

Tanker Operator Conference Hamburg 2019

**Getting Behind Seafarer Error
It needs the whole team!!**

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- Introduction
- Getting Behind Seafarer Error
- How did we get here?
- Who are the Team?
- Quo Vadis ?
- Case Study
- Conclusion

Getting Behind Human Error

1. Human Error

- a. Skill Based Errors
 - i. *Slips of Action*
 - ii. *Lapses of Memory*
- b. Mistakes
 - i. *Rule Based Mistakes*
 - ii. *Knowledge Based Mistakes*

2. Violations

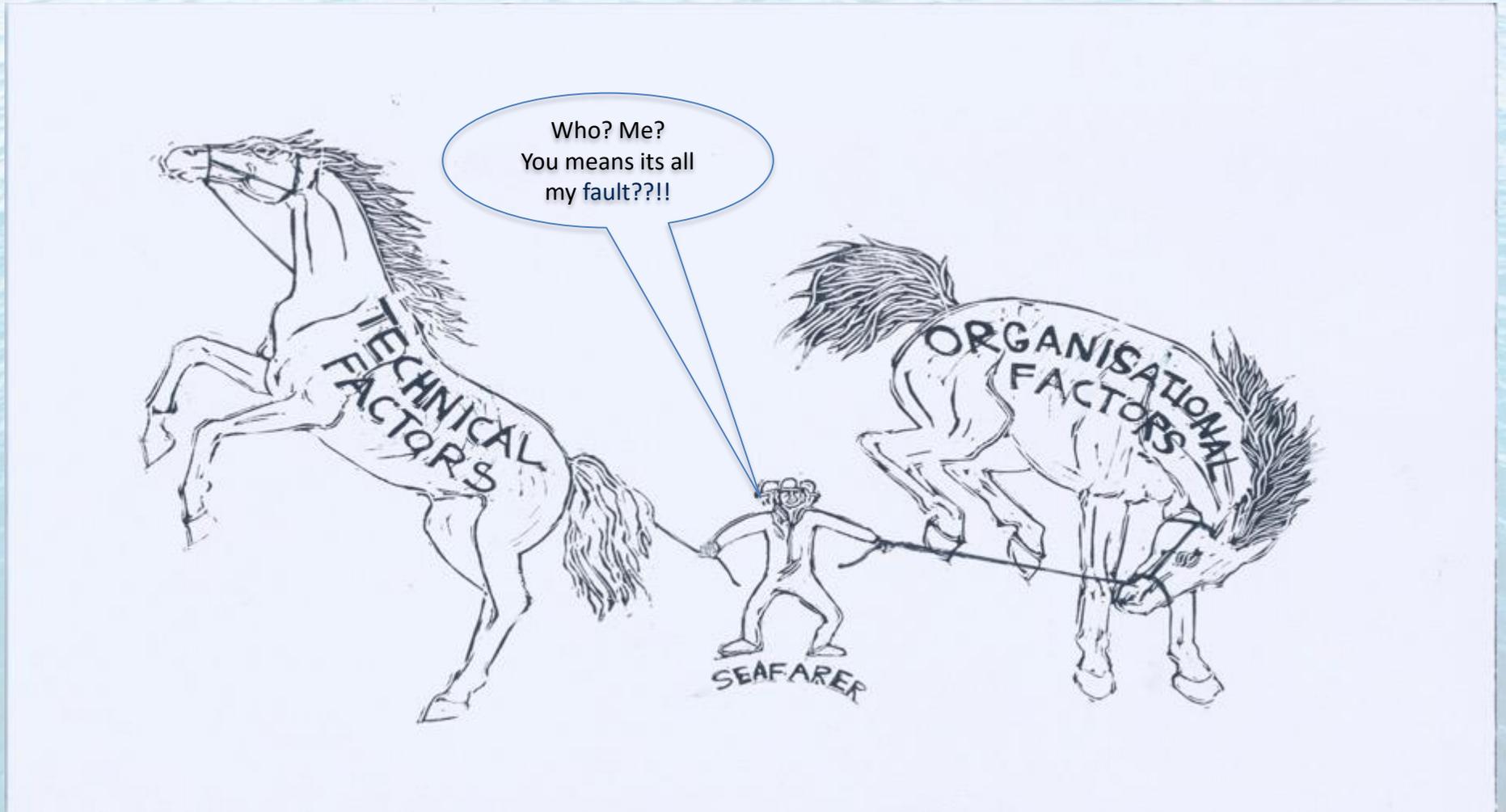
- a. Routine
- b. Situational
- c. Exceptional

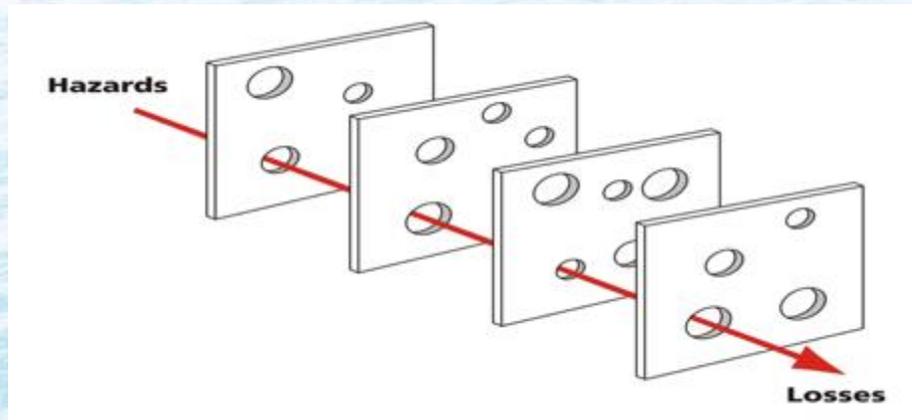
Human error is an *unintentional* action or decision.

Violations are *intentional* – *deliberately not following rules/procedures*

(Source James Reason and UK HSE)

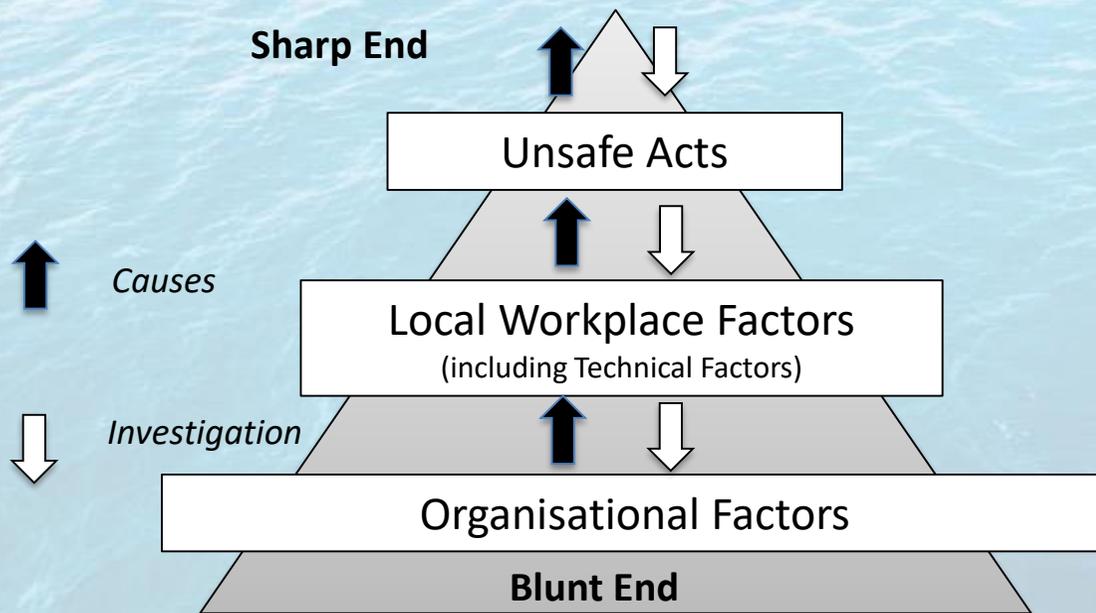
Do we now treat all seafarer errors as malevolent violations?





'Rather than being the main instigators of an accident, operators tend to be the inheritors of system defects created by poor design, incorrect installation and bad management decisions. Their part is usually that of adding the final garnish to a lethal brew whose ingredients have been long in the cooking'

Human Error by James Reason (1990)



After James Reasons Swiss Cheese Model

a) the human element is a complex multi-dimensional issue that affects maritime safety and marine environmental protection. It involves the entire spectrum of human activities performed by

shore based management, regulatory bodies, recognized organizations, shipyards, legislators,

.....and other relevant parties, all of whom need to cooperate to address human element issues effectively

IMO Resolution A 947 (23) Human Element Vision Principles and Goals for the Organisation

other relevant parties.... **equipment designers, system designers, programmers, port operators, terminal operators, charterers, vetting organisations, industry bodies etc etc.....ME.....US**

Seafarer as Hazard

- *Ships are correctly designed, reliable and with minimal flaws*
- *Management systems reflect the operating environment perfectly*
- *The only problem is people not following the procedures or making other egregious errors*
- *Focusing on those errors will prevent incidents*
- *More monitoring, more punishment*
- *Work as imagined .. Safety 1*

(references Safety I and Safety II Erik Hollnagel)

Seafarer as Hero

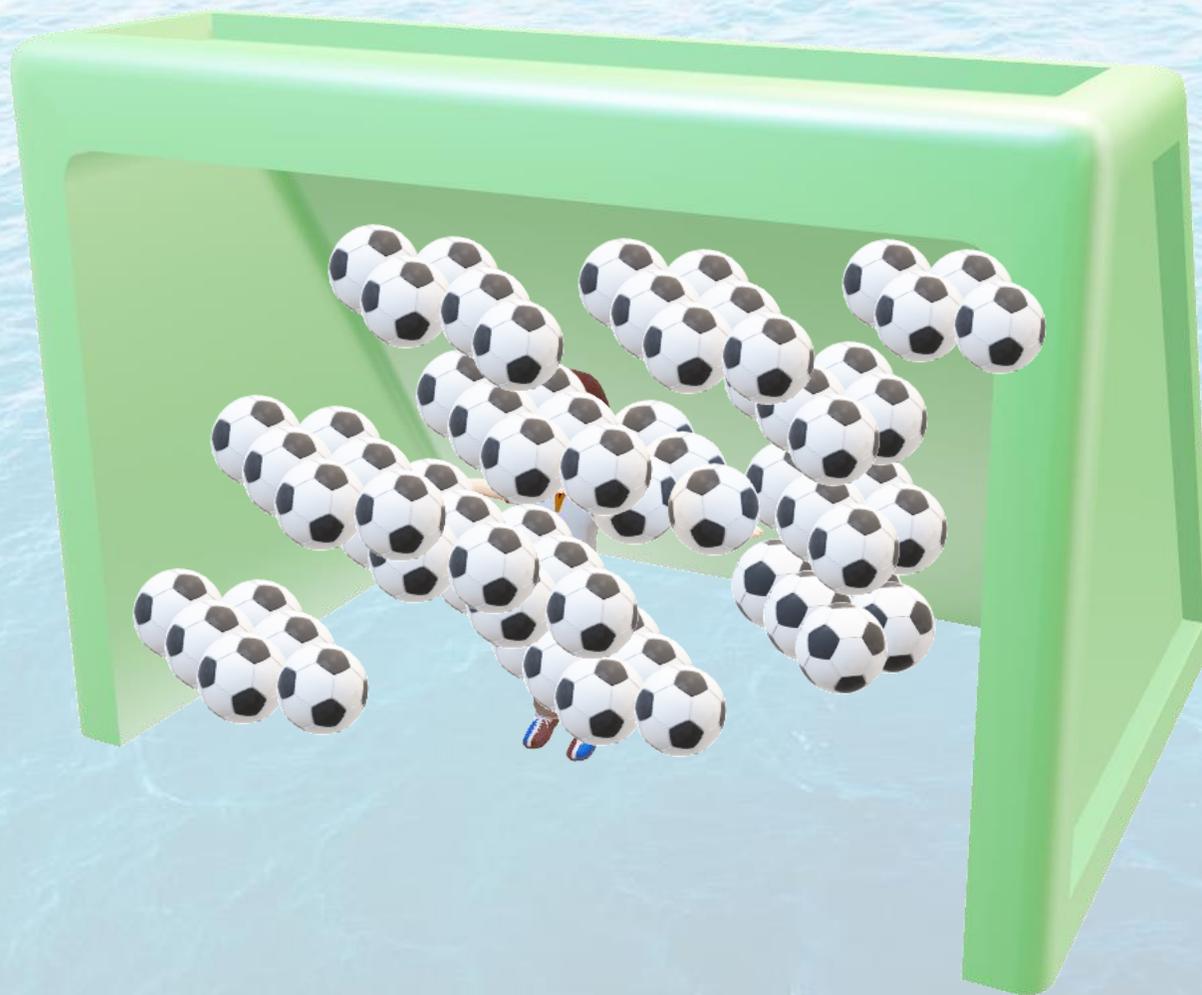
- *Ships contain errors and compromises in specification, design, construction, system integration, build, testing and classification.*
- *Management systems contain errors and compromises in procedures, resource allocation, maintenance planning.*
- *The only way ships operate is because of those onboard who 'join the dots'*
- *Focus on what goes right and do more of it*
- *Work as actually done ..Safety 2*

'After studying human unsafe acts within hazardous enterprises for more than three decades, I have to confess that I find the heroic recoveries of much greater interest and in the long run, I believe potentially more to the pursuit of improved safety in dangerous operations'

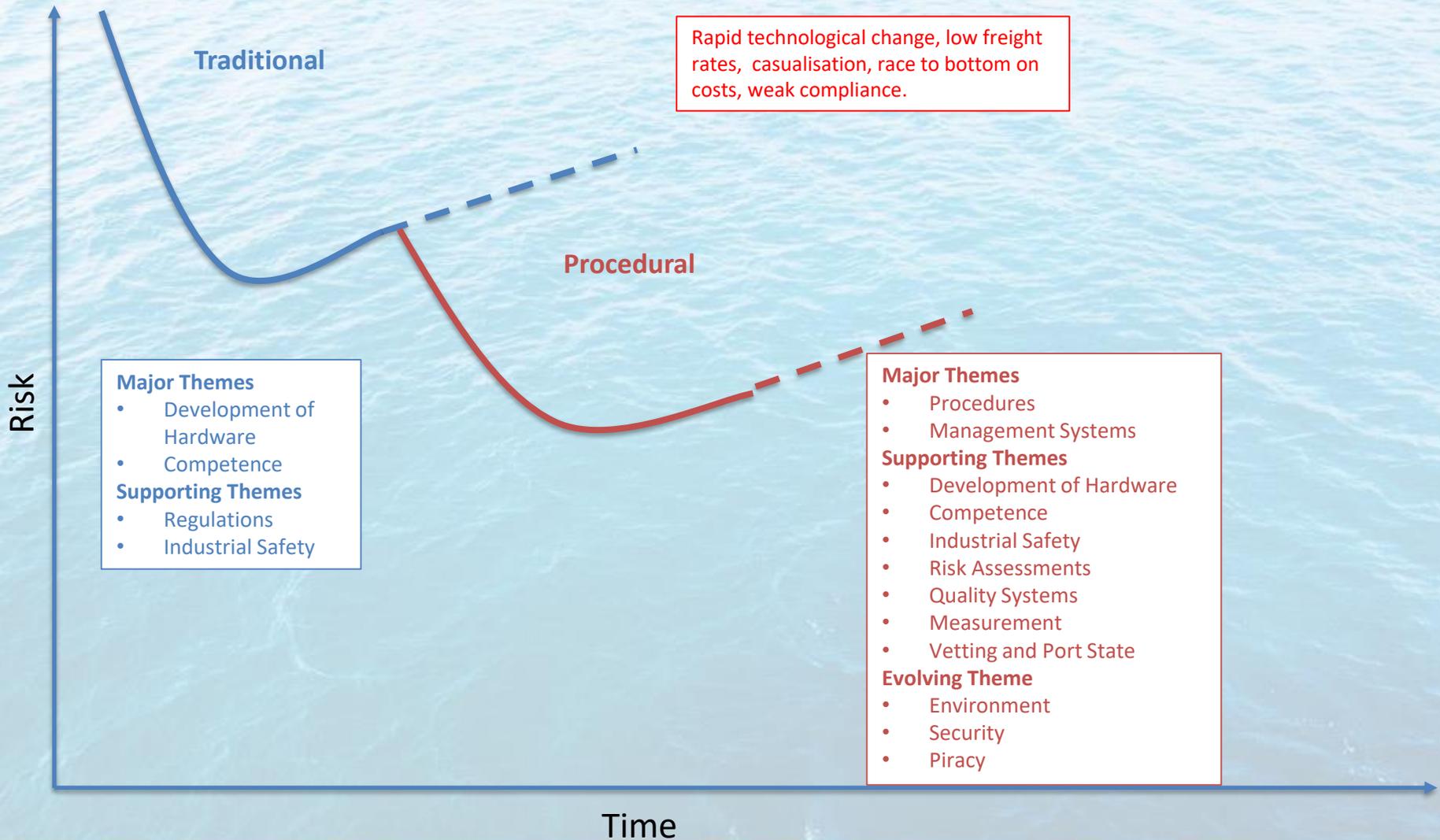
The Human Contribution, Unsafe acts, accidents and heroic recoveries James Reason 2008.

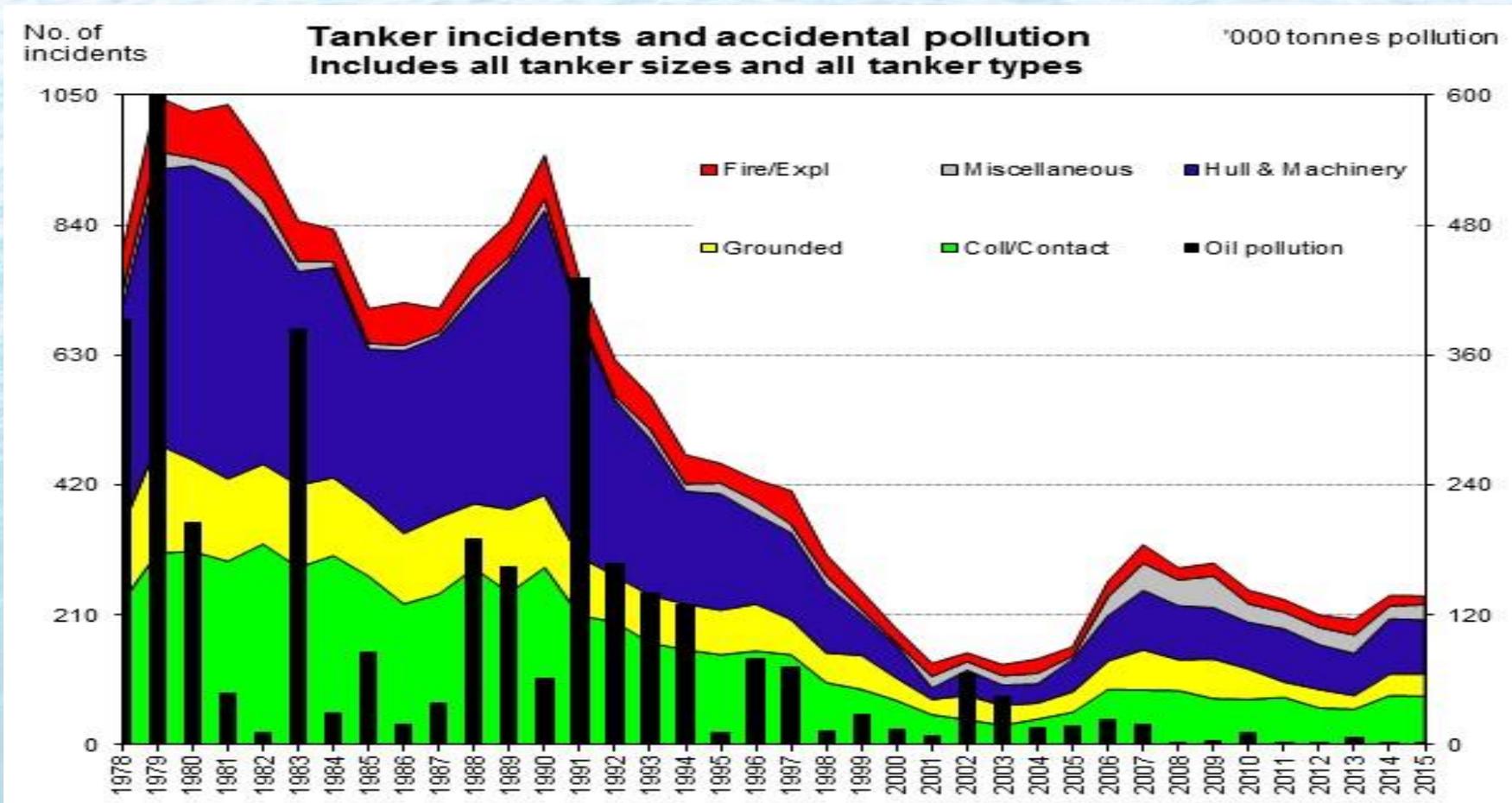
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The seafarer as goalkeeper



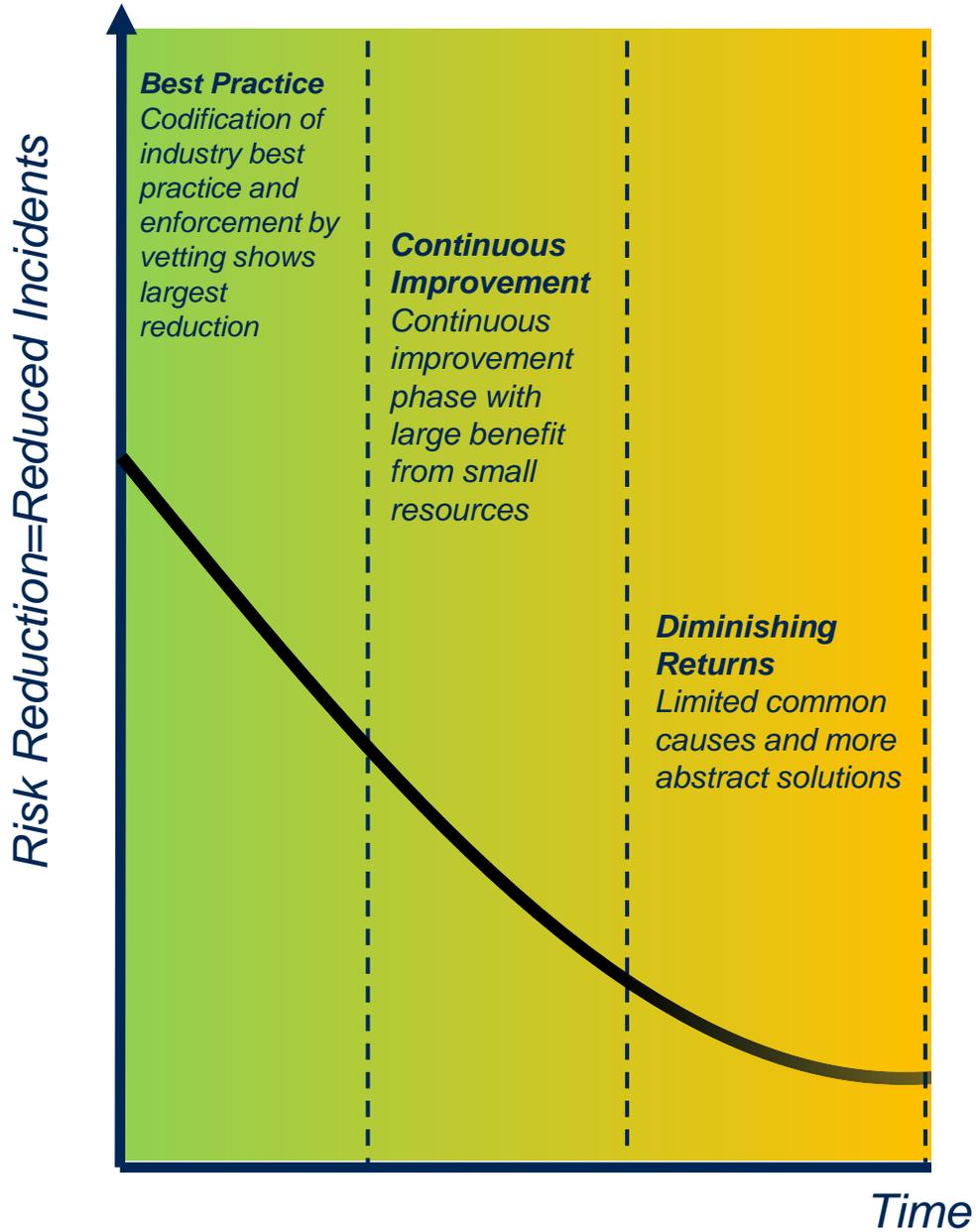
How did we get here?



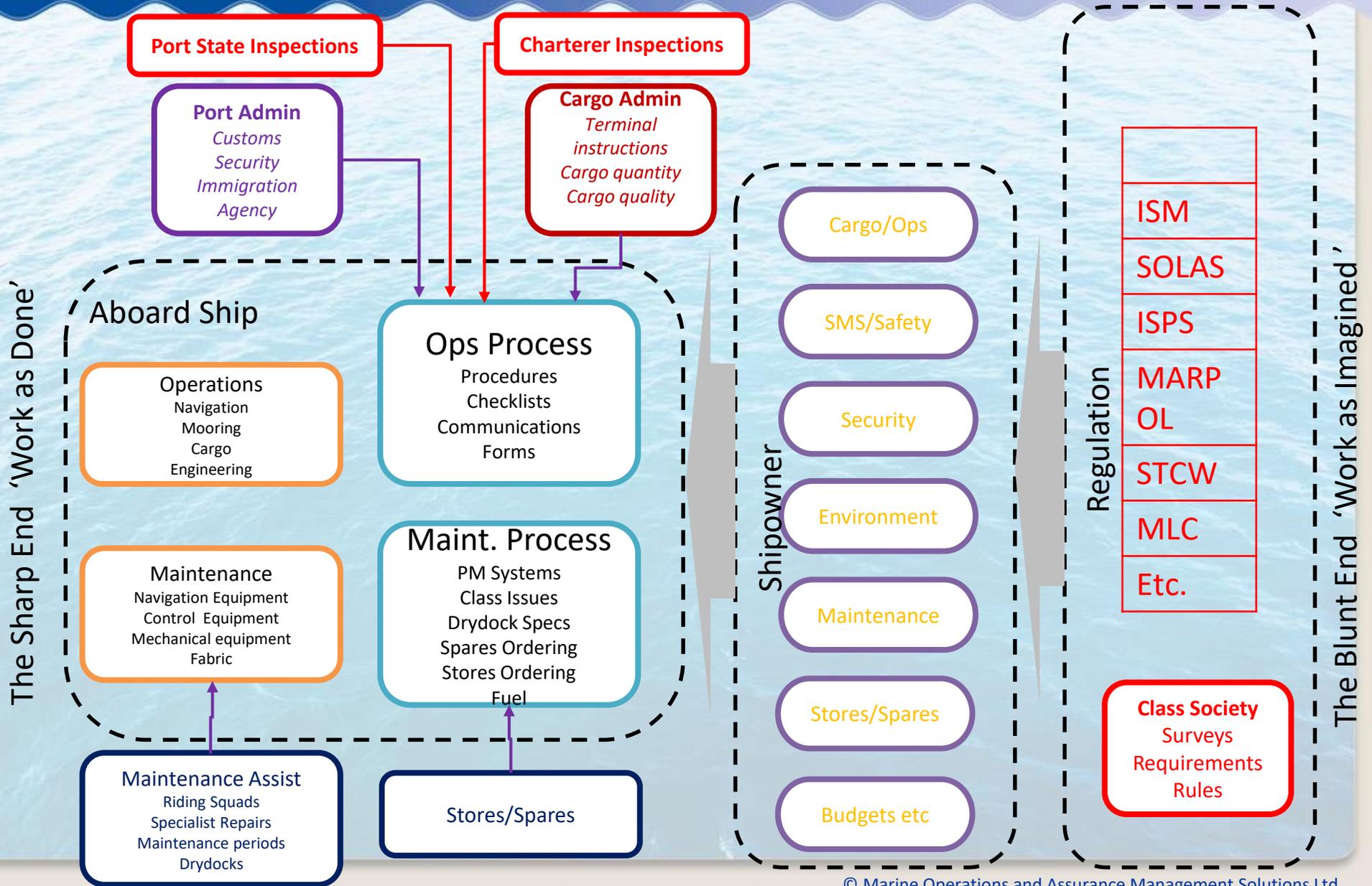


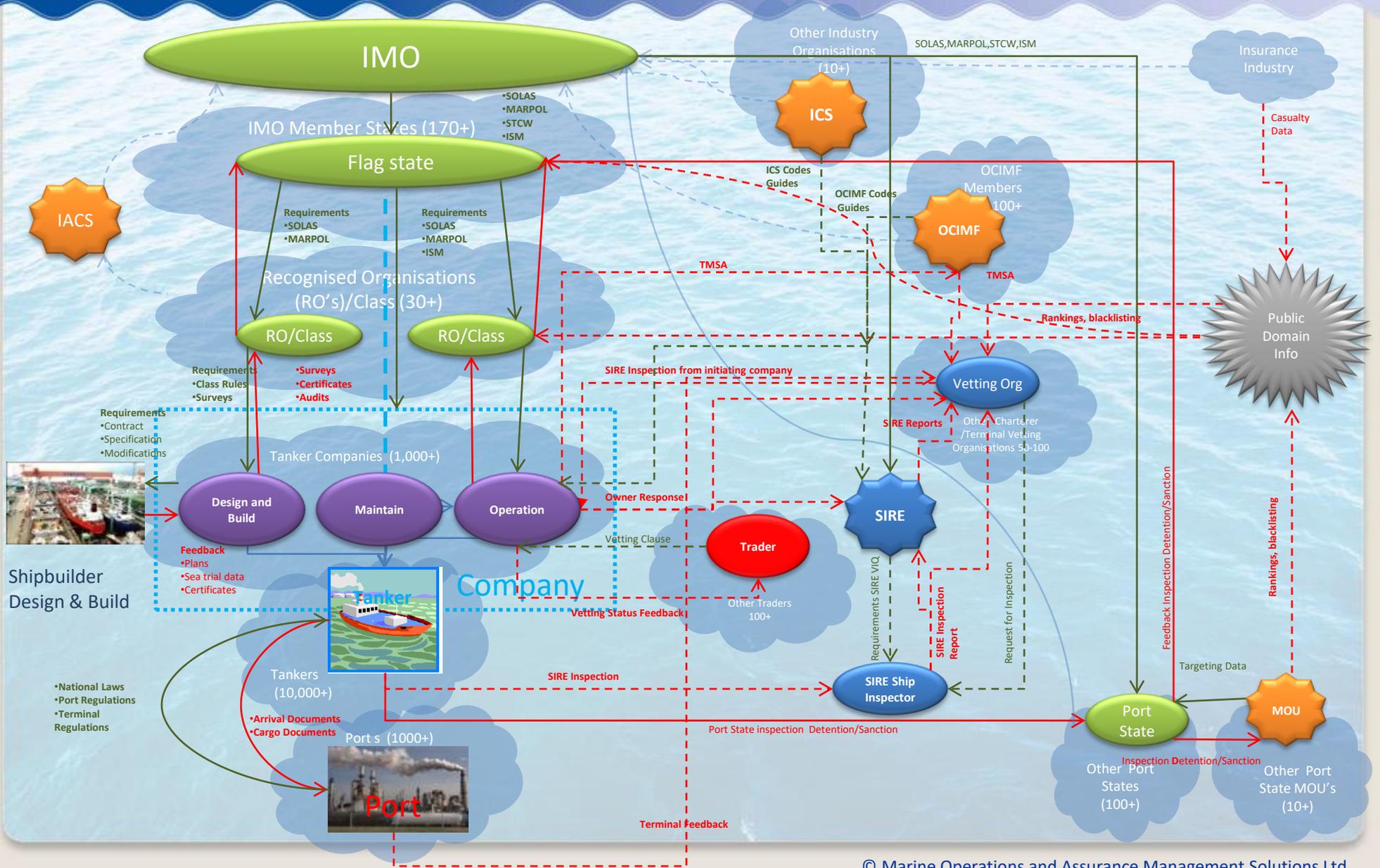
Intertanko Statistics

Law of Diminishing Returns



Who are the Team?





moams The Players-Ship Operations

Conflicting Goals



Your priority is safety, emissions, greenhouse gas piracy, security, making money, doing things quicker, ballast water, doing the paperwork

Duplicate /Conflicting Requirements



You need to follow the owners, charterers, flag states, port states, terminals rules and the qa system, chartering , accounts, purchasing department, procedures



Communications



Budgets
Planned Maintenance
Spare Gear and Stores
Risk Assessments
Incident Reports
Near Misses
Port and Cargo Info

Systems



ISO9001
ISO14001
ISM
ISPS
SIRE/CDI
TMSA

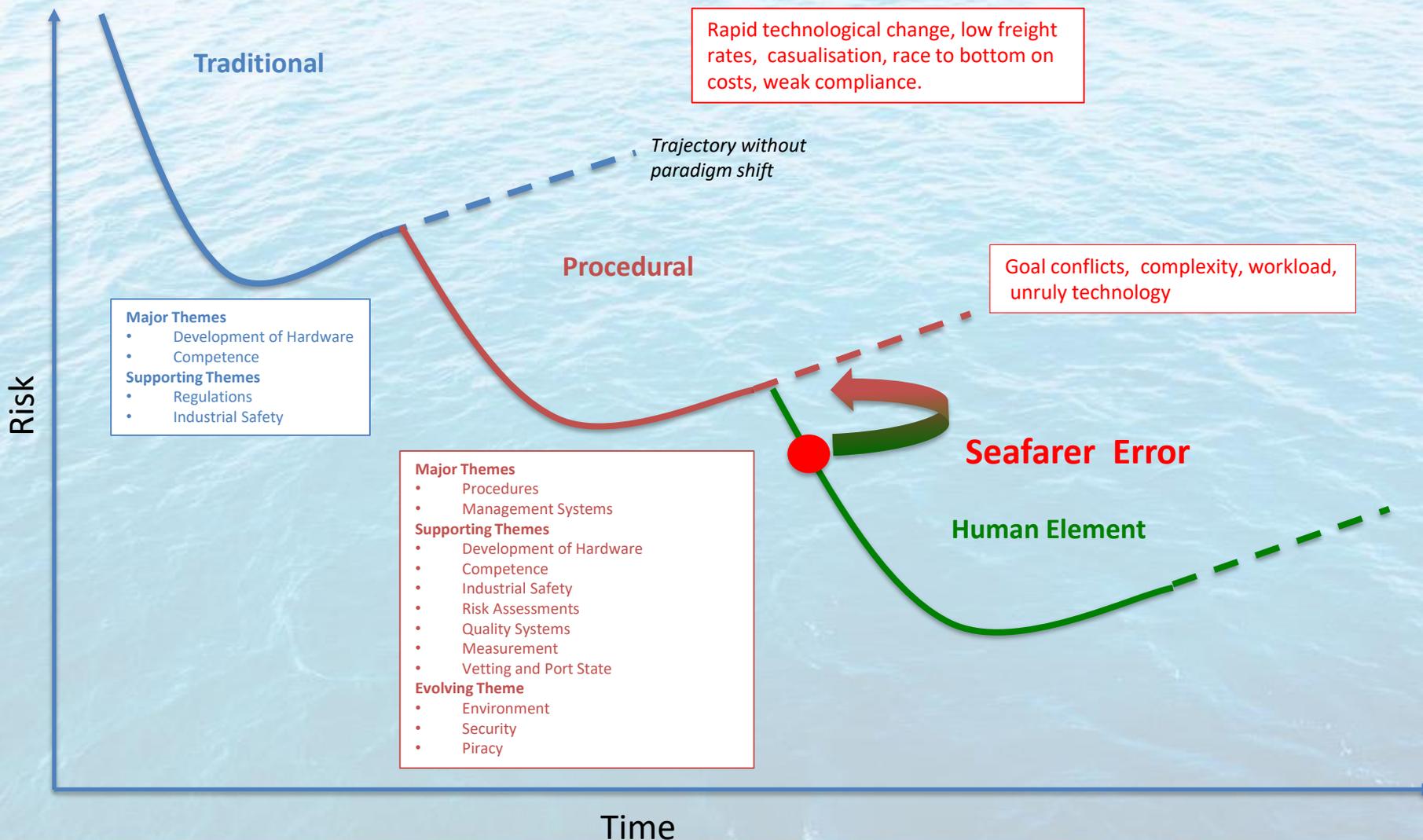
moams The Players-Designers, Builders, Integrators

- Automation & Navigation
 - ECDIS
 - Arleigh Burke collisions?
 - Air France Airbus/B737
 - Adaptive Cruise and Driverless Cars.
- Irony of Automation
 - Automation may mask the development of a serious system failure, resulting in limited time for the operator to gain 'situational awareness' and react
 - Lack of practice running systems on manual
- System design
 - Reliability of control systems
 - Poor integration
 - Lack of standardisation
- Limited information and equipment specific training



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Quo Vadis?



Case Study – Enclosed Space Deaths

- Enclosed Space Deaths second greatest killer in shipping-including shore workers
- Main witness is never available to give their point of view
- Investigations always focuses on the victim disobeying procedures without considering why
- Intertanko Survey identified time pressure as an issue
- Is there another way?

Systemic

Designed into the system eg car carriers, container ships. 'Optimised' Loading Systems.

Explicit Time Pressure

Where a clear instruction is given by someone with apparent legitimate authority that imposes time pressure

Implicit Time Pressure

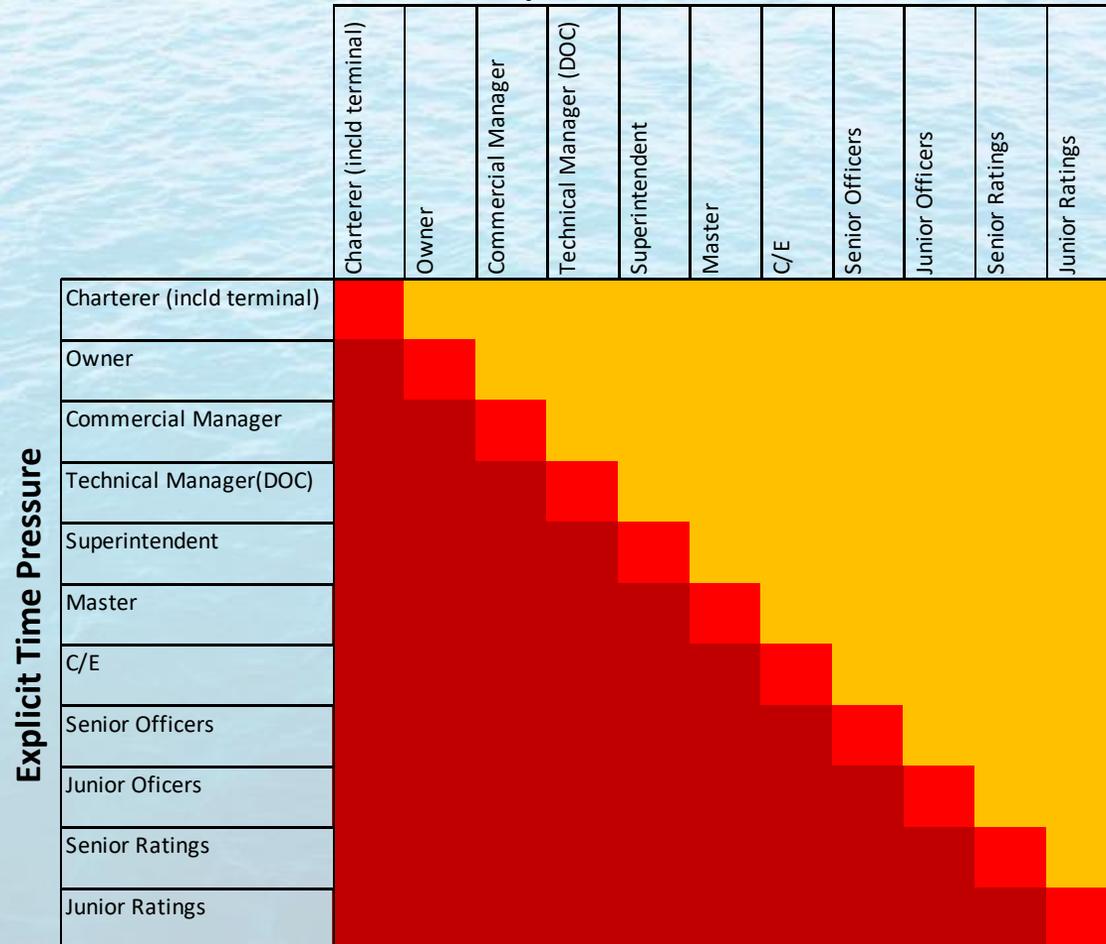
Where some implied incentive or punishment created by management or management systems generates time pressure.

Perceived Time Pressure

Where an individual is motivated to complete task quickly due to a perceived need.

Note that when a person with legitimate authority is influenced by implicit time pressure which results in them issuing instructions based on that pressure those below in the hierarchy are reacting to explicit time pressure

Implicit/Perceived Time Pressure



- Owner wants to :-
- Maximise earnings

- Charterer wants:-
- Utmost despatch
 - Rapid load and discharge
 - Minimum berth time

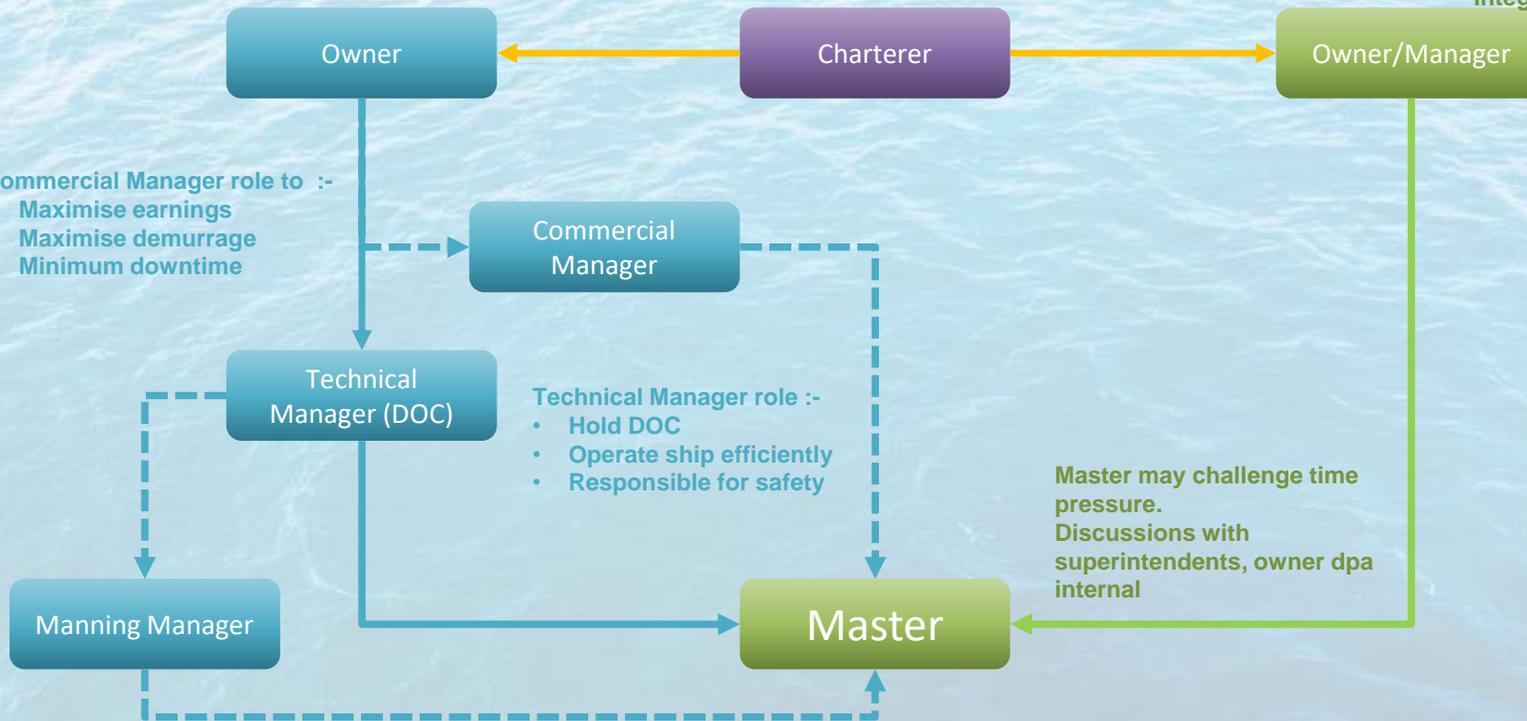
- Owner/Manager wants :-
- Maximised earnings
 - Maximised demurrage
 - Minimum downtime
 - Safe Operation
 - Hold DOC
 - Integrated strategy

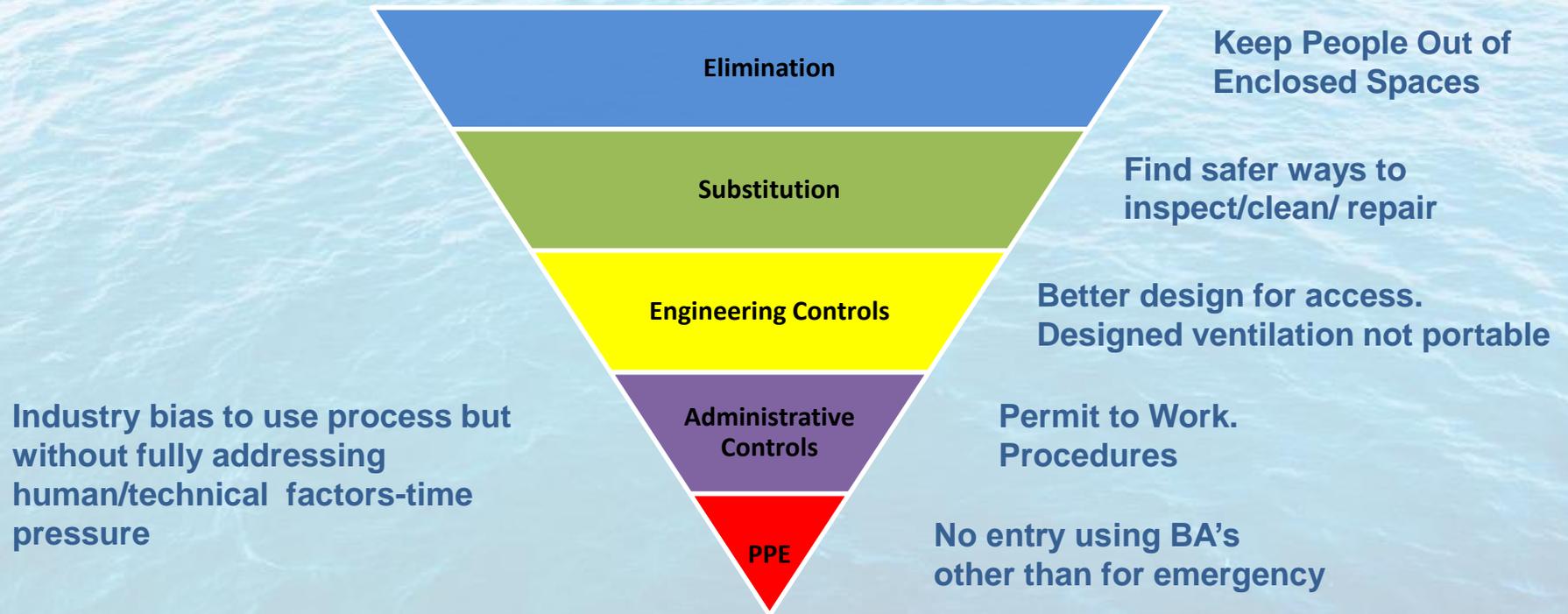
- Commercial Manager role to :-
- Maximise earnings
 - Maximise demurrage
 - Minimum downtime

- Technical Manager role :-
- Hold DOC
 - Operate ship efficiently
 - Responsible for safety

Master may challenge time pressure. Discussions with superintendents, owner dpa internal

Master may challenge time pressure. But with whom and who will support?





Source..Author based on NIOSH

- Great improvements in safety and operations over the last thirty years
- Improvements in procedures notable
- Law of diminishing returns
- Investigation of human error has stopped at blame and seafarers
- Seafarers are hero's who need help not hazards that need controlling and punishing....
- What about the rest of us and our errors which shape the 'pitch'
- If we could make a difference to enclosed space deaths where would be ?

Best goalkeeper cannot defend the goal against all attacks—it needs the whole team