

Tanker Operator Conference Athens 2018

**Putting People at the Centre of a More
Profitable Business**

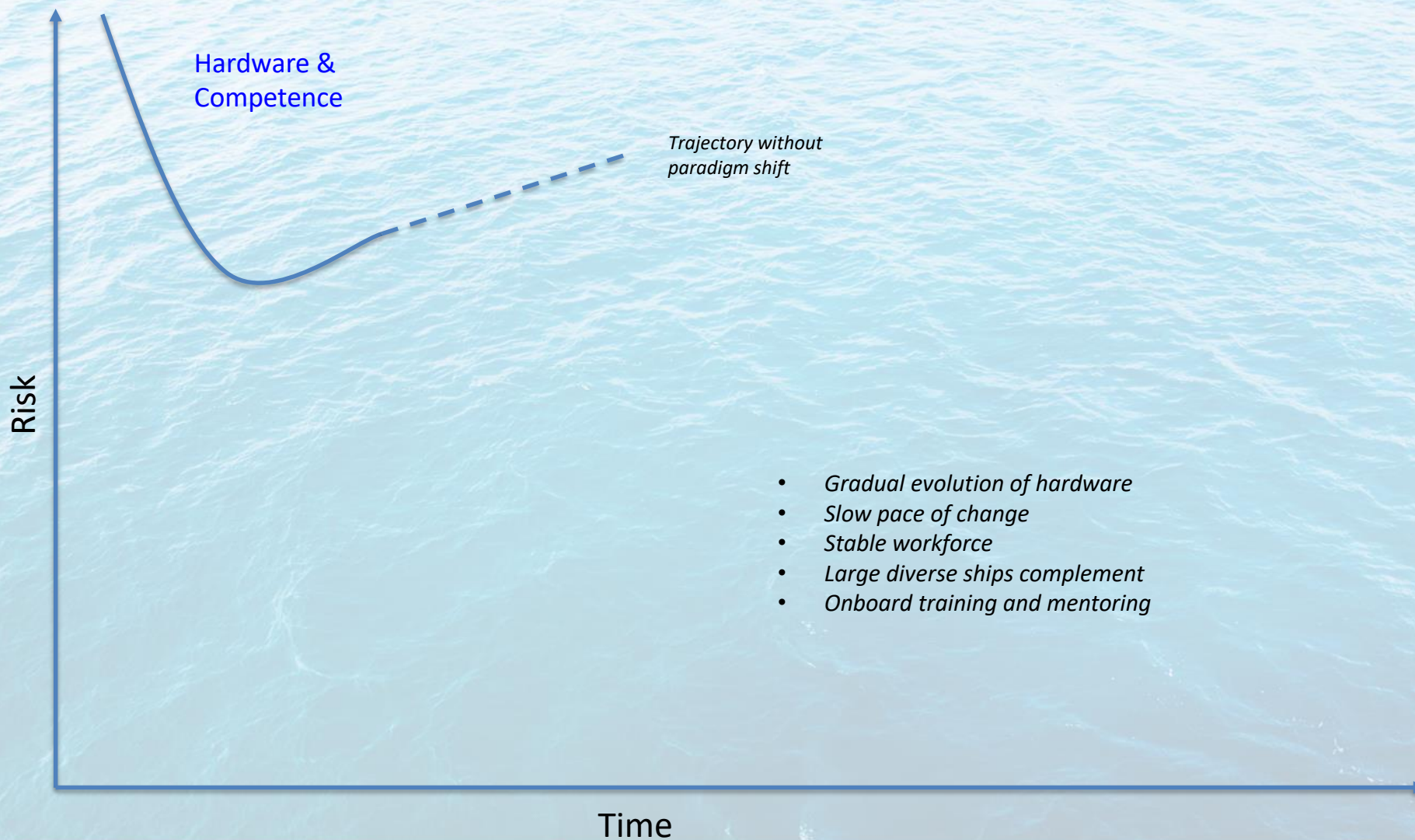
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- Introduction
- Past present and future
 - The era of Hardware and Competence
 - The era of Process and Human Error
 - The era of the Human Element
 - The era of Complexity, Resilience and Human Contribution.
- Good Business is Good People
- Conclusion

- ‘Our people are our greatest asset’Do we mean it?
- If people are our biggest asset:-
 - Why do we spend so much time looking for human error?
 - Why do we create so much process and documentation to avoid and record human error?
- You could be forgiven for believing people are an error prone component that should be treated as robots until they can be replaced!! Amazon mentality....
- Change the focus to all that people do right and you will be doing better business
- How did we get here and where are we going?

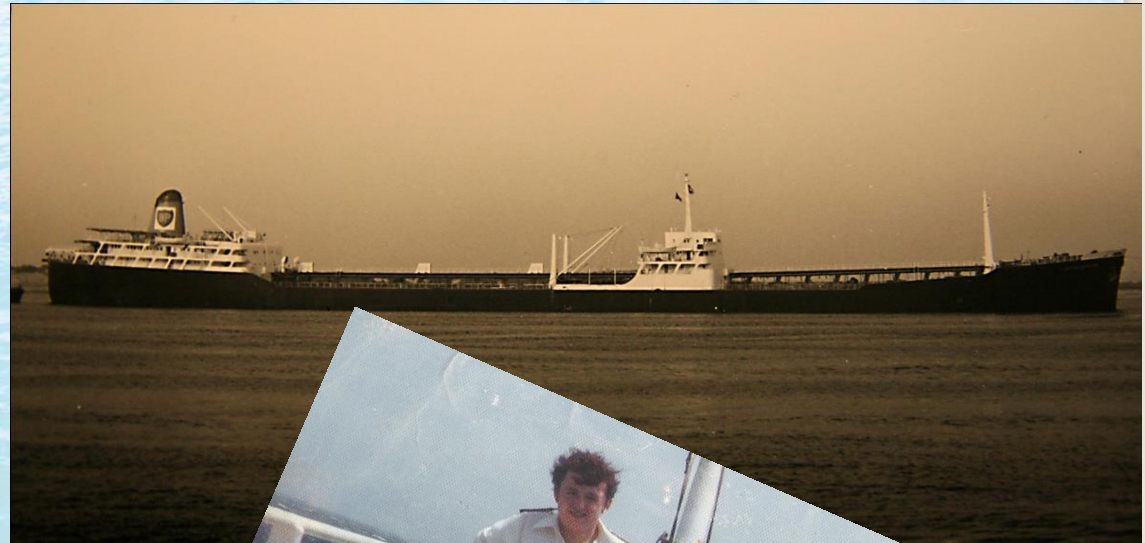


moams The Era of Hardware & Competence



Hardware .. My First Ship

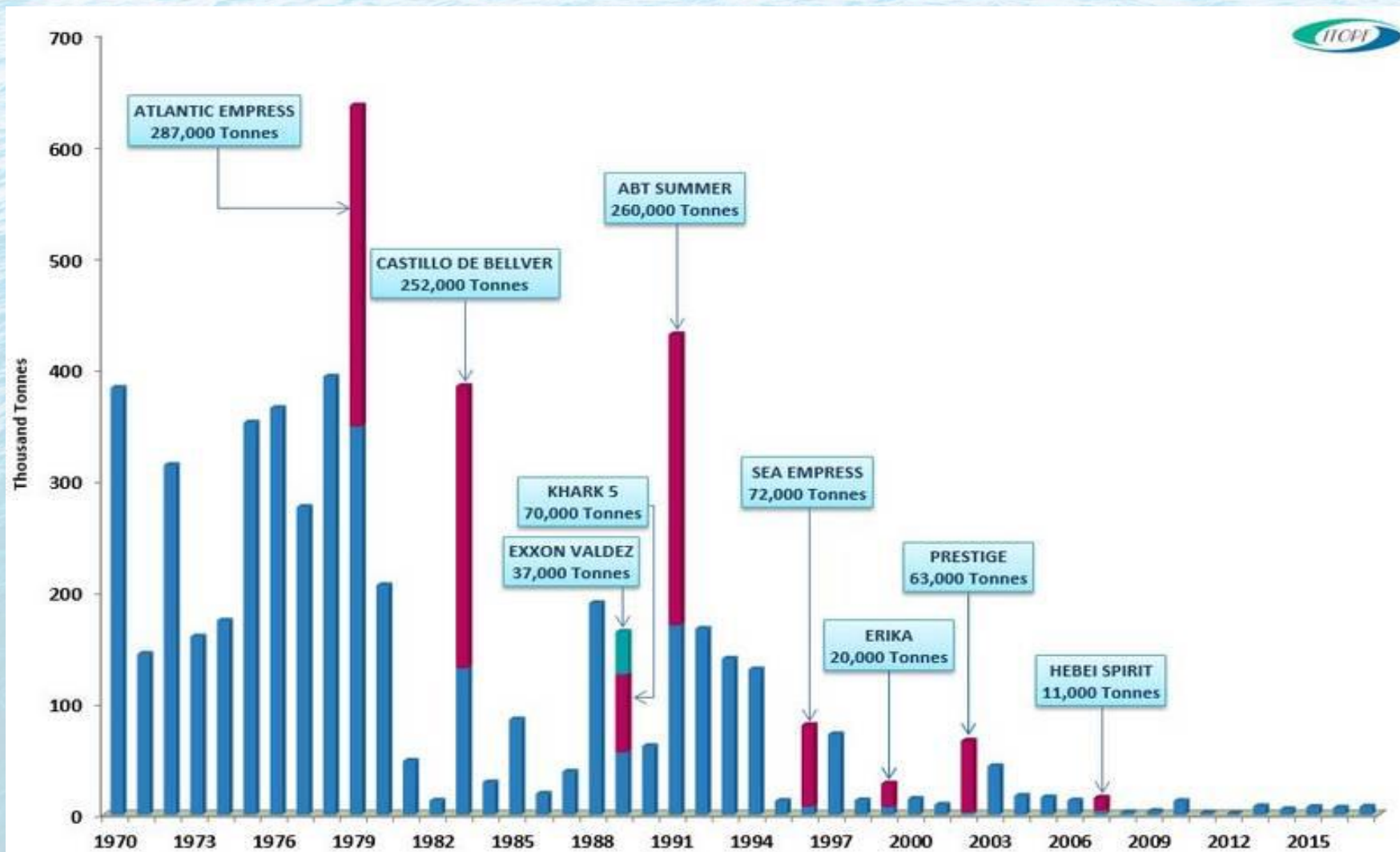
- 1962 UK Built. Class of 8 ships . Evolutionary not revolutionary.
- 54,000 DWT Crude Carrier, Single Hull/CBT
- Steam Turbine
- 54 Officers and Crew
- ER Watch keeping /Minimal instrumentation
- NO ISM/ISO 9001/ISO 14001 Just the rules.

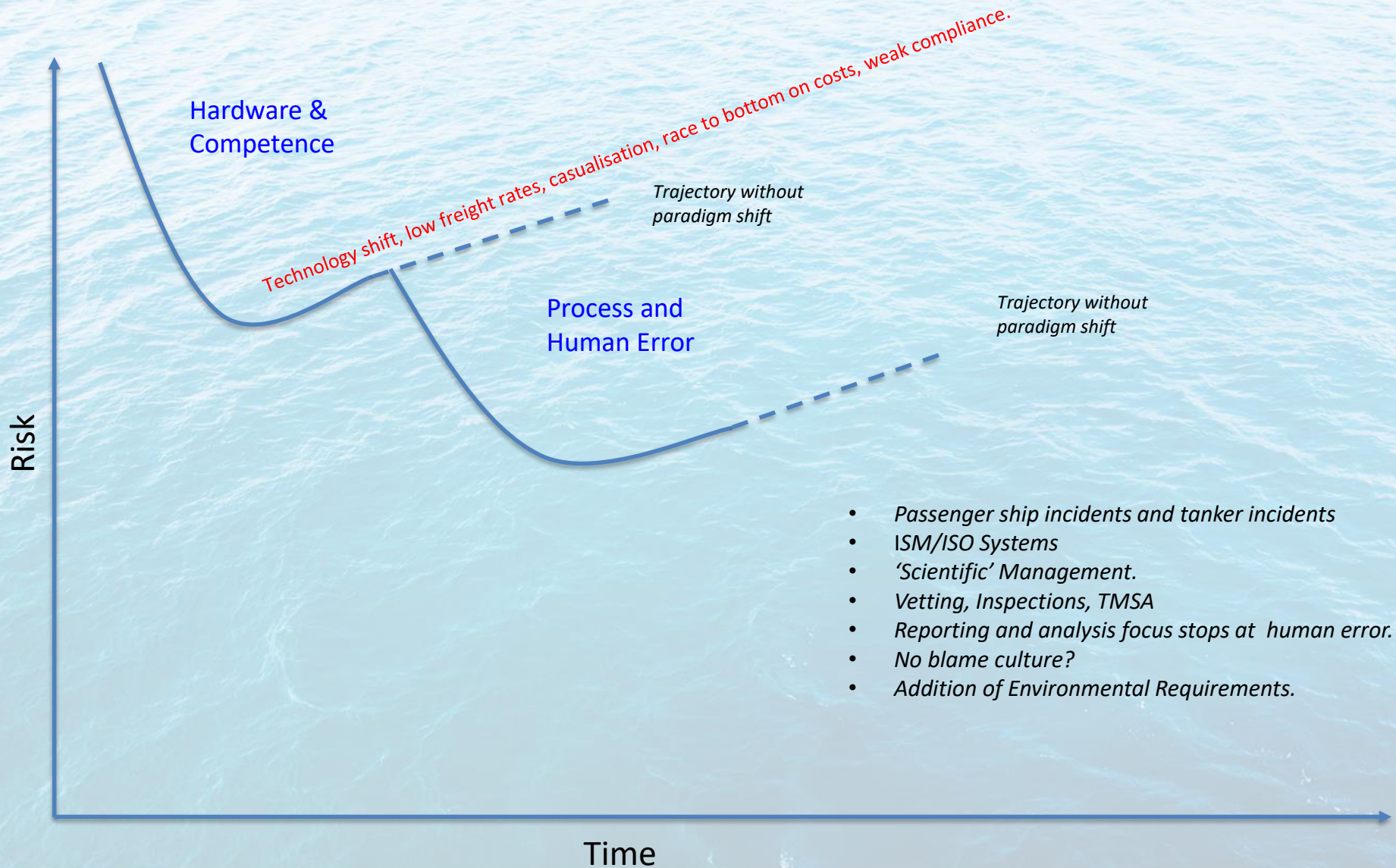


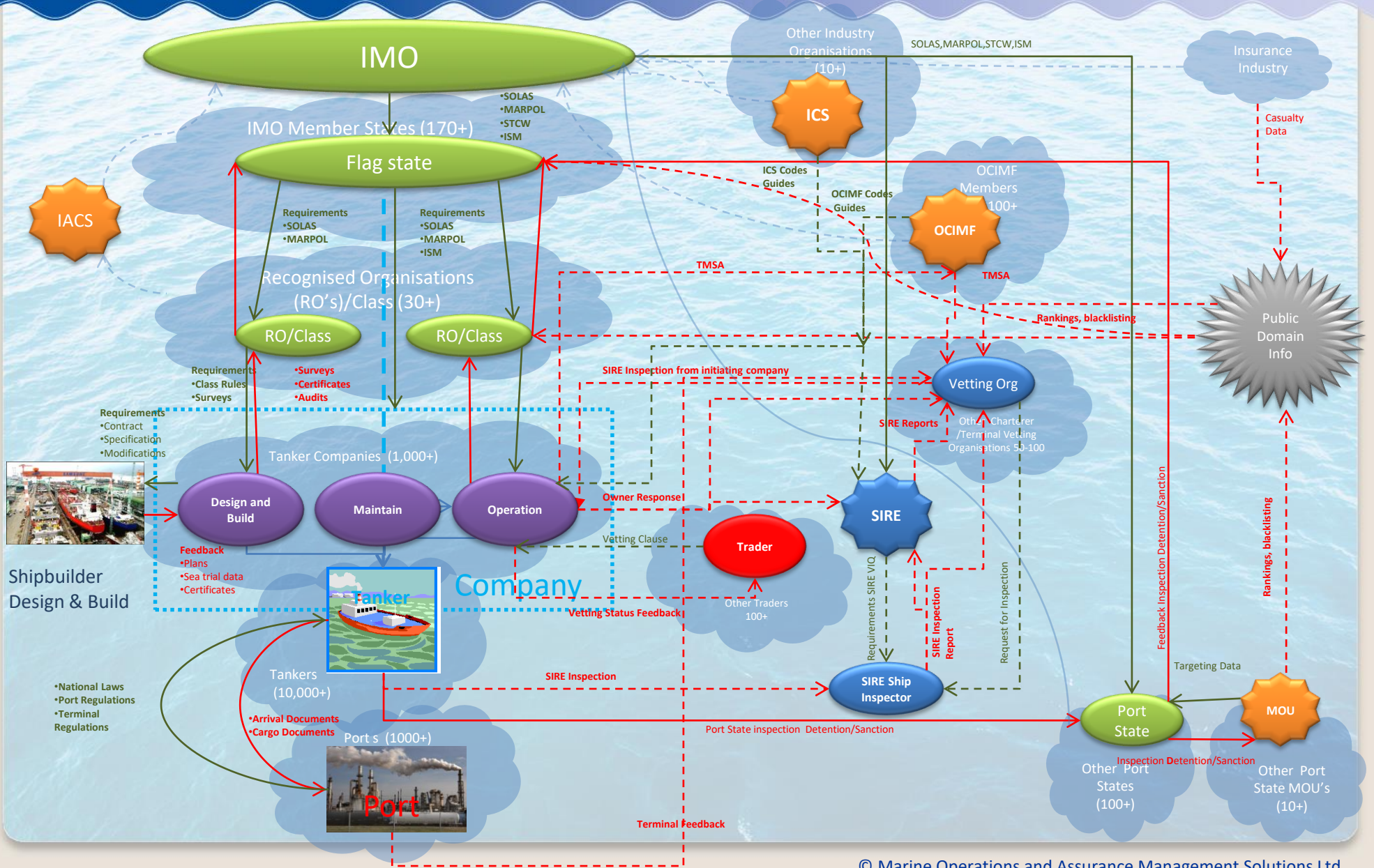
Competence?

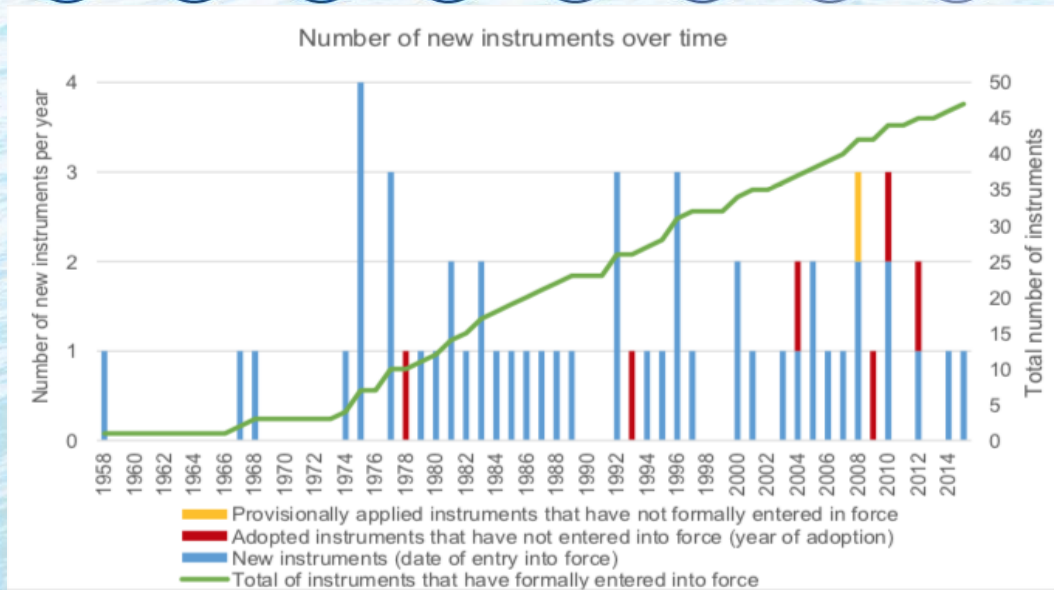
- 4 Year Cadetship
- Tasks and training . Shadowing Junior Engineer.
- Promotion to Junior Engineer with Senior Engineer mentoring.
- Diversity of engineers from shore and cadetship.
- Learned by stories and practice.
- Lead to Certificates of Competency System with education reflecting practice as technical developments slow.



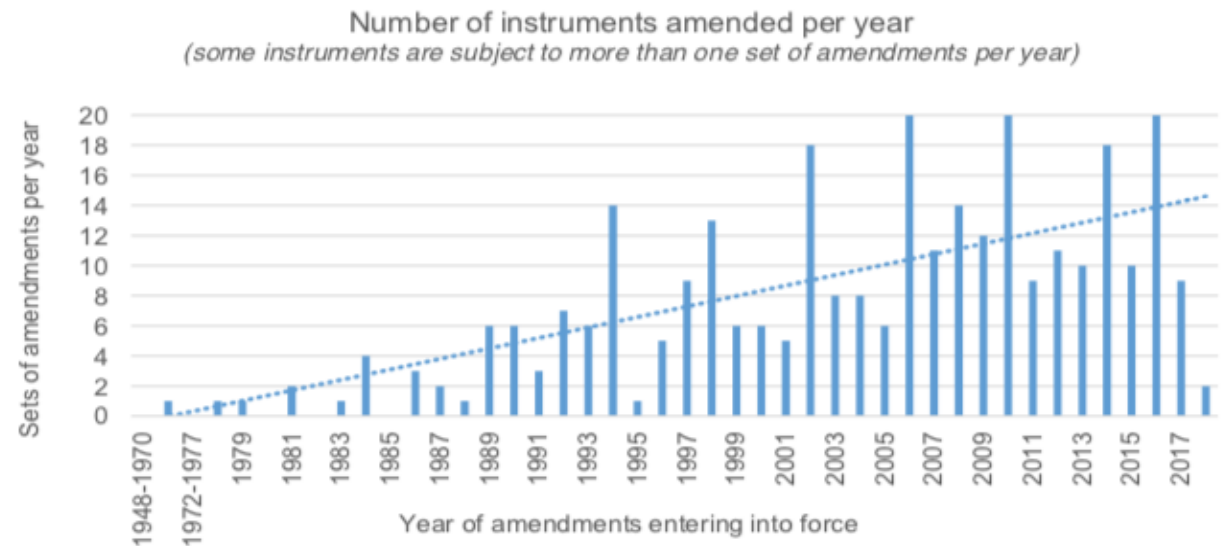


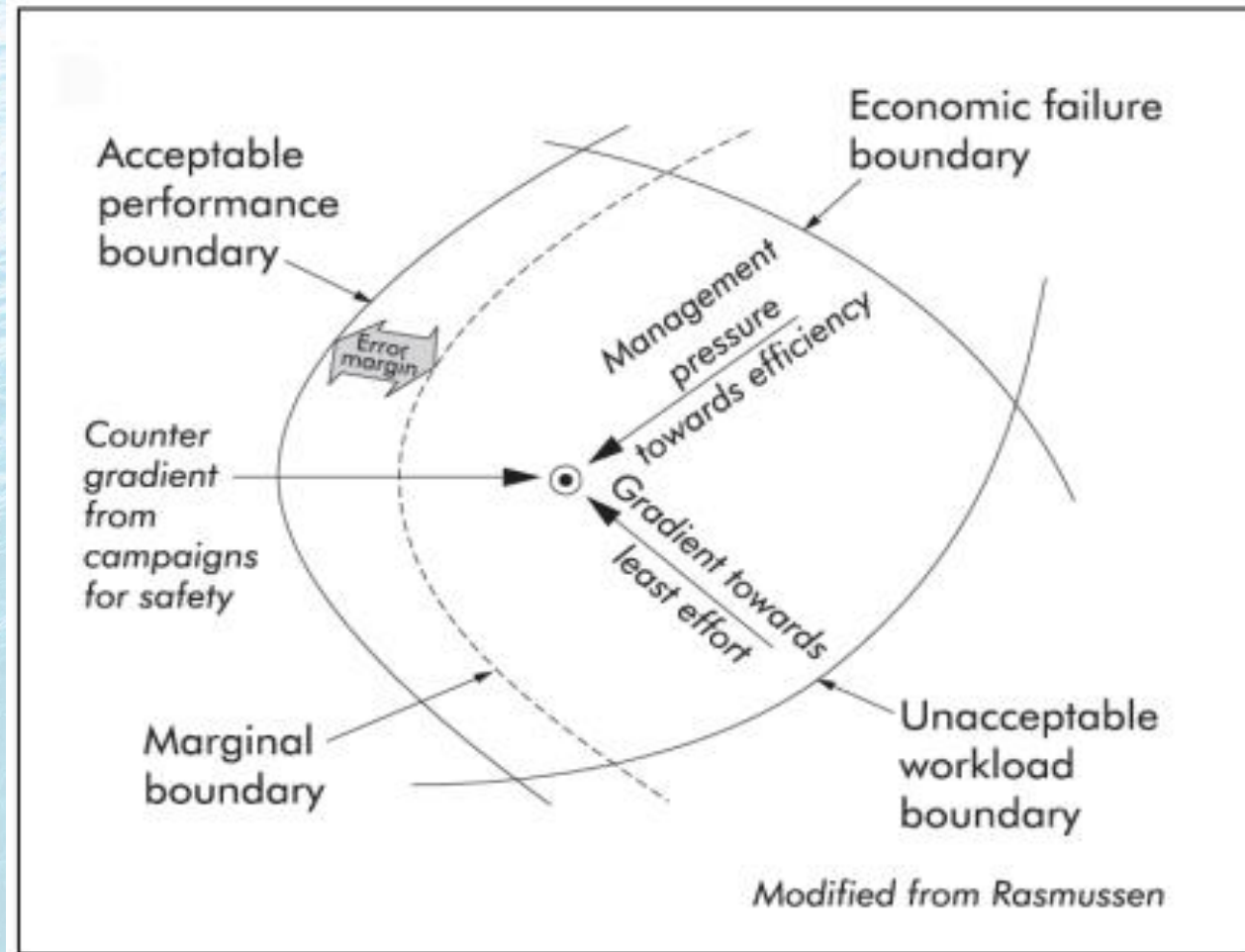






Source IMO





From Rasmussen and Cook

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

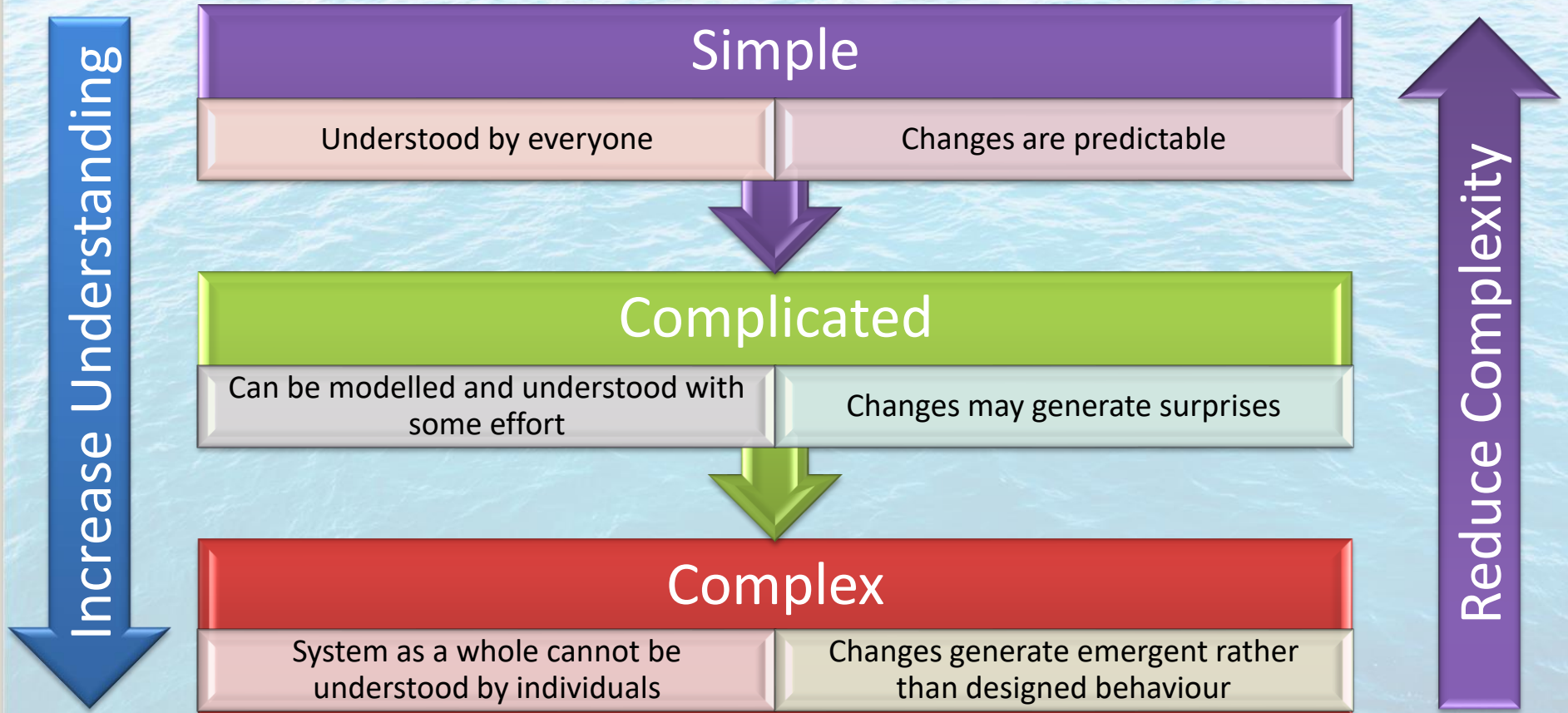
Systems

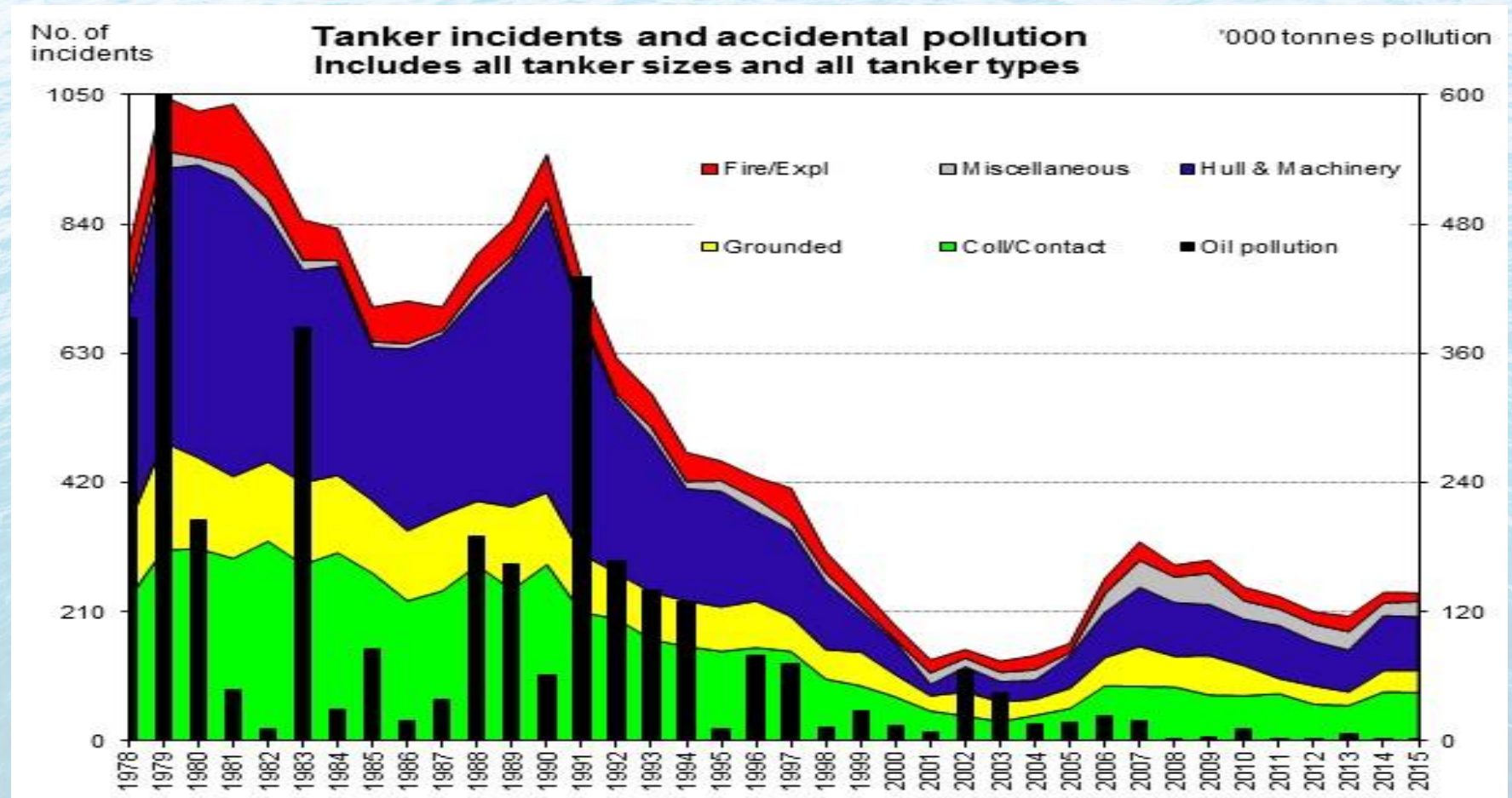


ISO9001
ISO14001
ISM
ISPS
SIRE/CDI
TMSA

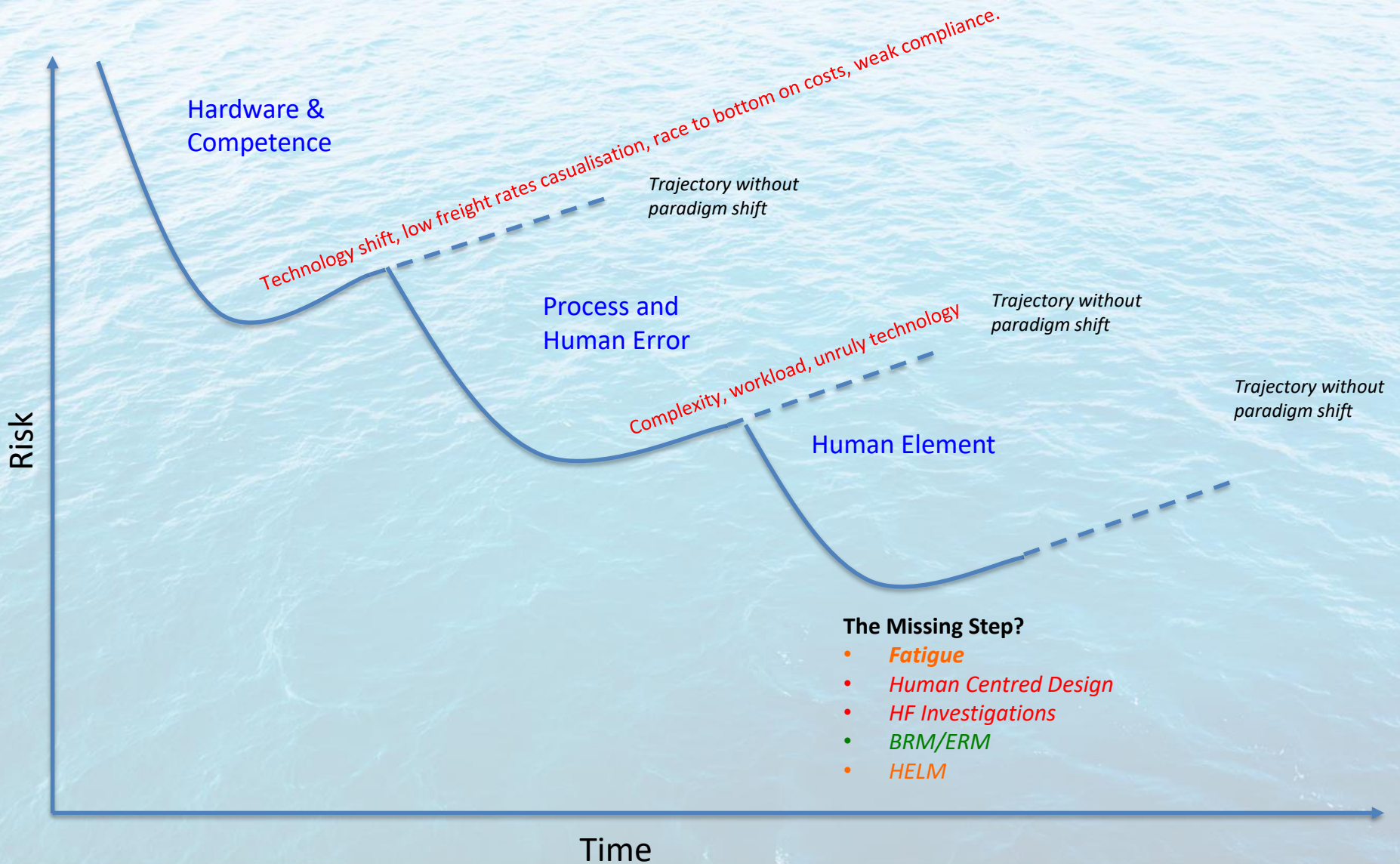
- Automation & Navigation
 - ECDIS
 - Arleigh Burke collisions?
 - Air France Airbus
 - Adaptive Cruise and Driverless Cars.
- Irony of Automation
 - Automation may mask the development of a serious system failure, resulting in limited time for the operator to gain 'situational awareness' and react
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







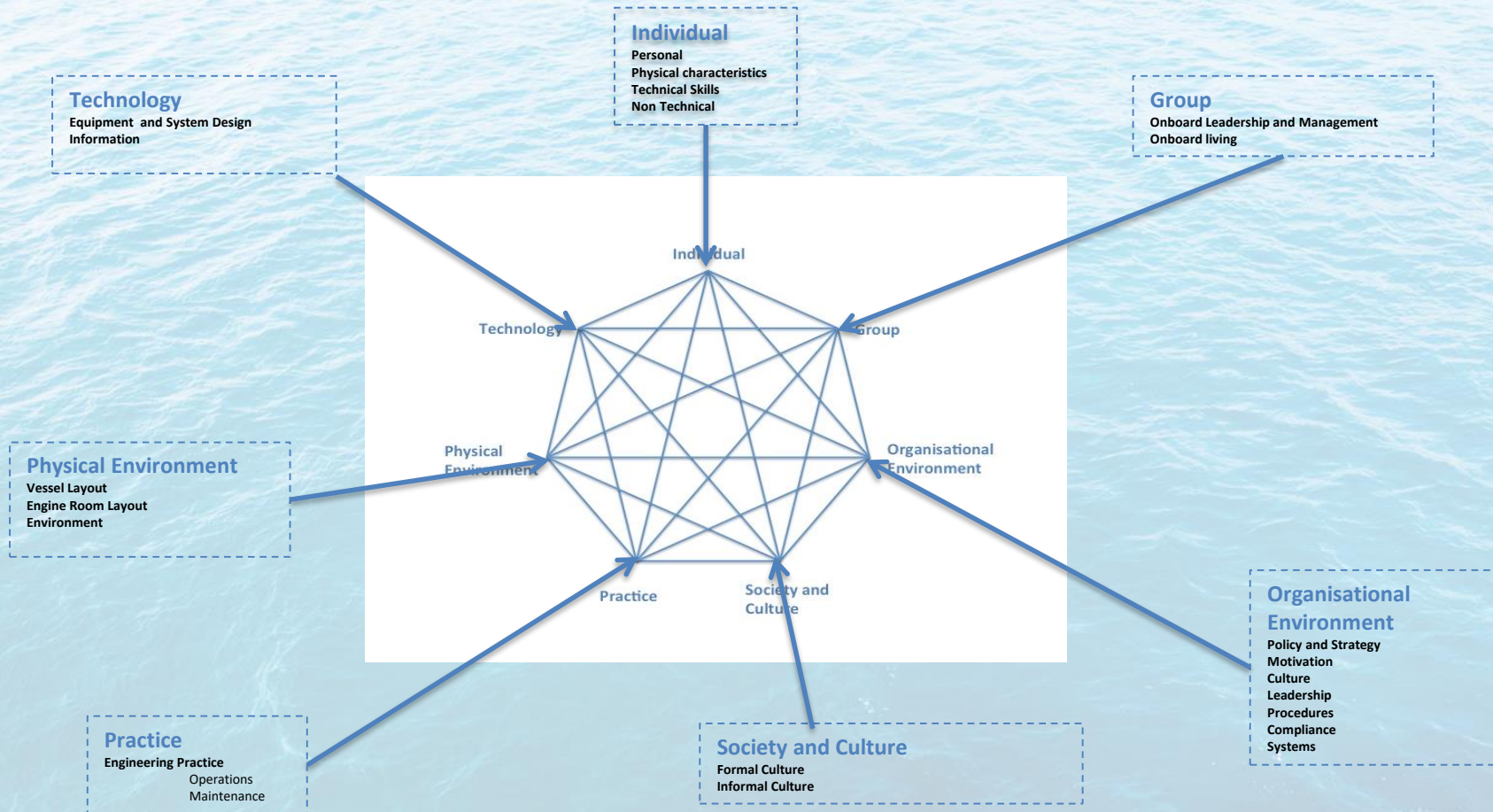
Intertanko Statistics



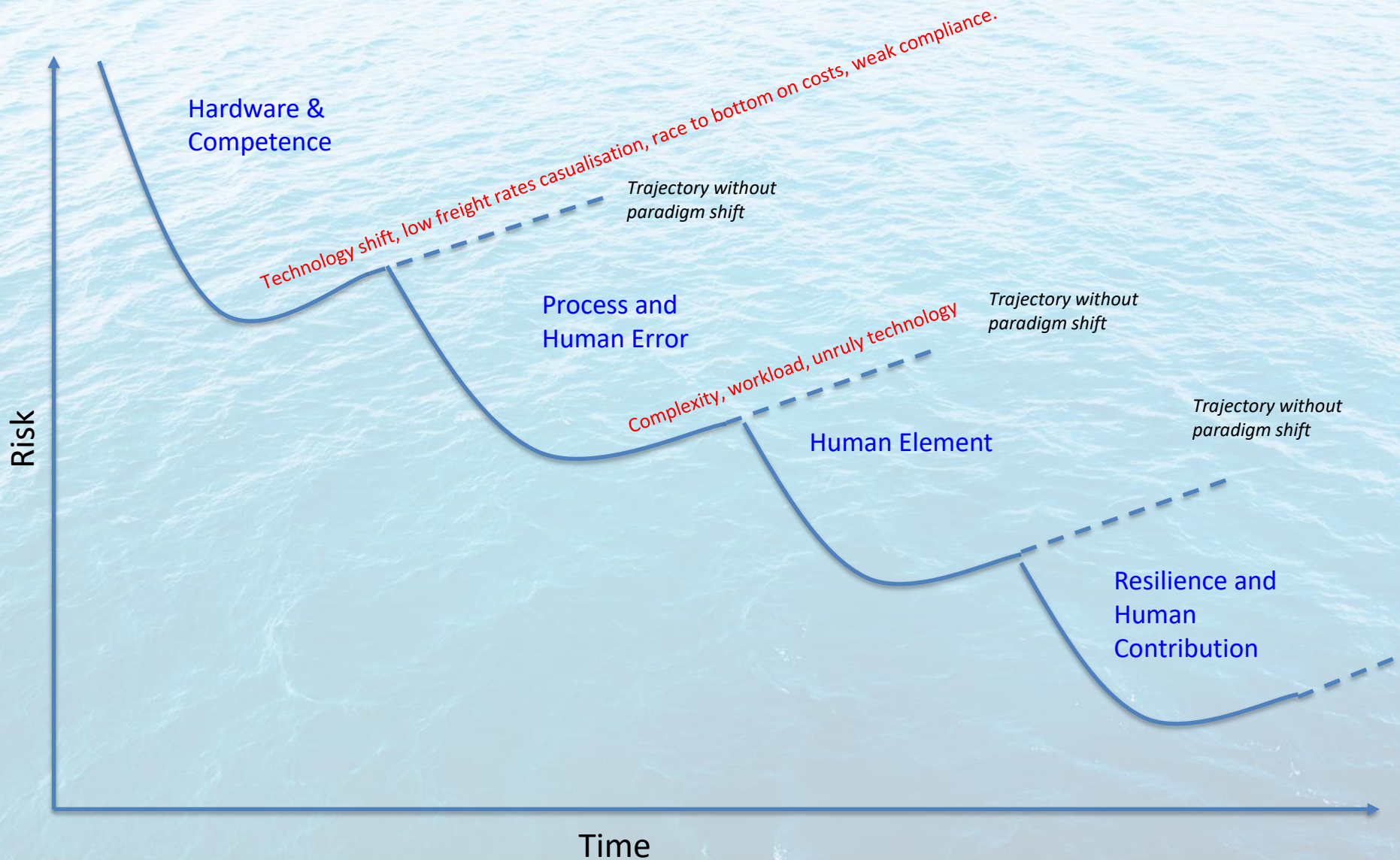
The human element is a complex multi-dimensional issue that affects maritime safety and marine environmental protection. It involves the entire spectrum of human activities performed by ships' crews, shore based management, regulatory bodies, recognized organizations, shipyards, legislators, and other relevant parties, all of whom **need to cooperate to address human element issues effectively**

What does it say...its about everything and its all connected.....

moams Its all connected-the Septigon



After Thomas Koester and Michelle Grech ... Human Factors in the Maritime Domain



'Things that have never happened before happen every day'

Scott Sagan The Limits of Safety

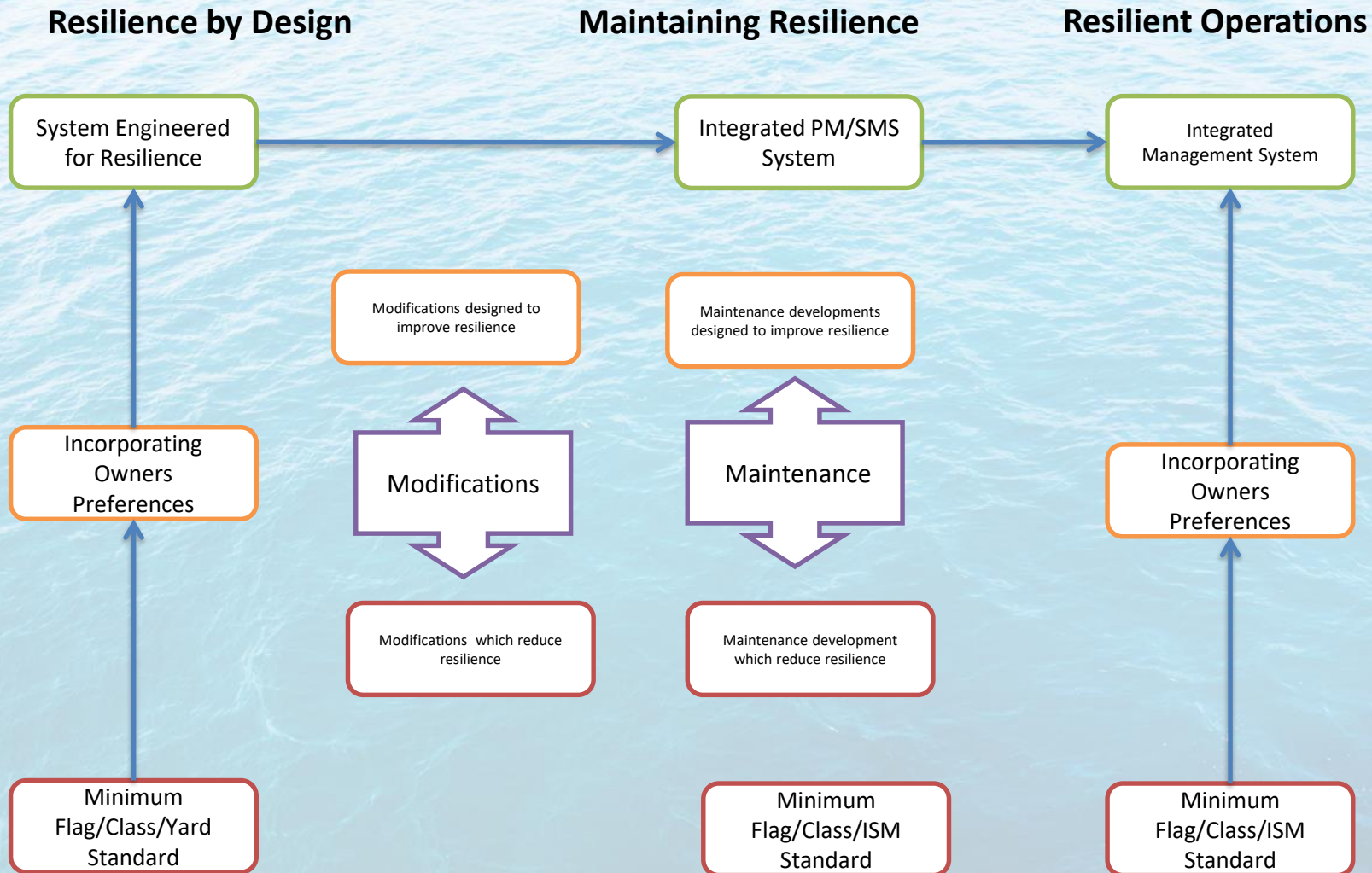
'In the marine industry things that **have** happened before happen every day in different ways'

Shaw's corollary

To deal with Complexity you need Resilience

The resilient shipping company will be able to succeed in changing circumstances:-

- At a corporate and operating strategy level.
- At an operating and commercial management level.
- At a resource and systems level.
- At the sharp end/front line operating level.



- James Reason
 - Human Error 1990
 - Organisational Accidents 1997
 - Swiss Cheese Model
- Human Contribution 2008
 - Captain Rostron and the rescue of the Titanic survivors
 - Heroic Recoveries
 - Training, Discipline and Leadership
 - Sheer Unadulterated Professionalism
 - Skill and Luck
 - Inspired Improvisations

- People aboard – only there to make mistakes?
- Or are they the only thing that makes an imperfect ship and management system work?
- Focus less on the potential for error and more on their actual value
- Seafarer's
 - Navigate the ship
 - Load and discharge its cargo
 - Operate and maintain its plant
 - Act as the brain that connects the ships equipment and process with the real day to day world and do so mostly without error
- Decisions made at the front line, by informed staff, will have immediate impact

moams Human Error to Human Contribution

Human Error

Perfectly Designed Ships

Perfectly Designed Process

Error Prone Humans mess it up

Massive amount of paperwork generated to avoid human error.

Is paperwork about avoiding incidents or about liability and punishment?

Human Element

Ships/ equipment designed to accommodate people.

Process designed to help and not hinder.

Work as done ,not as imagined

Error producing factors need to be understood.

Paperwork is there to help not punish.

People, equipment and process integrated.

Just Culture

Human Contribution

The only reasons ships work is because of the people onboard.

People have freedom and space to act.

Educated not just trained.

People on the spot make better decisions.

People have the ability to identify and rectify faults.

People have the ability to fix things.

People have the ability to react in emergency.

- Great improvements in safety and operations over the last thirty years
- Multiple paradigms:-
 - Hardware and competence
 - Process and Human Error
 - Human Element
 - Resilience and the Human Contribution
- Each paradigm brings something to the operation but eventually succumbs to the the law of diminishing returns or the environment.
- We need to focus on the human contribution not human error

Our people are our greatest.....STRENGTH