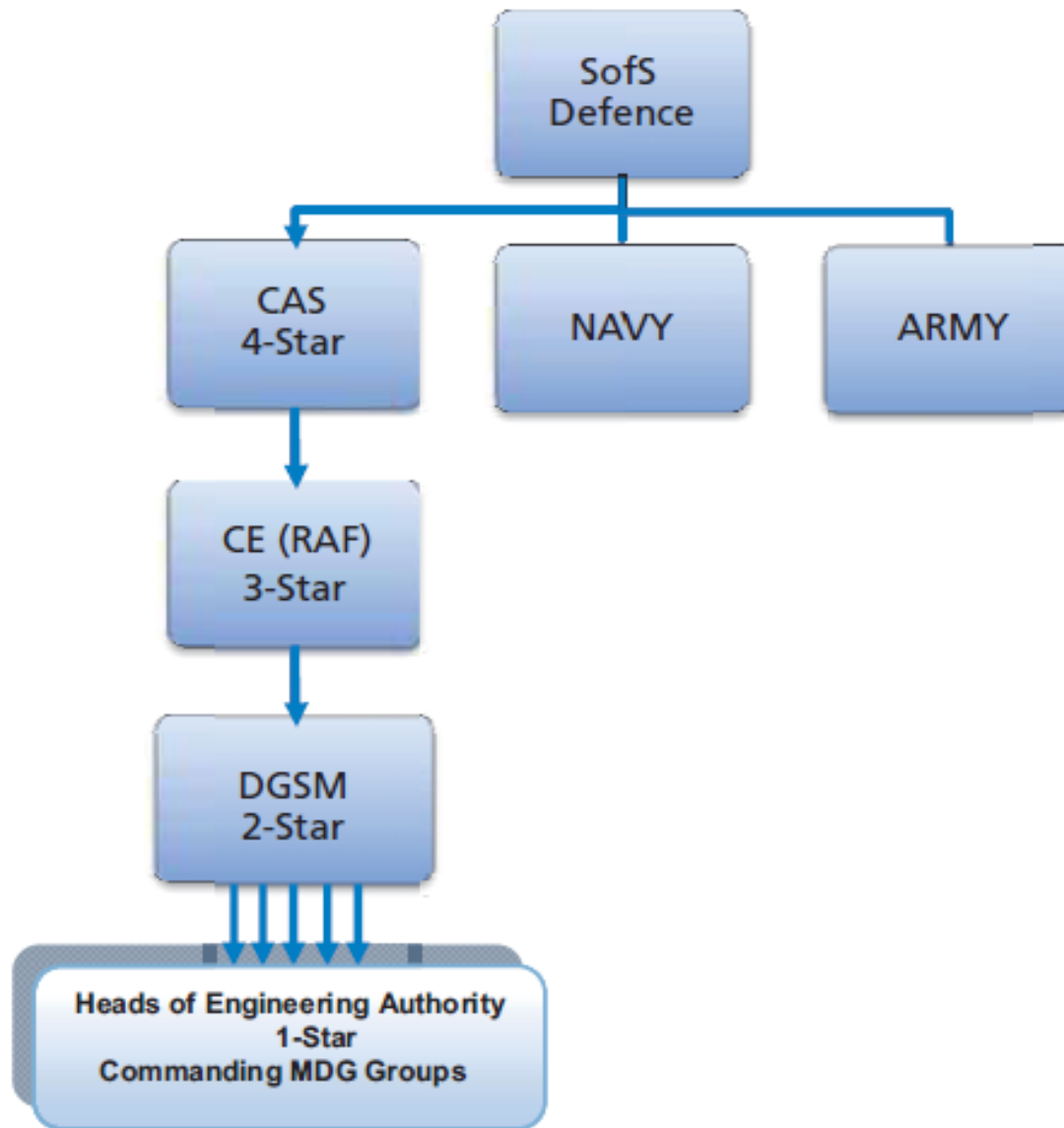
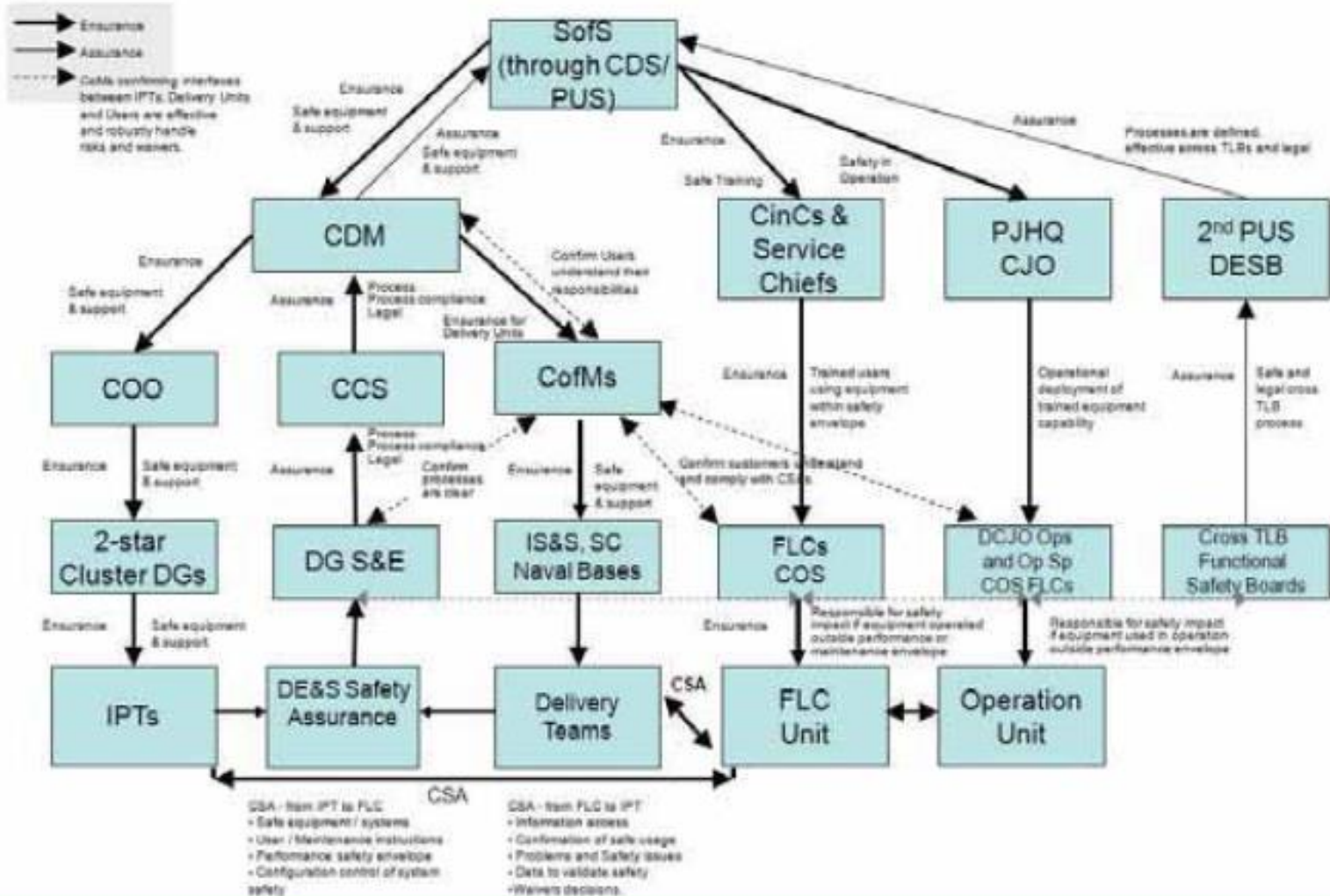


Figure 13.4: Chain of delegation for airworthiness in 1990s

Lines of Delegation



MOD Regulatory Structure

JSP 815

Defence Environment & Safety Board

2nd PUS



S=Secretariat

R=Regulator

A=Assurance Authority



MAA

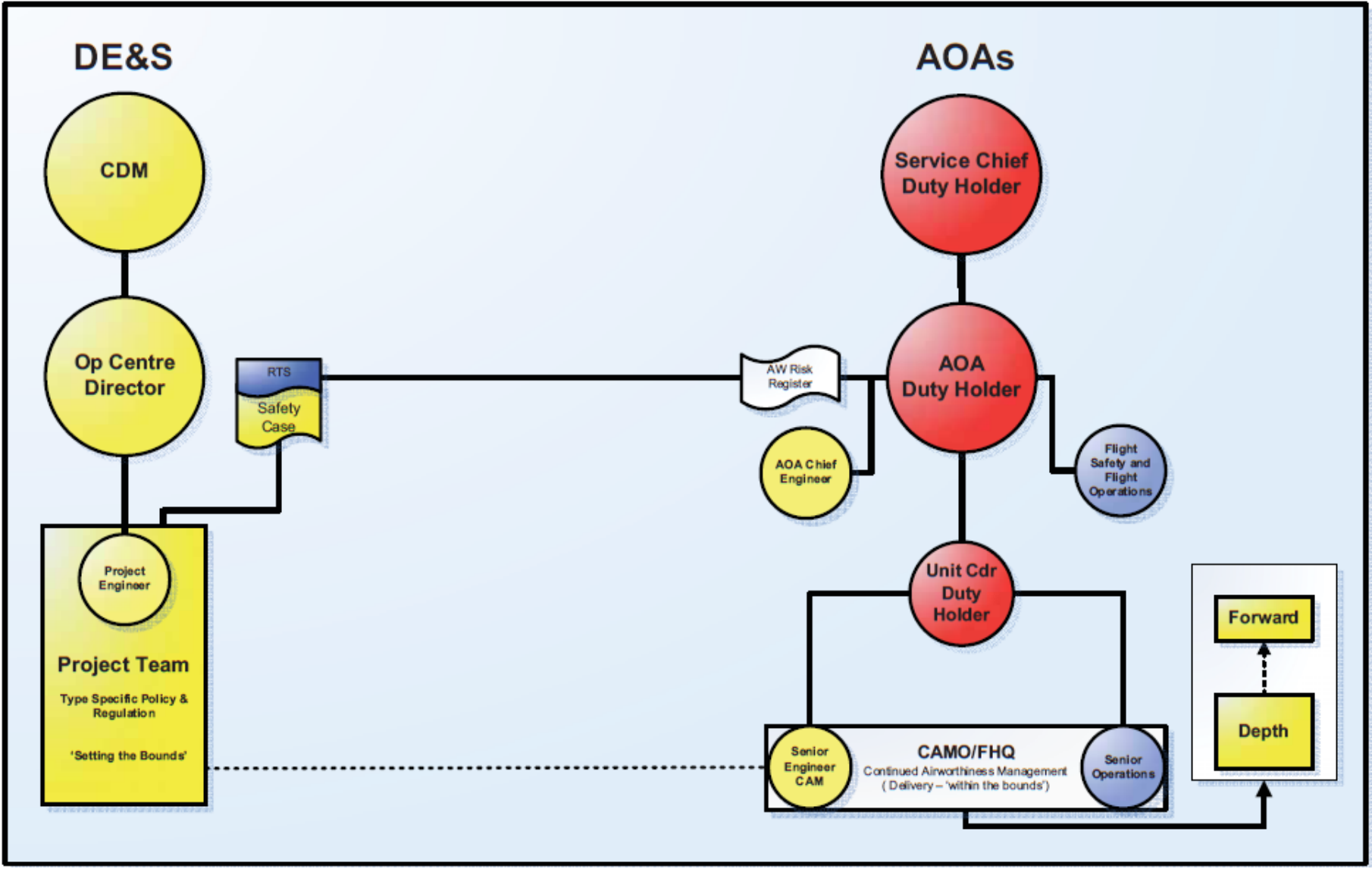
**Head of the MAA
3-Star**

(incl. HQ/Policy and Strategy)

Technical
Airworthiness
Regulator
2-Star

Service Inquires
and
MAAIB

Operating
Airworthiness
Regulator
2-Star



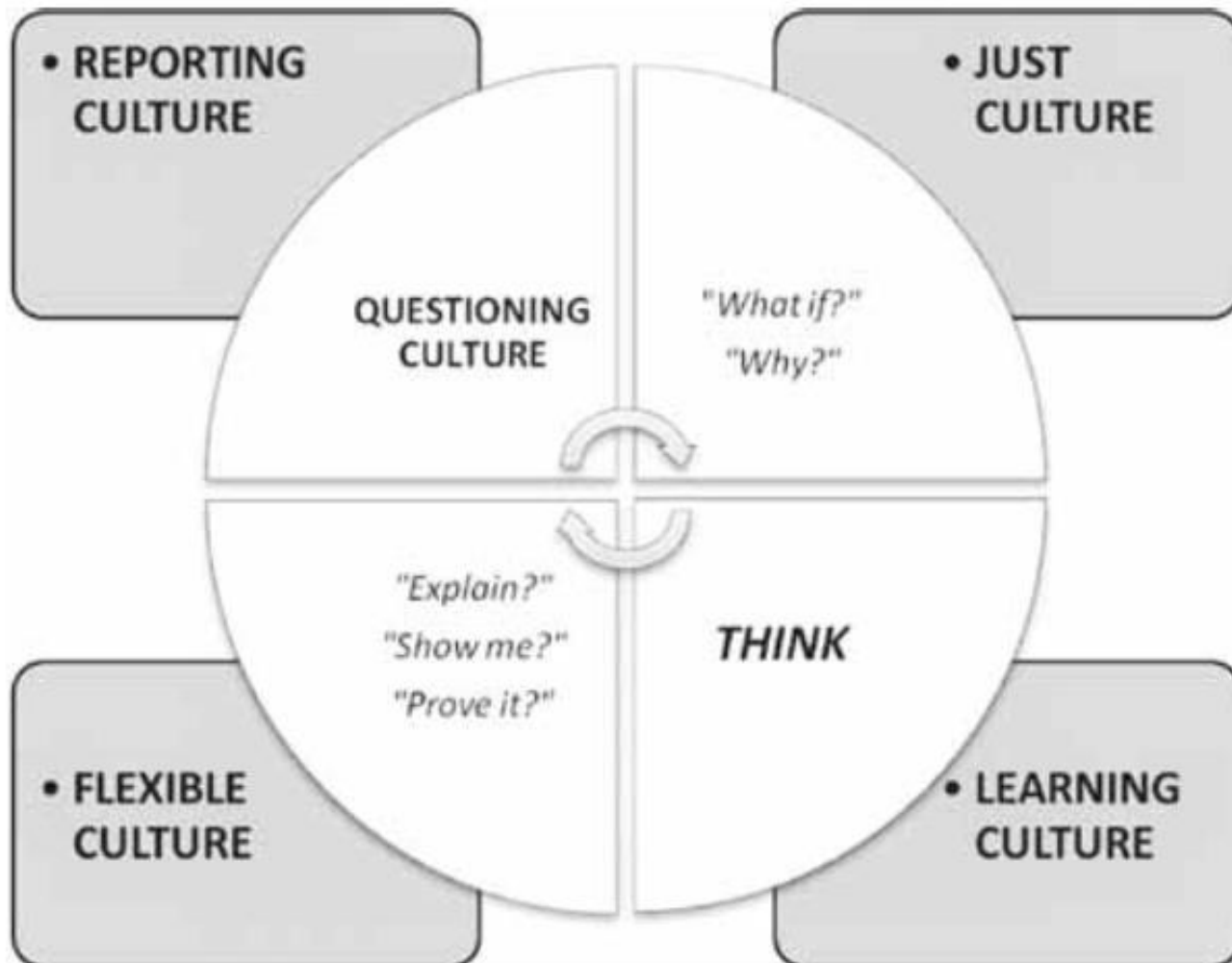


Figure 27.1: Engaged Organisation and Safety Culture

CHAPTER 29

MILITARY COVENANT AND FINAL REMARKS

- **The Military Covenant:**

“The whole panoply of measures which it is appropriate the Nation should put in place and sustain for Service personnel, including adequate training, suitable and properly maintained equipment, sufficient provisions in theatre and proper support and conditions for Service personnel and their families at home [in particular for bereaved families and injured Service personnel]”.

(Nimrod Report, para. 29.3)