



Commissioners *of*
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*Navigation
and Maritime
Services*

The Human Element

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What is happening the maritime industry?

Shipping and the advances in the last 10 years have leapfrogged an entire maritime legacy.

The present day mariner faces the most interesting period in the history of the industry.

We are entering the digital age. Technology is constantly advancing.

Historically, high profile shipping disasters have led to improvements in marine safety.

The passenger ship *Costa Concordia* is certainly no different, with her final report published in 2013.

The first line of the report read;

“It is worth to note that the human element is the root cause in the Costa Concordia casualty, both for the first phase of it, which means the unconventional action which caused the contact with the rocks, and for the general emergency management”.

What is 'Human Element'

The Human Element is not an option. We cannot turn it on or off. It exists all around us.

- The shipping industry is run by people, for people.
- People design ships, build them, own them, crew them, maintain them, repair them and salvage them.
- People regulate them, survey them, underwrite them and investigate them when things go wrong.



What is 'Human Element'

The human element;

- Remains a basic component for all its strengths and weaknesses that can either cause a disaster or prevent it. On board a ship the crew are the secret to success & the victims of its failure.
- It is the one essential that is extremely difficult to modify since it needs a modification in both intentions and attitudes.
- It is a complex multidimensional issue that plays a most vital role in the operation of industry, in enhancing maritime safety, security and marine environment protection.

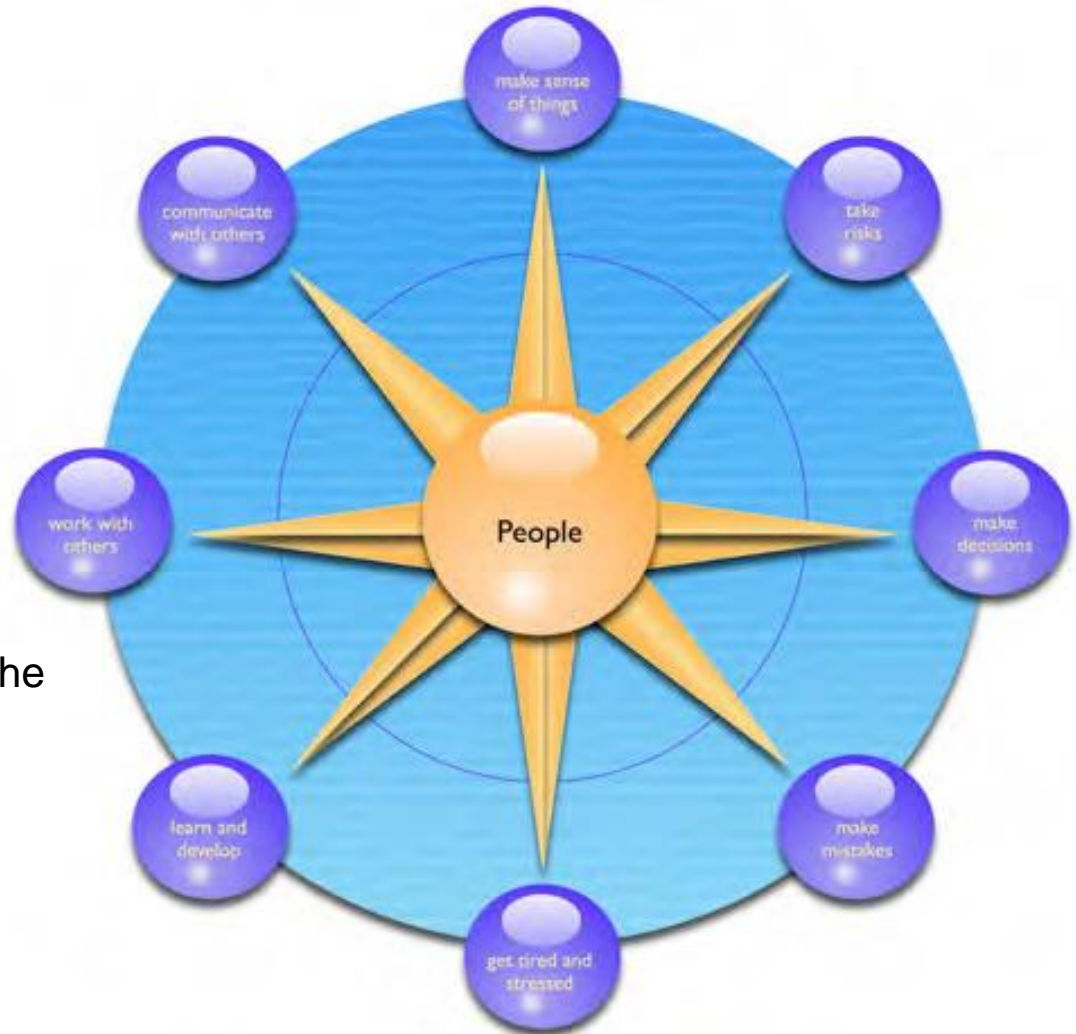
Breaking down 'Human Nature' – The Human Element

People;

- Make Decisions
- Take Risks
- Make Mistakes
- Get tired & stressed
- Learn & Develop
- Work with others
- Communicate with others
- Make sense of things

Everything we do – together with the behaviour of all our colleagues both ashore and afloat

– *is* the Human Element.



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Old style navigator –vs- technology aware junior officers:

What's the difference between an old style navigator and a young junior officer?



Live data vs Historic.

Complacency.



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Old style navigator –vs- technology aware junior officers:

What's the difference between an old navigator and a young junior officer?



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Sinking the unsinkable – Victims of our own success?



What's the difference?



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Situational Awareness Experiment

I would like you all to imagine you are on board a vessel at sea. Overnight passage. You are the Captain, asleep in your cabin. It is 03:15, quiet morning, full moon.

The phone rings, it's the watch keeper informing you he has a problem on the bridge. He cannot silence the echo sounder alarm, and its distracting him from his duties.

You arrive on the bridge, its dark, and takes some time for you eyes to adjust. The 2nd mate informs you he is in safe water, no dangers around. You begin to investigate the echo sounder..... *Lets pause the story & watch a video.*



Situational Awareness Experiment

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Situational Awareness Experiment

Now that you have seen the video, one can understand when trying to solve one problem, another can exist, that we completely overlook or are blind to see.

The ships bridge team trying to fix the echosounder, did they see the fishing boat?



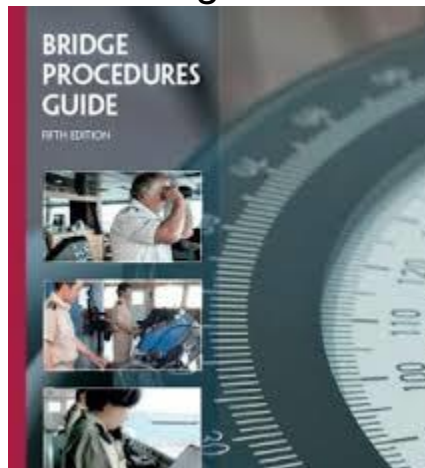
(ICS) Bridge Procedures Guide – Fifth Ed. 2016

The new version of the Bridge Procedures Guide has just been published by the International Chamber of Shipping (ICS).

“The root cause of many if not all maritime accidents lies in ship design, equipment design, and performance, operational practises & training, all of which are human related activities.

It follows that virtually all accidents may be attributed to human factors or human error.

In the event of navigational incidents, this may encourage accident investigations to focus on the immediate actions of the Bridge Team rather than other contributing human factors”



International measures related to the 'Human Element'

The IMO Res A.850(20) & Res A.947(23)

The two international measures that are at the core of IMO 's commitment to addressing the human element in the maritime industry and directly designed to affect the culture and process of seafarers on board ships and within shipping companies are:

First: The revised Convention on Standard of Training, Certificates and Watch Keeping for seafarers "**STCW Convention**" as amended.

Second: The International Safety Management Code "**ISM Code**".

The two conventions provide a set of practices and a safety system which will enhance continued success for the future of maritime industry. With the adoption of the ISM Code and STCW Convention as amended, the IMO has highlighted the dominant role played by the human element and management in safety at sea and environmental protection.

Human Element – The Solution

The revised STCW convention puts in place the enhanced training and watch keeping requirements which will continuously lead to a more skilled and flexible labour force. It will provide the framework to ensure that the personnel are appropriately trained and possess the skills to do the job properly.

The Convention has highlighted the importance of the qualifications of shipboard personnel and the importance for such personnel.

The STCW Convention is a very important instrument to deal with the influence of the human element and accidents. The Convention certification focuses on the human element including verification that vessel watch-keepers have enough rest, basic language ability, safety training and that the crew is competent.

This has to reach out to every sector of the community if it is to attract the best people to pursue Maritime careers.

Marine Notice No. 02 of 2014

Notice to all seafarers, maritime training establishments, shipping companies, ship owners, ship operators, shipmasters, and all parties concerned.

Revalidation of Certificates of Competency – new requirements under the “Manila Amendments”

1. Introduction

This Marine Notice provides guidance on the implementation of the Manila Amendments to the *International Convention on Standards of Training, Certification and Watch-keeping for Seafarers, 1978 as amended (STCW)* and supersedes information relevant to The Manila Amendments contained in Marine Notices No. 25 – 30 of 1999.

The **Manila Amendments to the STCW Convention and Code** were adopted on 25th June 2010, marking a major revision of the STCW Convention and Code. The 2010 amendments entered into force on 1st January 2012.

Seafarers revalidating their Certificates of Competency (CoCs) will be required to submit additional evidence to ensure their CoC is valid for service after 31st December 2016.

2. Transition timetable

1 January 2012	Manila Amendments entered into force.
1 July 2013	New entrants commencing training must do so in accordance with the new Manila provisions. All training programs must be in accordance with the new Manila requirements.
1 January 2014	Security training in accordance with the Manila Amendments becomes mandatory.
1 January 2017	All certificates must meet STCW Manila requirements.

3. New entrants

From 1st July 2013 all new entrants and those commencing training or a course of study leading to a higher grade of certificate, must meet the requirements of STCW, as amended, and will have to be trained according to the new standards.

Certificates of Competency issued to new entrant seafarers that commenced training after 1st July 2013 will meet all the applicable requirements and will be issued for five years from date of issue.

4. Validity and revalidation of certificates

Seafarers holding valid STCW certificates issued prior to 1st January 2012 will have to meet the new requirements in order for their certificates to be revalidated beyond 1st January 2017.

Certificates that have been presented for revalidation since 1st January 2012 have an expiry date of 31st December 2016.

Bridge Team Command & Control - BTCC

Cruise Companies;

Are now adopting BTCC in an effort to improve navigation safety aboard its vessels.

Major Companies were tasked with addressing the human element within the bridge team and to improve officer training.

The process began with a fleet assessment aboard company vessels and a review of best practices across the cruise industry. One result of these assessments recommended a change in the way bridge teams conduct their navigation plan.

Another area of improvement identified the need to standardize the training of bridge watchkeepers. As a result, cruise companies have developed new protocols for its bridge teams and constructed its own dedicated training centre, with simulators using its own ship models and equipment.

Cruise companies adopted the Bridge Team Command and Control concept, modelled after the pilot-co pilot model used in aviation. It has been successfully used aboard cruise vessels and ferries.

Bridge Team Command & Control - BTCC

Bridge Team Command and Control has been fully implemented and will now be used in the company's new simulator facility opened in July 2009 in Almere, Netherlands outside of Amsterdam. This dedicated facility consists of two full-mission bridge simulators for procedural and human factors training, and six part task simulators dedicated to Integrated Bridge System (IBS) training.

The simulators will use the same IBS and Emergency Management Systems equipment found on the newest vessels in the fleet. The simulator will include top cruise destinations in North America, Europe and Asia. The full mission bridge simulators provide berth-to-berth exercises including realistic bridge wing operations.

All deck officers will attend the facility once per year. The reinforcement of the Bridge Team Command and Control concepts, while using familiar equipment will make training more effective and responsive to the company's training requirements.

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Bridge Team Command & Control - BTCC



Conclusion

It has been proven the human element is the cause & solution to many parts of the maritime industry.

We can have all the technology available to us, but humans will still make mistakes.

In a bid to tackle Human Error, the IMO, Cruise Companies, ICS – Bridge procedures guide have all been implemented & amended procedures to try and control the Human Element.

From a navigation view:

While research and trials continue on ship-board systems the bridge of today remains much the same as it did five years ago.

For the foreseeable future humans will be the core decision makers in how ships are navigated on a day to day basis.



Thank you