# Tanker Operator Conference Hamburg 2018

Putting People at the Centre of a More Profitable Business

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## **Outline**

- Introduction
- Past present and future
  - The 'Traditional' Era
  - The 'Procedural' Era
  - The 'Human Element' Era
  - The Future
- Good Business is Good People
- Conclusion

## Introduction

- '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 their mistakes?
  - Why do we create so much process and documentation to ' avoid' and record human error?
  - Why do we only notice the 'goals let in' and not the 'saves'?
- Are people an error prone component that should be treated as robots until they can be replaced? Amazon mentality....
- What is the meaning of life?
- How did we get here and where are we going?

## **moams Casualty Trends-Reducing Risk**



## moams One Risk Reduction Curve or Several?

Trajectory without paradigm shift

Dominant themes change in new 'era' but retain elements of preceding dominant themes

Risk

## **The Traditional Era**

Traditional

Trajectory without paradigm shift

Rapid technological change, low freight rates, casualisation, race to bottom on costs, weak compliance.

#### **Major Themes**

- Development of Hardware
- Competence

#### **Supporting Themes**

- Rules and Regulations **Transitional Themes**
- Industrial Safety



#### Time

## moams Why a New Paradigm was Needed



# The 'Procedural' Era

# **'Procedural' Era**

Traditional

Rapid technological change, low freight rates, casualisation, race to bottom on costs, weak compliance.

Trajectory without paradigm shift

#### **Procedural**

Goal conflicts, complexity, workload, unruly technology

#### Major Themes

- Procedures
- Management Systems

#### **Supporting Themes**

- Development of Hardware
- Competence
- Industrial Safety
- Risk Assessments
- Quality Systems
- Measurement
- Vetting and Port State

#### **Evolving Theme**

- Environment
- Security
- Piracy

### Risk

• Development of Hardware

**Major Themes** 

- Competence Supporting Themes
- Regulations
- Industrial Safety

Time

## **Did 'Procedural' Work?**



### **Intertanko Statistics**

# **Goal Conflict**

#### **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

ISO9001 ISO14001 ISM ISPS SIRE/CDI TMSA **Systems** 

## **Complex Industry**



## Even more rules !!

Number of new instruments over time



Number of instruments amended per year (some instruments are subject to more than one set of amendments per year)



## **Complex / 'Unruly' Technology**

- 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 specific training



# **The 'Human Element' Era**

# **'Human Element' Era**

Traditional

Rapid technological change, low freight rates, casualisation, race to bottom on costs, weak compliance.

Trajectory without paradigm shift

#### **Procedural**

Goal conflicts, complexity, workload, unruly technology

Human Element

#### Major Themes

Risk

- Development of Hardware
- Competence
- **Supporting Themes**
- Regulations
- Industrial Safety

#### **Major Themes**

- Procedures
- Management Systems
- Supporting Themes
- Development of Hardware
- Competence
- Industrial Safety
- Risk Assessments
- Quality Systems
- Measurement
- Vetting and Port State

#### **Evolving Theme**

- Environment
- Security
- Piracy

#### Time

## **IMO view of Human Element**

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



### **Accident models**



# Where are we now?

Traditional

Rapid technological change, low freight rates, casualisation, race to bottom on costs, weak compliance.

Trajectory without paradigm shift

#### **Procedural**

Goal conflicts, complexity, workload, unruly technology

#### **Major Themes**

- Development of Hardware
- Competence
- **Supporting Themes**
- Regulations

Risk

Industrial Safety

#### **Major Themes**

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- Procedures
- Management Systems
- Supporting Themes
- Development of Hardware
- Competence
- Industrial Safety
- Risk Assessments
- Quality Systems
- Measurement
- Vetting and Port State
- **Evolving Theme**
- Environment
- Security
- Piracy

#### **Seafarer Human Error**

**Human Element** 

#### Time

## moams So What Happened?

- Blame Culture
- Liability/Insurance
- Criminalisation of Seafarers
- Safety Reporting and Analysis
- Incentives and inappropriate KPI's
- Misunderstanding of HE
  - Just another word for people
  - Just covers seafarer error
- Lack of development of Human
  Element at IMO
- Some Flags, Industry Organisations and Ship-owners have progressed HE
- IMO are looking anew at HE

Human error alone is still often seen as the sole explanation for aviation accidents and incidents. However, to maintain and improve aviation safety, this view needs to be updated. The CAA's vision seeks to work collaboratively with all our industry communities to improve understanding and management of the factors that influence HP. This will be achieved through appropriate risk-based regulation and oversight, as well as safety promotional activities to lead and effect change UK CAA Vision

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 James Reason 1990

'The faster the engineers and inventors served up their 'automatic' gadgets to eliminate the human factor the tighter the squeeze became on the powers of the operator' SS Stevens 1946 referring to aviation safety

## **moams SO....WHAT'S BEHIND HUMAN ERROR?**



## **moams WHAT'S BEHIND HUMAN ERROR?**

### **Technical Factors** Errors, Compromises, Corner-Cutting, 'Optimisation' in:-

- Specification
- Design
- System Integration
- Build/Manufacture
- Sub contracting
- Testing
- Commissioning
- Inspection



## Organisational Factors

Errors, Compromises, Corner-Cutting, <u>'Optimisation'</u> resulting in:-

- Lack of Clear Direction
- Resource constraints
- Out-dated Paradigm
- Culture
- Complexity
- Workload
- Goal Conflict
- Commercial Pressure
- Inappropriate KPI's
- Motivation/Punishment



# What's Next?

## What's Next



# **Good People are Good Business**

# **The Human Contribution**

- 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

'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 offer more to the pursuit of improved safety in dangerous operations'

## **Can your people contribute?**

- 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
- They are the goalkeepers
- 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

# Conclusions

- Great improvements in safety and operations over the last thirty years
- Several Era's:-
  - Traditional
  - Procedural
  - Human Element
  - Resilience and the Human Contribution
- Each era/paradigm brings evolution but eventually succumbs to the the law of diminishing returns or the environment.
- We need to finish the job on the human element
- We need to focus on the human contribution not human error
- Our people are our greatest.....STRENGTH
- Meaning of life ....to be continued