

SAFETY PARADOXES

The limits of measuring 'unsafety' according
to James Reason

Source: Reason, J. (2000). Injury Control and Safety Promotion, 7(1), 3-14.

Ben Hutchinson, SafetyInsights.Org, YouTube: [@Safe_As_Pod](https://www.youtube.com/@Safe_As_Pod)

DEFINITION OF SAFETY

- Dictionary definitions of safety say ‘freedom from danger and risks’, which Reason says “comprises ‘**unsafety**’ than about the substantive properties of safety itself” (p4)
- Problematically, safety is often measured by its occasional absences (TRIFR etc.) more than its usual presence [and what that presence looks like]

FLAWED MEASURES

- Incident metrics are “flawed”. First, he argues that the relationship between the metrics and negative outcomes are tenuous at best. Also, chance plays a huge part in bad events and more so in complex and well-defended technologies
- Second, “Even the most resistant organisations can suffer a bad accident” (p5) and in contrast “even the most vulnerable systems can evade disaster, at least for a time” (p5). **He says chance doesn't take sides – it strikes the deserving and preserves the unworthy**

FOCUSING ON THE NEGATIVE

- **Another issue is the pace of diminishing returns. Organisations focus heavily on safety activity and negative outcome data declines rapidly and then bottoms out at an asymptote value. In ultra-safe and mature organisations when the plateau has been reached, “periodic variations in accident rates contain more noise than valid safety signals” and “negative outcome data are a poor indication of its ability to withstand adverse events in the future” (p5)**

LEARNING WITHOUT INCIDENTS

- **By reducing accidents to very low levels, such organisations have “largely run out of ‘navigational aids’ by which to steer towards some safer state” (p5) by relying on these negative outcome measures**
- **Getting from bad to average is quite easy for an organisation but getting to average to excellent is extremely difficult – and the latter is why understanding this paradox is crucial**

INCIDENTS = UNMANAGED RISK OR GOOD REPORTING?

- Finally, while high accident rates *may* be a decent indicator of a “**bad safety state**” [****** or good reporting], low asymptotic rates aren't necessarily signal of a good safety state.