



Seafarers are Owners

Yangon, Myanmar, 9th & 10th April 2015





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Behaviour & psychology of seafarers : a P & I insurance perspective

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- 17 years ashore working in Asia
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Overview

- What is P & I? P & I Claims 2007 to 2012.
- Human Factor and increasing global fleet.
- Safety management & loss prevention.
- American P & I Club condition surveys.
- Behaviour Based Safety. (BBS)
- Cultural considerations. Demands on the seafarer.
- Psychological influences. Stress. Fatigue.
- Psychometric screening. Medical examinations.
- The BBS Plateau. Limitations of BBS.
- BBS incorporating cognitive & social factors.
- Leading for safety.



What is P & I ?

Protection & Indemnity insurance cover against 3rd party liabilities

- Loss of life, injury & illness of crew, passengers and others (30% claims)
- Cargo loss, shortage or damage (about 40% of claims)
- Collision
- Damage to docks, buoys and other fixed and floating objects
- Wreck removal
- Pollution
- Fines and penalties
- Mutiny and misconduct by crew
- Crew repatriation and substitution
- Damage to property on board the insured vessel
- Quarantine

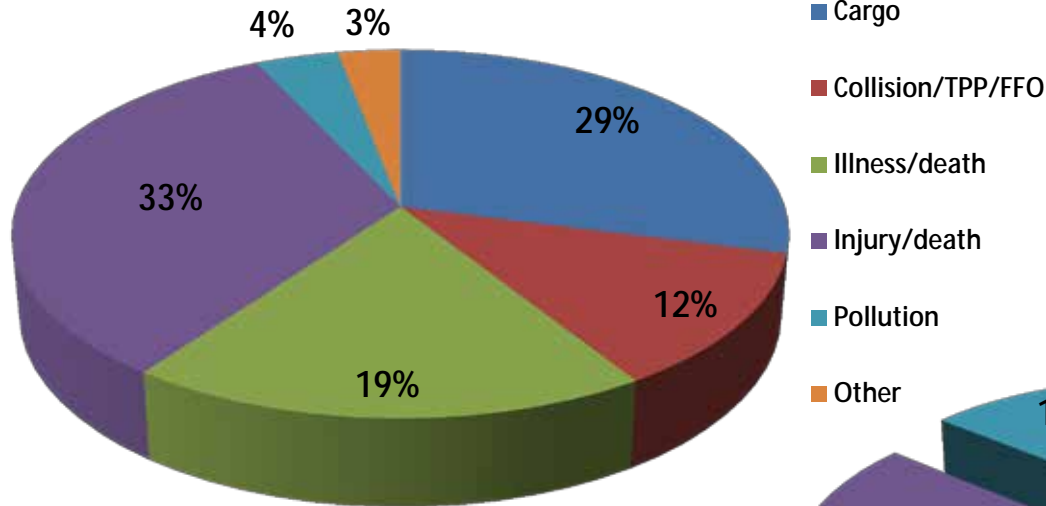


For both The American Club and Eagle Ocean Marine



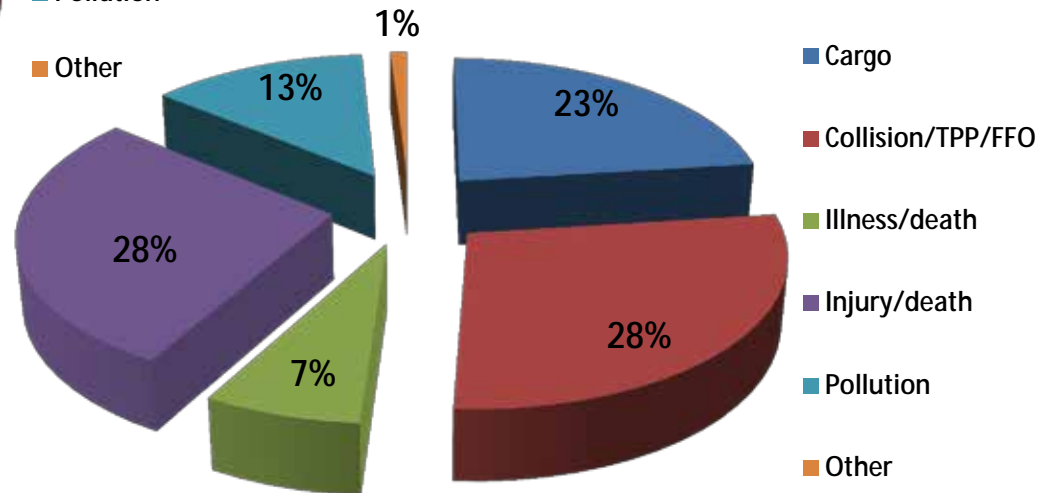
P&I Owned Claims at the American Club: 2007 to 2012

Frequency



Average annual incident count: 1,809

Cost



Average annual incurred value: \$60.3 million



The Human Factor

It is often stated that :

- 80% of all accidents at sea are attributable to human error (operator error)
- 20% to hull/equipment failure.



Source : 'The Human Element in Shipping'. D. Squire.
Nautical Institute, Alert! Bulletin.



The Human Factor ?



Global fleet increasing

- 1,639 maritime casualties reported in 2014 (10% increase from 2013)
- 2014 saw an increase in hull & machinery damage, wrecking & stranding, collisions/contacts
- South China Sea waters had most collisions
- Forecast for 1,484 vessels to be added to global fleet in 2015. (42,604 in 2014)
- Set to continue to 50,000 vessels by 2020
- **Result : port congestion, older vessels, increase in casualties?**

Development of safety management

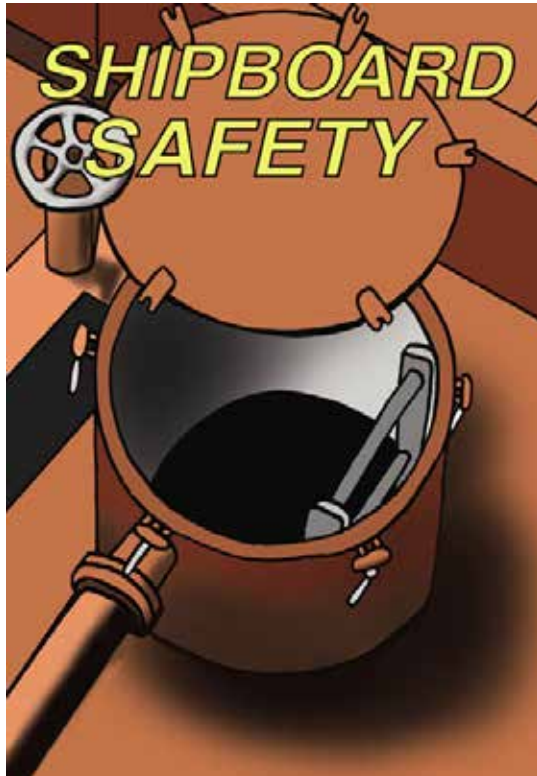
- ISM Code, Safety Triangles, incident rates.
- Target 'Zero accidents'. No Lost Time Incidents
- Objectives can discourage reporting, lead to risk taking?
- Minimum requirement for near miss reporting – can lead to false reporting?
- Frustration, confusion....
- Knowledge, training, procedures, can only get accident rates down to a certain level.



Safety management & loss prevention

- American Club comic books

Shipboard Safety



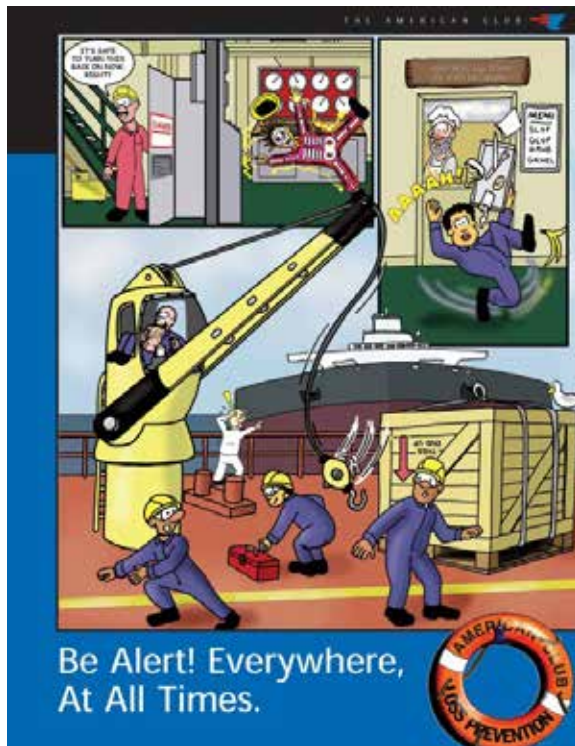
Protecting the Marine Environment



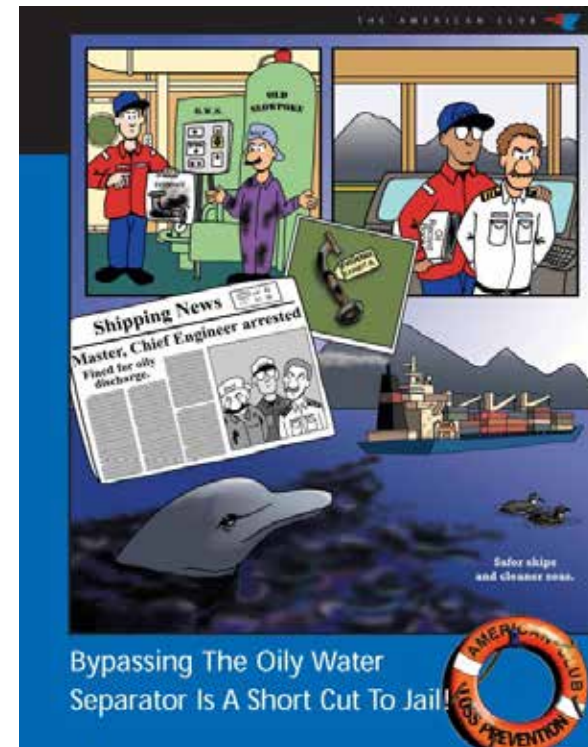
Safety management & loss prevention

- American Club posters

Safety



Environmental Protection



American P & I Club condition surveys

- The American P & I Club use the International Group of P & I Clubs, Ship Technical Committee, survey forms. Some typical questions relating to crew well being are :

Shipboard management

- 4.2.10 : Is an adequate emergency command structure in place?

Crew

- 4.3.1 : Are at least officers proficient in Maritime English to communicate efficiently?
- 4.3.2 : If crew is multinational is there a common language understood by all?
- 4.3.3 : Does the company have a briefing / de-briefing policy for Master/Chief Engineers prior to joining/after signing off?
- 4.3.4 : Is random or specific drug and alcohol testing carried out?



American P & I Club condition surveys

Safe working

- 4.4.1 : As observed, are safe working practices, including work permit procedures, implemented and adhered to?
- 4.4.3 : Is relevant personal protective equipment and clothing, appropriate to the vessel type, provided and in use?
- 4.4.11 : Does the vessel regularly receive Club loss prevention publications and are they visibly in use?

Hygiene standard and housekeeping

- 4.5.1 : Are crew galley and pantries clean and tidy? Is fitted equipment in apparent satisfactory condition? Are suitable food handling procedures in place?
- 4.5.2 : Are provision and cold stores clean, tidy and maintained to correct temperature?
- 4.5.3 : Is the general house-keeping standard, including sanitation, satisfactory?

Life saving appliances

- 4.7.6 : Is the medicine locker sufficiently stocked, tidy and in date?



Behaviour Based Safety

- Pioneered by DuPont chemical company
- Behaviour based safety management & culture. Requires an 'attitude' adjustment.
- **'Behaviour influences attitude and attitude influences behaviour'.**
- Focus on work groups in static settings, most efficient at behaviour change and injury reduction. **Goal to Eliminate Injuries.**



Source : DuPont



Behaviour Based Safety

- Give 'safety' equal weight with other business priorities.
- Commitment, leadership and drive of senior management determines the success of the safety effort.
- Safety organization, audit & investigation.
- Management of change. Recognise and anticipate unsafe conditions and acts.
- Approach employees who conduct unsafe acts – empower them during discussion.
- Hold further interviews. Hold effective safety meetings



Source : DuPont



Behaviour Based Safety

- Obtain accurate analysis of strengths and weaknesses with respect to **'Ownership for safety'**.
- Select most appropriate actions to address problems, determine strategies.
- Propose actions and strategies to management.
- Implement actions across the organisation.
- Monitor performance to ensure continuous improvement.



Source : DuPont



Behaviour Based Safety

- **STOP : Safety Training Observation Program.**
- **Focus on people at work.**
- **Consistent observation procedure.**
- **Routine analysis of observations.**
- **Feedback to management.**



Source : DuPont



Risk reducing behaviour?



Job Safety Analysis : Hazard report card (Empowerment – the right to stop work)

HAZARD REPORT		CORRECTIVE ACTIONS	
Date:	Time:	Corrective action recommendations:	
Reported by:		_____	
Hazard Description:		_____	
_____		_____	
_____		_____	
_____		_____	
Location:		Corrective action to be taken:	
_____		_____	
_____		_____	
Risk Level: <input type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> H <input type="checkbox"/> E		<input type="checkbox"/> Work can continue once all corrective action has been taken and the hazard risk level is re-assessed as low	
▶ For all M , H , & E results, stop work and report to your supervisor immediately.		Name: _____	
		Signature: _____	



Behaviour and accident investigation – learning from failure

- Expectation to find a reason for the accident.
- So, establish a rule violation or breach of procedures – no further questioning?
- Response – further training, new more updated procedures, more inspections and better monitoring of enforcement.
- **Root cause may often be unaddressed.**
- **Possible behavioural and psychological aspects not fully considered and acted upon.**



Source : Nautical Institute Seaways 3/15. Dr. N. Anand



Cultural considerations

Navigational Skills Assessment Program (NSAP)

- Data samples compared results of 30 Filipino Masters & Mates, to 700 foreign counterparts.
- **Filipinos resisted speaking, communication poor, did not effectively utilise bridge team.**
- Result : loss of situational awareness, poor management skills, complacency, inexperienced, unable to anticipate events, failure to use navigational aids and maximise use of available equipment.



Source : NI Command Seminar, Manila, 11/2014. Seaways 3/15



Cultural considerations

Navigational Skills Assessment Program (NSAP)

- **Solution: improve navigational competency.**

How :

1. Effective Bridge Resource Management training.
2. Additional training beyond statutory requirements ('Soft skills', communications)
3. Effective assessments and follow up.



Source : NI Command Seminar, Manila, 11/2014. Seaways 3/15



Cultural considerations

Navigational Skills Assessment Program (NSAP)

- Other issues discussed and highlighted :

Mentoring, leadership and management, culture, lack of ability of junior officers to challenge the Master.

Crews must have the skills, assertiveness and knowledge to speak if needed.

(Need to improve their Power Distance Index)



Source : NI Command Seminar, Manila, 11/2014. Seaways 3/15



The demands on a seafarer

- Safety and operational performance – conflict?
- Continued good operational and safety performance can lead to complacency, over confidence, and risk taking.



The demands on a seafarer

- Commercial shipping not a military organisation. It is part of the corporate world.
- People in Command must think like managers. 'This is not my Command, this is under our management'.
- Seafarers need to be able to question the authority if there is a need and those in Command and the Company, must encourage this.



Source : NI Command Seminar, Manila, 11/2014. Seaways 3/15



Don't be a risk taker

- Seafarers don't need to be Superheroes

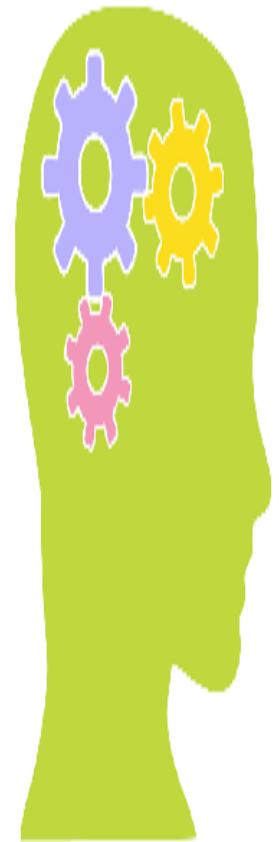


*Remember your
family waiting for
you at home*



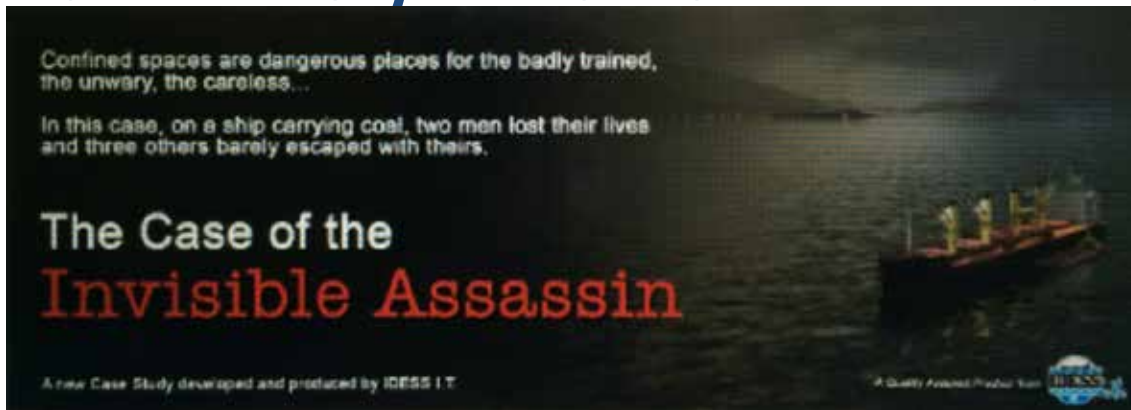
Psychological influences

- Teamwork – effective in sport & military.
- Only effective on commercial ships with multi-national crew when things going right.
- **Variances in human nature, behaviour, psychological and cultural influences come into play**



Entry into confined spaces

- American Club E-Learning training videos, tank entry – fatalities. Based on real events



Stress – an important psychological factor

- **Stress** – a force that pushes a physical or psychological factor beyond its range of stability.



Producing a strain within the individual.

Factors influencing seafarers' stress

- Physical stressors : heat, noise, ship movement, sea sickness, hard physical work, lack of exercise, climate changes during voyages.
- Psychosocial stressors : irregular shift, long working times per day, irregular working times, lack of sleep.
- Social stressors : separation from family, long stay on board, conflicts with colleagues, isolation.
- High work demand : responsibility, pressure due to decision making, monotony, lack of independence.
- High management tasks : insufficient qualification of subordinate crew members, responsibility for them.



Source : AMET Int'l Journal of Mgmt. July–Dec 2012. Rengamani, Murugan. A study on the factors influencing the seafarers' stress.



Ship type influences seafarers' stress

- Tankers : more stress due to danger nature of cargo, risk of fumes, explosion and pollution.
- Container ships : busy in port, quick turnaround.
- Passenger ships : less stress, as more often in port, more easy to go ashore, better food, communications and social interaction.
- Small ships : fishing boats, offshore supply, rough weather, small crew numbers, short stay in port.

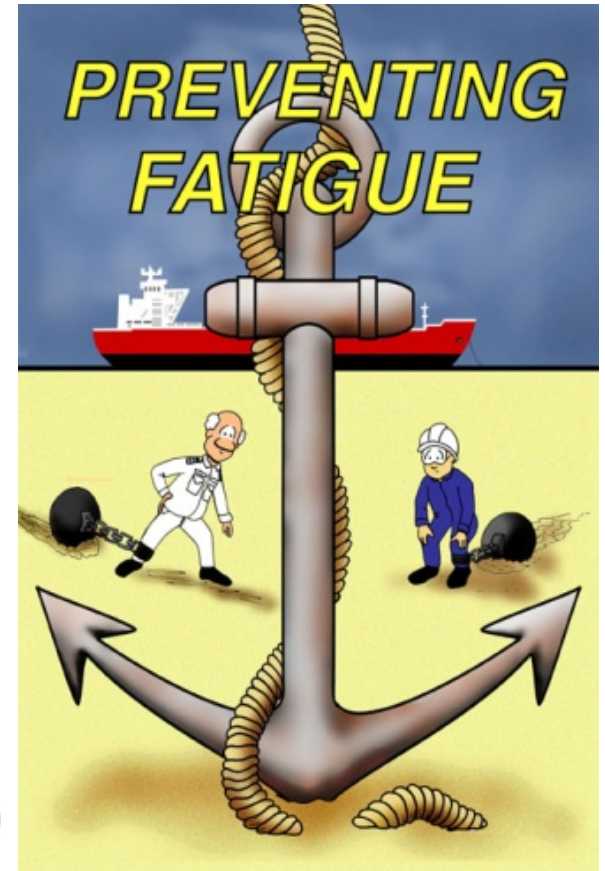


Source : AMET Int'l Journal of Mgmt. July–Dec 2012. Rengamani, Murugan. A study on the factors influencing the seafarers' stress.



Fatigue

- American Club comic book 'Preventing Fatigue'



Fatigue

- Not just about working hours and minimum manning levels.
- Poses a major problem in terms of safety of life at sea.
- If seafarer unable to identify cause of fatigue, he is unable to take measures to prevent it.
- USCG looked at science behind fatigue and identified 15 interrelated risk factors.



Source : 'The Human Element in Shipping' . D. Squire.
Nautical Institute, Alert! Bulletin.



Psychometric screening

New advancements in technology, operational practices, and pressure on economic efficiency, safety and environmental management, has increased the load and stress on seafarers.

It is therefore important to select individuals at entry level, who possess the appropriate personality and aptitude to successfully face the challenging career at sea.



Source : India DG Shipping. Training Circular No. 2 of 2006.
Introduction of psychological screening test at entry level candidates for pre-sea officer courses.



Psychometric screening

Psychological screening for admission to pre-sea training courses is now common place, in addition to testing existing seafarers, and for promotion assessments, and as part of incident investigation.

The test will evaluate factors such as:
adaptability, emotional strength, frustration tolerance, anger and aggression tendency, anxiety, depression and loneliness.



Source : India DG Shipping. Training Circular No. 2 of 2006.
Introduction of psychological screening test at entry level candidates for pre-sea officer courses.



Psychometric screening



ILO and IMO guidelines on the medical examinations of seafarers(2013)

- Seafarers required to undergo medical examination to reduce risks to other crew members and for safe operation of the ship, as well as to safeguard their personal health and safety.
- Certificates, valid for max 2 years, issued in accordance with STCW 1978, and / or MLC 2006.
- Includes guidance on psychosis and mood disorders.



Pre-employment medical examinations (PEME)

- American P & I Club requires seafarers from certain countries that man Member's vessels, to undergo mandatory medical examination at Club approved clinic BEFORE joining vessel.
- Examination to include a psychological test (preferably the 16PF Questionnaire)
- Standard psychological tests, if available, to be conducted in seafarer countries not part of the Club's PEME program.



The BBS plateau

- After significant initial success of BBS, experience has shown that behavioural interventions have limited effectiveness over the long term and have not sustained a continued reduction in safety incidents.
- This is known as the BBS Plateau.



Source : DuPont



Limitations of BBS

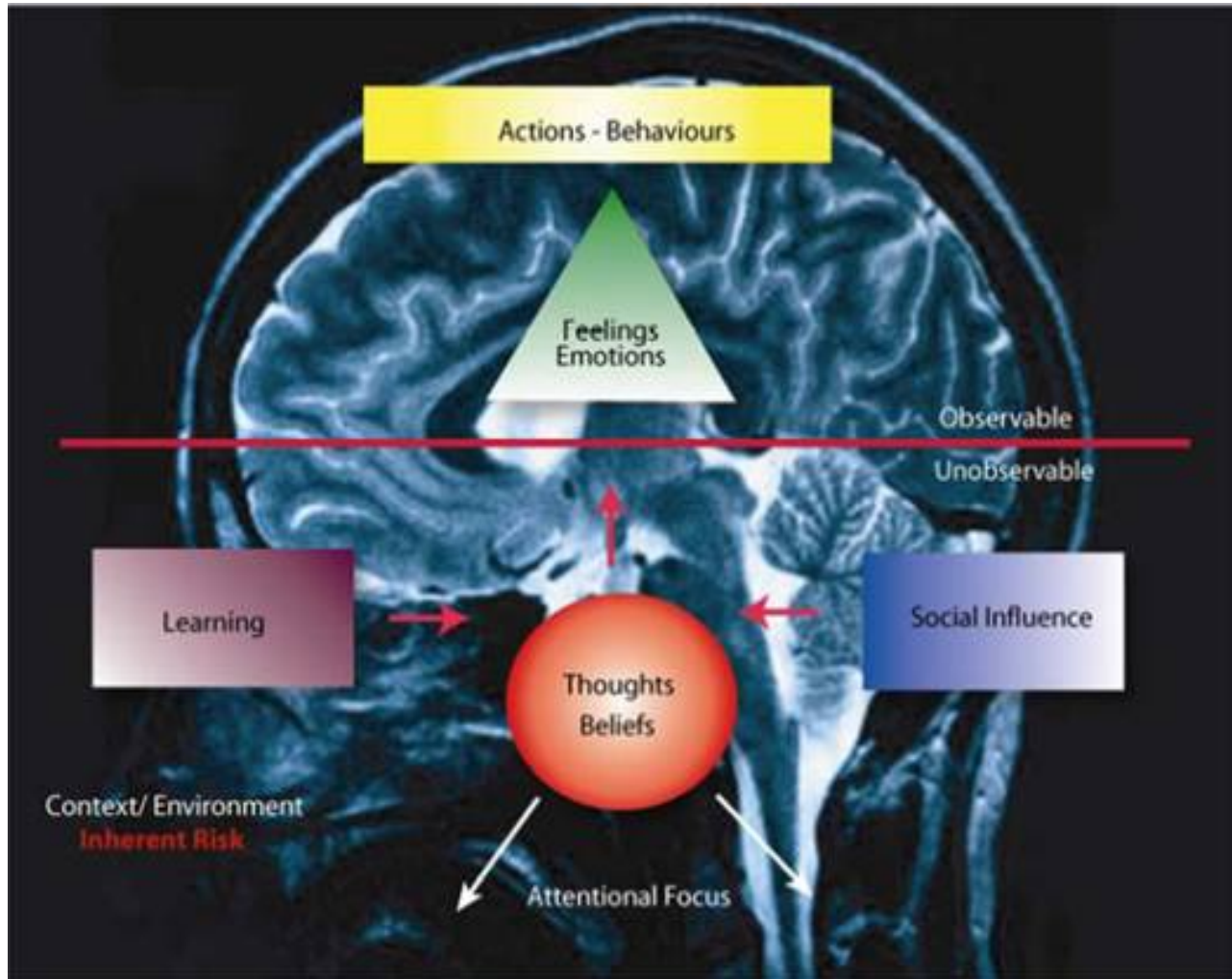
- Over time a workforce tends to habituate to BBS systems, safety signs, and regulations in the work place, as they become familiar.
- External application of potential consequences, are delivered by a supervisor. This bypasses the personal decision making process as an internal value.
- Focus is on employee behaviour, not manager.
- Underlying research not fully understood by workplace practitioners.
- Focus on the end point in a chain of events. Does not address work speed, productivity, shift patterns and how they relate to safety.



Source : DuPont



BBS incorporating cognitive & social factors



Source : DuPont

BBS incorporating cognitive & social factors

Observable mechanisms

- Learning. Social influence (culture, norms and the relative effect of leadership)
- Thoughts, values, beliefs : cognitive processes that directly influence behaviours.
- Focusing on the thought–action process will impact upon the production of safe behaviours and actions.



Source : DuPont



Leading for safety

The behaviour patterns and psychological strengths required to be an effective leader include the following :

Confidence & authority : earn respect through your actions.
Remain calm in a crisis.

Empathy & understanding : identify & understand, be sensitive to different cultures, aware crew limitations.

Motivation & commitment : interest in crew welfare.

Openness & clarity : encourage two way communication.



Source : 'Leading for safety' Maritime & Coastguard Agency, UK



And finally.....



Always



Thank you for listening

Safe sailing.....

Any questions ?

